

ORIGINAL

3



Pennsylvania Power & Light Company

Two North Ninth Street • Allentown, PA 18101-1179 • 610/774-5151

MEM

Paul E. Russell
Associate General Counsel
610/774-4254

FAX: 610/774-6726

June 6, 1997

VIA FEDERAL EXPRESS

James J. McNulty, Esquire
Prothonotary
Pennsylvania Public Utility Commission
P. O. Box 3265
Harrisburg, Pennsylvania 17105-3265

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JUN 6 1997

PA PUBLIC UTILITY COMMISSION
PROTHONOTARY'S OFFICE

**Re: Pennsylvania Power & Light Company
Restructuring Plan
Docket No. R-00973954**

Dear Mr. McNulty:

Attached for filing, pursuant to the Commission's regulations, 52 Pa. Code § 5.342(d), is a Certificate of Service identifying answers to interrogatories that Pennsylvania Power & Light Company served today on the active participants in this proceeding.

If you have any questions regarding this letter, please call.

Very truly yours,

Paul E. Russell/dlw

Paul E. Russell

Attachment

DOCUMENT

ORIGINAL

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Power & Light Company :
Restructuring Plan Filing : Docket No. R-00973954

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PA PUBLIC UTILITY COMMISSION
PROTHONOTARY'S OFFICE

CERTIFICATION OF SERVICE

I hereby certify that I have this day served a true copy of Pennsylvania Power & Light Company's answers to the Environmentalists' Interrogatories, Set 1, Questions 7-10, 40, 41, and 62, Set 3, 112, 115-116, 118-129, 131-134, 137-144, 146-150, 152-154, 163 and 165 upon the active participants listed below, in accordance with the requirements of §1.54 (relating to service by a participant):

Federal Express

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Tanya A. McCloskey, Esquire
Office Of Consumer Advocate
1425 Strawberry Square
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JUN 11 1997
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35 Glenlake Parkway, Suite 475
Atlanta, GA 30328

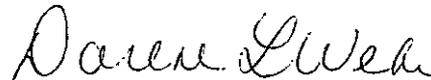
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Paul E. Nordstrom
Verner & Lipfert, Berhard, McPherson & Hand
901 15th Street, N.W., Suite 700
Washington, DC 20005

Dated this 6th day of June, 1997.



Dorene L. Wehr



Pennsylvania Power & Light Company

Two North Ninth Street • Allentown, PA 18101-1179 • 610/774-5151

Paul E. Russell
Associate General Counsel
610/774-4254

FAX: 610/774-6726

June 6, 1997 **RECEIVED**

JUN 6 1997

VIA FEDERAL EXPRESS

Alan J. Barak, Esquire
1417 Blue Mountain Parkway
Harrisburg, PA 17112

PA PUBLIC UTILITY COMMISSION
PROTHONOTARY'S OFFICE

**Re: Pennsylvania Power & Light Company
Restructuring Plan
Docket No. R-00973954**

Dear Mr. Barak:

Enclosed are Pennsylvania Power & Light Company's (PP&L) answers to the Environmentalists' Interrogatories identified in the attached Certificate of Service. As indicated in that Certificate of Service, copies of PP&L's answers have been served on all active participants in this proceeding.

If you have any questions regarding these answers, please call.

Very truly yours,

Paul E. Russell/dlr

Paul E. Russell

Enclosures

cc: Certificate of Service

**DOCUMENT
FOLDER**

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION 6 1997

PA PUBLIC UTILITY COMMISSION
PROTHONOTARY'S OFFICE

Pennsylvania Power & Light Company :
Restructuring Plan Filing : Docket No. R-00973954

CERTIFICATION OF SERVICE

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~~JUN 17 1997~~

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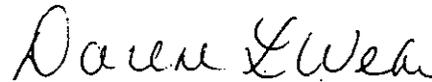
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901 15th Street, N.W., Suite 700
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Dated this 6th day of June, 1997.



Dorene L. Wehr

R. E. Hill

Pennsylvania Power & Light Company
Response to Interrogatories of the
Environmentalists, Set I
Dated April 22, 1997
Docket No. R-00973954

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JUN 6 1997

PA PUBLIC UTILITY COMMISSION
PROTHONOTARY'S OFFICE

Q. 7. First identify, and then provide, materials which the Company officers and/or Board members presented to bond rating agencies and/or securities analysts, including transcripts of oral remarks, during the periods:

- a. 1996; and/or
- b. 1997.

This request covers people, like the Chair of a corporate parent, who are presented as *de facto* Company officers and/or Board members.

A. 7. See Attachments 1 through 5 as identified below for materials presented to bond rating agencies and/or securities analysts:

- a. 1996

Attachment 1 - Growing New Prosperity - May 1996

Attachment 2 - Doing Business in a Deregulated Environment - August 1, 1996

Attachment 3 - NatWest Securities Mid-Atlantic/New England Utilities Seminar - October 1, 1996

Attachment 4 - EEI Financial Conference - October 27-30, 1996

- b. 1997

Attachment 5 - EEI Finance Committee Meeting - May, 1997

Because these documents are voluminous, copies are being provided only to the Environmentalists. A copy will be provided to other parties upon request; the report also is available for review at PP&L's General Office at Two North Ninth Street, Allentown, Pennsylvania.

DOCKETED

JUN 11 1997

DOCUMENT

FOLDER

**Pennsylvania Power & Light Company
Response to Interrogatories of the
Environmentalists, Set I
Dated April 22, 1997
Docket No. R-00973954**

- Q. 8. First identify, and then provide, each report of the ratings of the Company's securities received by the Company within the last 12 months.
- A. 8. See Attachments 1 through 3 as identified below for each report of the ratings of the Company's securities received by the Company within the last 12 months:

Attachment 1 - Moody's Investors Service (Rating Review) - July 1, 1996

Attachment 2 - Moody's Investors Service - November 1996

Attachment 3 - Fitch Investors Service - October 21, 1996

ENVIRONMENTALISTS-SET I
Question 8

ATTACHMENT 1



Pennsylvania Power & Light Company

July 1, 1996

Industry Group: Electric

Contacts

Mo Ying W. Seto 212-553-1653
Susan D. Abbott

Ratings Category **Moody's Rating**

PENNSYLVANIA POWER & LIGHT COMPANY

First Mortgage Bonds	*A3
Counterparty Rating	*Baa1
Preferred Stock	*"baal"
Shelf Registration (Preferred Stock)	*(P)"baa1"
Commercial Paper	*P-2

PENNSYLVANIA POWER AND LIGHT ENERGY TRUST

Commercial Paper	P-2
------------------	-----

* Rating confirmed

PARENT'S INTEREST IN BRITISH ELECTRIC COMPANY WILL NOT IMPACT RATINGS

Moody's confirmed the securities ratings of Pennsylvania Power and Light Company in the wake of the announcement that its parent, PP&L Resources, Inc., has acquired a 25% ownership interest in South Western Electricity plc, a British regional electric distribution company, from an affiliate of Southern Electric International.

The acquisition of South Western Electricity is for \$189 million and will initially be financed by PP&L Resources, Inc.'s revolving credit line. The acquisition is quite manageable for PP&L Resources, as it represents approximately 7% of the parent company's common equity. The 25% South Western Electricity investment will reside under Power Markets Development Company, a wholly owned independent power subsidiary of PP&L Resources. Over the next 9 to 12 months, the revolving credit borrowing will be refinanced with approximately one-half common equity and one-half debt.

P

ENVIRONMENTALISTS-SET I
Question 8

ATTACHMENT 2



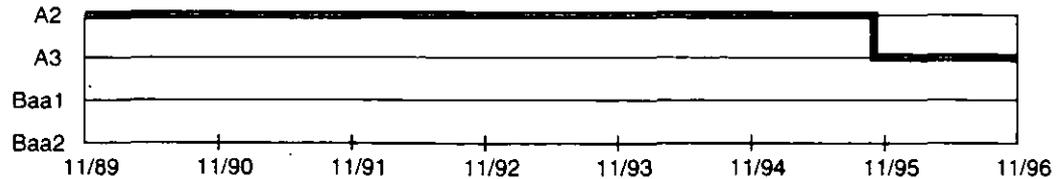
Pennsylvania Power & Light Company

November 1996

Electric

Category	Moody's Rating	Analyst	Phone
First Mortgage Bonds	A3	Mo Ying W. Seto	(212) 553-1653
Secured Pollution Control Bonds	A3	Susan D. Abbott	
Counterparty Rating	Baa1		
Preferred Stock	"baa1"	Preferred Shelf	(P)"baa1"
		Commercial Paper	P-2

Rating History



Operating Statistics

Pennsylvania Power & Light Company (Statistics in bold type)
Peer Group Median (Statistics in light type)

	[1]1996	1995	1994	1993	1992	[2]5-Yr.Avg.
Revenue (US\$ bil.)	2.9	1.0	2.8	1.0	2.7	0.9
Assets (US\$ bil.)	9.4	2.8	9.4	2.7	9.4	2.6
Com. Equity (US\$ bil.)	2.6	0.9	2.5	0.8	2.5	0.7
Op. Margin (%)	30.9	21.9	30.4	21.5	26.4	20.7
ROA (avg.)(%)	3.8	3.8	3.5	3.5	2.3	3.7
ROE (avg.)(%)	14.2	12.7	13.0	11.7	8.8	12.0
Div. Payout (%)	74.4	79.3	81.3	83.5	118.8	81.5
Pretax Int. Cov. (X)	4.1	3.4	3.7	3.3	3.1	3.2
Fxd. Chg. Cov. (X)	3.5	2.9	3.2	2.7	2.3	2.6
RCF % TD	16.6	15.0	13.2	14.3	9.6	13.1
RCF % Gross CAPEX	151.8	113.6	103.8	89.5	61.7	90.6
Total Cap. (US\$ bil.)	6.1	1.9	6.2	1.8	6.2	1.8
TD % Cap.	50.2	49.5	51.4	50.0	52.6	50.4
Pfd. Stk. % Cap.	7.6	5.7	7.6	6.3	7.6	6.2
Common % Cap.	42.2	45.0	41.0	44.3	39.8	44.3
Adj. TD % Adj. Cap.	45.5	53.7	49.6	55.2	53.3	54.9

Electric Utility Operating Statistics

Competitive Position	Break-even Price(\$)	Regional Avg.(\$)	Stranded Cost(\$mil.)	Stranded Cost % Eq.
	55.46	72.30	1,441	57

[1] For the 12 months ended June 30; Balance sheet items are as of June 30. [2] Five year average 1995-1991. [3] Five year compound annual growth rate.

Rating Rationale

Pennsylvania Power & Light Company's (PP&L) A3 senior debt rating is based on the company's excellent nuclear performance, good cash flow, manageable capital requirements, and vigorous cost-cutting efforts. The rating also reflects the company's significant asset concentration, its relatively high costs, and the difficulty it faces in offsetting revenues lost due to the expiration of long-term wholesale power contracts and customer pressure for lower prices.

PP&L has been successful in marketing its available capacity and energy off-system. However, two long-term power sales contracts will expire over the next several years. PP&L continues to seek opportunities to offset anticipated revenue loss from the returning capacity. Given an increasingly competitive climate, any new power sales are likely to be under short-

to-intermediate term contracts and at lower prices.

Due to PP&L's current capacity situation, no baseload generation will be required for at least 10 years. As a result, construction expenditures will be manageable. Fuel switching and emission allowances will be utilized instead of scrubbers to meet the requirements of the Clean Air Act.

Pennsylvania regulators and the state's legislature have been active in introducing industry restructuring proposals, addressing issues such as a multi-year transition period and recovery of above market priced investments.

Rating Outlook

We expect that given healthy cash flow and manageable capital requirements, PP&L will be able to sustain the A3 debt rating.

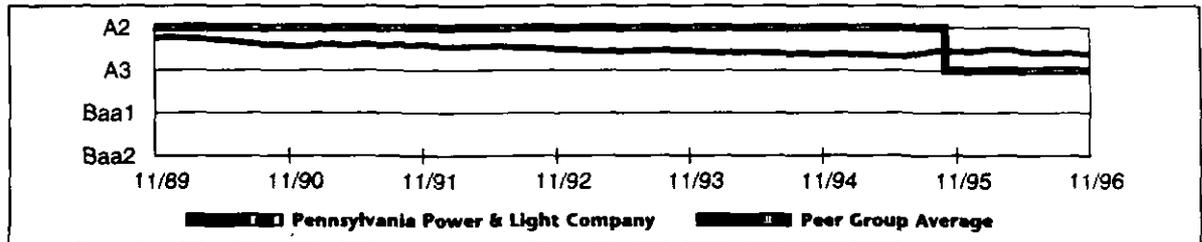
Pennsylvania Power & Light Company

In-Depth Analysis

Coupon	Type of Debt	Maturity	Moody's Rating
Pennsylvania Power & Light Company			
7.300%	First Mortgage Bonds	2024	A3
6.750%	First Mortgage Bonds	2023	A3
7.875%	First Mortgage Bonds	2023	A3
8.500%	First Mortgage Bonds	2022	A3
9.375%	First Mortgage Bonds	2021	A3
9.250%	First Mortgage Bonds	2019	A3
7.375%	First Mortgage Bonds	2014	A3
7.700%	First Mortgage Bonds	2009	A3
6.550%	First Mortgage Bonds	2006	A3
6.500%	First Mortgage Bonds	2005	A3
6.875%	First Mortgage Bonds	2004	A3
6.875%	First Mortgage Bonds	2003	A3
7.500%	First Mortgage Bonds	2003	A3
7.750%	First Mortgage Bonds	2002	A3
7.625%	First Mortgage Bonds	2002	A3

(Continued on page 9)

Rating History with Peer Group



The peer group on the front page includes 126 electric utilities. Members of the peer group may change from year to year, which may slightly alter peer group data.

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Company Fundamentals

Business Fundamentals and Competitive Position

Pennsylvania Power & Light Company (PP&L) is the principal subsidiary of PP&L Resources, Inc. (Resources), a holding company established in April 1995. At June 30, 1996, PP&L accounted for 101% of Resources' consolidated net income and 97% of consolidated assets. PP&L provides retail electricity to a large part of east-central Pennsylvania. Resources' other, unregulated subsidiaries, Power Markets Development Company and Spectrum Energy Services Corporation, offer energy-related products and services in and outside PP&L's service area.

Economic conditions vary widely over PP&L's service territory, which includes recreational areas, attractive residential communities, agriculture, coal mining, military compounds, and small industrialized cities. PP&L's revenue mix—41% residential, 35% commercial, and 24% industrial in 1995—is similar to the national average. Although PP&L's industrial customer base is diversified, a large component, including chemicals, steel, primary metals, electronic equipment, rubber and plastics, is vulnerable to economic fluctuations. A strengthening area economy contributed to solid gains in industrial sales in 1993-95, but sales to this sector remained flat in the first half of 1996.

In 1990-95, PP&L's average annual growth of 1.1% in customers, 2.6% in retail sales, and 2.9% in winter peak load was somewhat more favorable than industrywide rates of 1.2%, 2.1%, and 2.4%, respectively. PP&L forecasts about a 2% compound annual growth in on-system sales in 1995-2000—slightly higher than is forecasted for the nation. In the first nine months of 1996, retail sales were up 3.1%, reflecting abnormal first quarter weather. The weather normalized gain was at the targeted 2% growth rate. Sales growth is being promoted through economic development rates, the latter of which provide industrial customers with discounts in return for granting the utility permission to cut off electricity during periods of high demand. The company is also attempting to stimulate sales through off-peak pricing for residential and other electric heating customers.

PP&L's average commercial and industrial rates fall about the median of the seven major investor-owned utilities in Pennsylvania and the 10 major Mid-America Interconnected Network utilities. Its residential rates are the second-lowest in the region. In comparison with national norms, PP&L's residential and commercial rates are lower by 7% and 1%, respectively, and its industrial rate is 12% higher.

Management Strategy

PP&L has strategies in place to market returning wholesale capacity; to achieve 2% average annual compound growth in on-system sales; and to decrease generating costs, lower operation and maintenance expenses, hold down capital spending, and mitigate "stranded" investments. Resources is pursuing opportunities in other power markets to augment shareholder value.

PP&L has to date been successful in marketing its available capacity both on-system, to municipal utilities or cogenerators within its service territory, and off-system, to utilities outside of its service area. Because of local weather conditions, demand for electricity peaks in PP&L's service territory in the winter, while demand through the rest of the Pennsylvania-New Jersey-Maryland Interconnection (PJM) peaks in the summer. Therefore, PP&L is able to market to other PJM utilities to help them meet their peaking power needs. Firm off-system sales accounted for 12% of 1995 revenues.

As PP&L's firm contracts for the sale of its available capacity begin to expire, the company faces a revenue shortfall of about \$20 million in 1996, which will rise to about \$75 million in 2000. The 1,200 mw of firm capacity sales contracts in place in 1995 will expire in 1996-2001. The 945 mw sold to Jersey Central Power & Light Company (JCP&L) phases out by 189 mw per year starting in 1996 and ending in 1999. The sales lost under the expiration of this contract will be partially offset by a new contract under which JCP&L will purchase 150 mw in June 1997, increasing to 300 mw in 1999 and continuing through May 2004. Atlantic City Electric Company has exercised its contract termination right, which ends its 129 mw purchase in March 1998 rather than in September 2000. A 132 mw

sale to Baltimore Gas & Electric Company continues through May 2001. The costs of returning capacity are not, under the company's current rate structure, recoverable from its retail customers. PP&L is seeking new off-system sales arrangements to replace the expiring contract revenues, and is allowed to retain all the revenues from such sales.

PP&L's plans to increase efficiency and reduce generation costs include upgrading each of the two Susquehanna nuclear units by 72 mw (7%) in the next several years; lengthening the fuel cycles from 18 months to 24 months; and reducing refueling outages to 28 days from 38 days, the lowest achieved by PP&L. The ongoing conversion of the two Martins Creek units (1,592 mw) to burn gas as well as oil will reduce fuel costs and permit higher capacity operations at this plant. Work force reductions and improvements in work processes and inventory systems will be important factors in reducing annual operation expenses, other than fuel and purchased power, by a targeted \$50 to \$60 million (about 8%) from 1995 to 2000.

PP&L has reduced capital spending by \$692 million, or 35%, from amounts previously budgeted for 1996-2000. The substitution of fuel switching and the use of banked and purchased emission allowances for the installation of scrubbers on the two 750-mw Montour units account for 58% of the reduction.

To eliminate obligations that may become "stranded," or unrecoverable through rates in an open market, PP&L has requested that the Federal Energy Regulatory Commission (FERC) decertify an 80-mw qualifying facility contract. (A qualifying facility is a non-utility power producer or cogenerator that meets specific operating, efficiency, size, and fuel source standards established by the FERC. The Public Utility Regulatory Policies Act of 1978 ensured a market for power generated from alternative energy sources by requiring local utilities to buy power from qualified facilities under long-term contracts.) The company is also seeking approval from the Pennsylvania Public Utility Commission (PPUC) to buy out a 100-mw non-utility purchase contract for \$90 million and to recover this cost over five years, and to buy out an 18-mw contract for \$18 million and to recover this cost over four years. These actions, if approved, would lower by about \$40 million the annual cost to customers of the 474 mw now being purchased from non-utility generators. PP&L also expects to shrink its Susquehanna investment from \$1,630 per kw at year-end 1995, possibly by accelerating depreciation, reallocating depreciation reserves and among other things, which would be subject to PPUC approval.

At mid-year 1996, Resources had an approximate \$95 million equity investment in its unregulated affiliates, primarily in Power Markets Development Company (PMDC). However, by August 1996, PMDC had about \$250 million in investments and commitments, including \$189 million investments for its July 1996 acquisition of a 25% interest in South Western Electricity plc, a United Kingdom electric distribution company, rated Prime-2 for short-term debt by Moody's. Resources expects the South Western investment to contribute 1% to 2% of additional annual earnings over the next few years. In addition, PMDC currently has interests in projects in South America, Spain, and Portugal. By 2000, PMDC expects it will have approximately \$500 million of investments that will contribute 10% to 20% of Resources consolidated earnings.

Regulation and Rates

PP&L currently has no plans to file another retail rate case. It cannot charge on-system customers to recoup lost revenue from returning capacity since that capacity is not in rate base nor can it accelerate depreciation of the Susquehanna station without filing a rate case.

A September 1995 decision by the PPUC resolved significant accounting issues for PP&L. Most importantly, the rate order granted PP&L's request to levelize Susquehanna depreciation accruals for the period October 1, 1995, to December 1998, which avoids the adverse earnings effects of annual increases in modified sinking fund depreciation accruals in those years. The 3.8% jurisdictional rate increase the PPUC allowed will be offset by a \$90 million rate decrease beginning January 1, 1999, as PP&L proposed, to reflect straight-line depreciation accruals on the Susquehanna plant. The most negative aspect of the rate order was to lower the allowed return on common equity from the 13%

requested by PP&L to 11.5%. However, the 11.5% return is consistent with the PPUC's allowances in other cases, as well as with allowances granted by other state commissions. Because of the opportunity to earn on deferred investment tax credits, an earned return of 12.5% calculated by the PPUC's ratemaking methodology would not exceed the 11.5% rate case allowance. Other differences, such as the exclusion of returning capacity from base rates, affect comparisons between the ratemaking and book basis returns.

Electric Utility Restructuring

Although industry restructuring initiatives are under review in Pennsylvania, a completely open market may still be several years away. As a result, management at PP&L has a window of opportunity to shed costs in preparation for a more competitive market.

In July 1996, the Pennsylvania Public Utility Commission recommended a five-year transition to retail competition. The state's utilities are to submit their tentative restructuring plans to the PPUC by April 1, 1997; voluntary pilot retail access plans can be implemented after that date. The five-year transition period would be followed by a four-year phase-in to full retail electric competition by 2005. Two proposed restructuring bills in the state legislature have similar phase-in provisions. Republican Governor Tom Ridge's objective is for enactment of restructuring legislation in the 1996 legislative session, which has seven remaining days after the November elections.

The PPUC recommends that utilities be afforded the opportunity, but not a guarantee, to recover up to 100% of prudent, stranded costs. The PPUC's restructuring proposal also includes the establishment of an independent system operator of bulk power transmission and power market exchange, which are under FERC jurisdiction. The commission requires unbundling of distribution services and of tariffs from generation or transmission services. Other recommendations include flexible pricing and performance-based rates. The PPUC recognizes that legislative adjustment of state taxes on utilities may be required.

PP&L filed a pilot retail access program with the PPUC on October 1, 1996. If approved, the plan could be effective July 1997, and would end December 31, 1998. The plan is revenue and earnings neutral to PP&L, but is expected to provide information about competitive market operations. PP&L would invite selected alternative suppliers to participate in the program. The plan would involve about 54,000 customers, who would receive a 2 cent per kilowatt-hour (kwh) credit on their monthly bills and would realize savings if a participating alternative supplier offers energy at less than 2 cents per kwh.

In mid-October 1996, the FERC set its first stranded cost hearing. This case involves all 16 of the municipal customers served by PP&L that are seeking to switch to another power supplier. These customers are locked into contracts with PP&L through 1999. The FERC proceeding may address how much, if any, of the \$95 million in stranded costs claimed by PP&L should be paid by the municipalities. In 1995, the 16 municipalities accounted for about 126 mw at an average rate of 4.6 cents per kilowatt, or approximately \$34 million in revenue.

In another proceeding challenging barriers to competition, Amtrak is seeking to change from a retail to a wholesale power purchaser. If Amtrak is successful, PP&L could lose all or part of the revenue (\$6.2 million in 1995) from this 120-mw customer.

Risks/Weaknesses

- The level of stranded cost recovery under the PPUC's electric utility restructuring proposal is uncertain.
- The Susquehanna nuclear station represents significant asset concentration.
- PP&L is under pressure to offset revenue losses from expiring firm wholesale contracts to avoid eventual earnings impairment.
- Resources' increased nonregulated investments could introduce greater financial risk for PP&L.

Opportunities/Strengths

- Management is capable and conservative.
- The PPUC's proposed move to full retail electric competition over a nine-year period and the phase-in plans of two bills pending in the state legislature should protect the financial integrity of the state's electric utilities.
- The two Susquehanna nuclear units continue to operate very well.
- We expect that PP&L will continue to strengthen its financial profile, given its strong cash flow and very manageable capital spending requirements.

Financial Analysis

PP&L's earned return excluding unusual items rose from 11.5% in 1995 to 13.0% for the 12 months ended June 1996 (from 11.3% to 12.2% after an additional adjustment to eliminate abnormal weather conditions). A further gain in earned return was realized for the 12 months ended September 1996, which reflected a full year's impact of the 1995 rate order.

Adjusted earnings for 1995 and for the 12 months ended June 1996 resulted in pretax interest coverage of 3.1 times and 3.4 times, respectively (3.1 and 3.2 weather adjusted). Including the estimated interest component in power purchase contracts reduces the coverage by about 0.6, but firm off-system sales largely offset this effect. PP&L's prospective debt retirements and cost-cutting programs should support coverage ratios at or near current levels in the next few years. The longer-term outlook is dependent on replacing revenue from expiring bulk power contracts.

Resources expects that all of PP&L's 1996-2000 construction program (\$1.3 billion) and debt maturities (\$415 million) will be met from internally generated cash. PP&L has no preferred stock sinking fund requirements during this period. PP&L's common dividend payout is currently high (94% in 1995 and 89% in the June 1996 year, based on fully adjusted earnings) and its internal cash generation is mainly depreciation accruals. Resources pays shareholders essentially the full amount of PP&L's upstreamed dividends.

At June 30, 1996, PP&L's book basis capitalization consisted of 49% debt (including 1% short-term), 8% preferred stock, and 43% common equity, a strong improvement over 53% debt, 8% preferred stock and 39% common equity a year ago. A declining rate base and payments of maturing debt provide additional opportunities to strengthen these ratios.

Resources' consolidated capital structure at June 30, 1996 consisted of 50% debt (including about 4% short-term), 7% PP&L's preferred stock, and 43% common equity. The short-term debt includes temporary financing of the \$189 million South Western Electricity investment with revolving credit loans, to be replaced over the next year with about one-half common equity and one-half long-term debt. Resources plans to invest \$50 million to \$100 million per year in nonregulated energy-related businesses. Additional funding of these activities will include non-recourse debt financing.

At June 30, 1996, Resources' investments in unregulated subsidiaries did not have a significant impact on consolidated debt-protection measurements. However, Resources plans to expand its unregulated, energy-related operations over the next five years. Significant unregulated investments could increase the level of business and financial risk for PP&L.

	1995	1994	1993	1992	1991
Coverage Analysis (Excl. AFUDC and Other Allowances)					
Pretax interest coverage	3.68	3.06	3.36	3.21	3.17
SEC interest coverage	3.73	2.92	3.16	3.03	2.93
SEC fixed-charge coverage	3.16	2.50	2.65	2.49	2.38
Funds from oper. % interest exp.	3.92	3.54	3.81	3.64	4.00
Funds from oper. % net CAPEX (%)	174.86	121.04	142.86	164.50	210.82
Funds from oper. % net CAPEX + pref. div.	163.26	114.43	133.30	149.63	187.68
Funds from oper. % total debt (%)	21.57	18.38	21.67	22.06	25.46
Deferred charges as % of common equity	52.65	49.95	58.78	10.53	6.21
Earnings Analysis					
<i>Return on avg.</i>					
Common equity	13.02	8.85	13.11	13.13	13.44
Total assets	3.45	2.29	3.56	3.80	3.88
Total capital	6.83	5.54	7.33	8.17	8.28
AFUDC as % net income	3.43	5.35	4.48	4.31	3.42
Earnings per share (avg.)	0.00	1.41	2.07	2.02	4.01
Market value % book value	—	120.36	169.33	174.86	173.65
Dividends paid	0.00	1.67	1.65	1.60	3.07
Price / earnings ratio	—	13.48	13.04	13.49	13.12
Asset Composition					
Total assets	9,423.8	9,371.7	9,454.1	8,191.8	7,934.6
<i>As % total assets</i>					
Net utility plant	75.6	76.0	74.0	83.7	85.1
Investments	3.4	3.2	4.4	4.9	4.7
Current assets	6.9	7.7	6.5	8.4	8.4
Deferred charges	14.1	13.1	15.1	3.0	1.8
<i>As % gross electric plant</i>					
<i>Electric plant in prod. (gross)</i>					
Fossil	20.2	19.6	18.5	18.1	17.9
Nuclear	39.5	39.9	41.0	42.2	43.2
Hydroelectric	1.0	1.0	0.8	0.8	0.8
Gas turbine	0.4	0.3	0.4	0.3	0.3
Total electric plant in prod.	61.1	60.8	60.7	61.4	62.2
<i>Other electric plant (gross)</i>					
Transmission	3.7	4.3	4.4	4.4	4.3
Distribution	25.9	24.4	23.7	23.1	22.0
Common plant	4.9	5.0	4.9	4.9	4.6
Construction in process	1.7	2.1	2.5	2.3	2.0
Nuclear fuel	2.8	3.4	3.8	3.9	4.8
Total other electric plant	38.9	39.2	39.3	38.6	37.8
Construction					
Construction expenditures (excl. AFUDC)	391	492	472	407	362
CWIP % common equity	6.7	8.6	9.8	8.9	8.0
CWIP % gross plant	1.7	2.1	2.5	2.3	2.0
Constr. exp. % prior year cap.	6.3	8.1	7.9	6.9	6.2
Constr. exp. % prior yr. gross plant	3.9	5.1	5.1	4.5	4.1

	1995	1994	1993	1992	1991
Market Analysis					
Total operating revenue	2,751.8	2,725.1	2,727.0	2,744.1	2,559.7
<i>As % total oper. revenue</i>					
Electric	100.0	100.0	100.0	99.9	99.9
Non-utility	0.0	0.0	0.0	0.1	0.1
<i>As % total electric revenue</i>					
Residential	0.0	34.2	33.2	32.0	33.0
Commercial	0.0	27.7	27.0	26.0	26.9
Industrial	0.0	19.3	19.2	19.1	19.8
Public authority	0.0	0.9	0.9	0.6	0.6
Wholesale	0.0	16.3	17.5	18.6	15.2
Other	100.0	1.6	2.2	3.7	4.5
KWH Sales	0	41,779	42,334	42,242	36,219
<i>As % total KWH sales</i>					
Residential	—	27.4	26.1	25.1	28.7
Commercial	—	23.3	22.1	21.4	24.5
Industrial	—	22.8	21.5	20.7	23.3
Other	—	0.5	0.5	0.2	0.2
Wholesale	—	26.0	29.8	32.6	23.3
<i>Average revenue per KWH (cents)</i>					
Residential	—	8.14	8.20	8.27	8.11
Commercial	—	7.77	7.84	7.89	7.76
Industrial	—	5.52	5.76	5.98	5.98
Wholesale	—	4.09	3.78	3.71	4.62
Peak Load Analysis					
<i>Summer (MW)</i>					
Generating capacity	0	8,160	8,115	8,115	8,115
Firm purchases	0	743	643	643	638
Less sales	0	1,170	1,166	1,166	1,041
Peak load	0	5,638	5,409	5,104	5,398
Summer excess capacity	0	2,095	2,183	2,488	2,314
<i>Winter (MW)</i>					
Generating capacity	0	8,404	8,359	8,359	8,359
Purchases	0	643	643	643	638
Less sales	0	1,203	1,200	1,200	1,200
Peak load	0	6,508	6,403	6,130	5,974
Winter excess capacity	0	1,336	1,399	1,672	1,823
<i>Reserve margins</i>					
Summer	—	37	40	49	43
Winter	—	21	22	27	31

(Continued from page 2)

Coupon	Type of Debt	Maturity	Moody's Rating
7.250%	First Mortgage Bonds	2001	A3
6.000%	First Mortgage Bonds	2000	A3
8.125%	First Mortgage Bonds	1999	A3
7.000%	First Mortgage Bonds	1999	A3
5.500%	First Mortgage Bonds	1998	A3
6.750%	First Mortgage Bonds	1997	A3
Counterparty Rating			Baa1
6.15%	Cum. Pfd. Stk.	2003	"baa1"
6.05%	Cum. Pfd. Stk.	2002	"baa1"
5.95%	Cum. Pfd. Stk.	2001	"baa1"
4.50%	Cum. Pfd. Stk.		"baa1"
3.35%	Cum. Pfd. Stk.		"baa1"
4.40%	Cum. Pfd. Stk.		"baa1"
4.60%	Cum. Pfd. Stk.		"baa1"
6.33%	Pfd. Stk.		"baa1"
6.125%	Cum. Pfd. Stk.		"baa1"
6.75%	Cum. Perp. Pfd. Stk.		"baa1"
	Commercial Paper		P-2
Prospective Shelf Under Registration			
	415 Shelf Registration		(P)"baa1"
Pennsylvania P & L Energy Trust			
	Commercial Paper		P-2

ENVIRONMENTALISTS-SET I
Question 8

ATTACHMENT 3

Research

Pennsylvania Power & Light Co.

Ratings (Taxable)

\$2,569,750,000 First Mortgage Bonds.....	A
First Mortgage Bond Shelf Registration.....	A
(Registered under SEC Rule 415)	
\$466,375,000 Preferred Stock.....	A-
Preferred Stock Shelf Registration.....	A-
(Registered under SEC Rule 415)	
Commercial Paper.....	F-1

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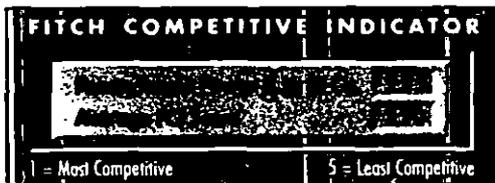
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Commercial Paper Dealers

Merrill Lynch Money Markets Inc.
CS First Boston Corp.



Summary

Pennsylvania Power & Light Co.'s (PP&L) ratings and its Fitch Competitive Indicator (FCI) score reflect the company's inherent strengths, which should enable maintenance of bondholder protection measures while Pennsylvania's policymakers introduce competition into the state's electric utility industry.

With the announcement of a proposed pilot program to provide up to 54,000 customers with supplier choice by 1997, PP&L is at the forefront of an effort to swiftly transition Pennsylvania to a competitive electricity marketplace. The movement to competition will clearly impact the company's business and financial profile. PP&L management is preparing for the future by cutting costs another 8%, restructuring, and emphasizing marketing strategies. Externally, PP&L recently applauded the leadership efforts of Pennsylvania's governor, Public Utility Commission, and General Assembly to seek an expedited, but phased, transition to competition. Additionally, PP&L is one of seven investor-owned utilities to form the Partnership for Customer Choice, which seeks federal legislation for retail wheeling.

PP&L is burdened by high fixed-cost nuclear capacity, but the company benefits from low variable production costs. Consequently, the company is a major seller of wholesale electricity in the mid-Atlantic mar-

ket. Currently, wholesale prices for interchange electricity are well below levels contained in PP&L's expiring contracts, and the company's margins and cash flows will be adversely affected. Longer term, PP&L's substantial capacity and low variable costs could enable the company to succeed in competitive retail and wholesale markets. In the interim, PP&L is emphasizing economic development to supplement its retail load and seeking wholesale transactions to replace profits lost with expiry of lucrative term contracts.

The ratings reflect the company's moderate sales growth, broadly diversified retail customer base, competitive pricing to large customers, abundant and economic coal-fired and nuclear generating resources, and sound financial condition. PP&L has completed a period of expenditures related to environmental projects, and future annual investments will be slashed from the \$500 million level to below \$250 million. Additionally, capital expenditures will be targeted away from generating plants and toward the less risky transmission and distribution segments of the business. With moderate dividend payments to the parent and declining capital spending, excess cash will reduce debt by about \$700 million over the next five years.

Concerns include management's ability to continue excellent nuclear operations at the Susquehanna Nuclear Steam Station in the face of increased scrutiny of the nuclear industry by the Nuclear Regulatory Commission (NRC). Additionally, Fitch is concerned about recovery of the \$3.2 billion Susquehanna investment, since capital improvements continue and PP&L has not announced a plan increase depreciation. Further, as a major producer of electricity from coal-fired fossil plants, PP&L could face environmental regulations that may affect coal-fired utilities after 2000. Currently, these concerns do not outweigh PP&L's improving financial and business profile.

Strengths

- Improving financial condition; cash flow supports debt reduction.
- Benefiting from earlier restructuring; operations and maintenance expense is contracting.
- Diversified sales and competitive pricing to industry reduce revenue at risk.
- Good generating plant performance, with power supply at 2.5 cents per kilowatt-hour (kwh).
- Moderate retail sales growth, at about 2% annually.

- Winter peaking company with opportunities for seasonal off-system sales.
- Support of regulators, legislators, and shareholders.

Risks

- Susquehanna nuclear investment of \$1,600 per kilowatt (kw), or \$3.3 billion.
- Concentration of nuclear resources.
- Excess baseload capacity; remarketing risk, with about 1,200 megawatts (mw) coming off long-term contracts with regional utilities.
- Rate design; as competitive era approaches, rates charged residential customers may not reflect full cost of service.
- Not in natural gas business.
- Potential stranded cost for purchases from non-utility generators; paying 6.19 cents per kwh versus spot market cost at 2.75 cents per kwh.
- Clean Air Act (CAA) exposure.

Background

PP&L is a large, all-electric utility serving approximately 1.2 million retail customers throughout a 10,000-square-mile service territory in central eastern Pennsylvania. Major load centers include the cities of Allentown, Bethlehem,

Key Events Over the Last 12 Months

- September 1997: PP&L's Board of Directors approved a base rate increase of 2.5% to \$0.025 per kWh, effective October 1, 1997.
- January 1997: PP&L received approval from the Federal Energy Regulatory Commission (FERC) for its proposed rate of return on equity of 10.5%.
- July 1997: PP&L received approval from the Federal Energy Regulatory Commission (FERC) for its proposed rate of return on equity of 10.5%.
- October 1997: PP&L implemented a pilot program allowing 47,000 residential customers and 6,600 commercial and industrial clients to choose their electricity supplier for 1997.
- October 1997: PP&L announced that it has no new wholesale capacity in its portfolio and that its capacity is returning to a level of 10,000 MW.
- October 1997: PP&L announced that its 1997 refueling began September 1997 and that it had 36-40 days left in its 1997 refueling cycle. A 16-month operating history of the plant has been detected.
- October 1997: PP&L announced that Archbald Power Corp. (APC) has been placed under long-term contract. Construction is projected at \$53 million.

Harrisburg, Hazleton, Lancaster, Scranton, Wilkes-Barre, and Williamsport. In 1995, the company became the principal operating subsidiary of PP&L Resources, Inc., an Allentown-based holding company.

Pennsylvania is served by seven investor-owned utilities. According to Resource Data International, Inc. (1994 data), PP&L and its neighbor, PECO Energy Co., have similar shares of the generation and retail market. For example, the seven utilities generated 135.1 billion kwh in 1994; of this, PP&L's 37.9 billion kwh represented a 28.0% share of generation, and PECO's share was 28.7%. As for sales, the state's ultimate consumption was 119.6 billion kwh; of this, PP&L delivered 25.7% (30.8 billion kwh), while PECO tallied 27.3% (32.8 billion kwh).

Electric Business Overview — 1995

	(mwh)
Electric Generation	
Steam	24,143,703
Nuclear	14,056,497
Hydroelectric	600,358
Other	24,728
Total Generation	38,825,286
Net Purchases	6,599,647
Total Power Supply	45,424,933
Energy Sales	
Ultimate Customers	31,507,573
Resale Customers	11,431,901
Total	42,939,474

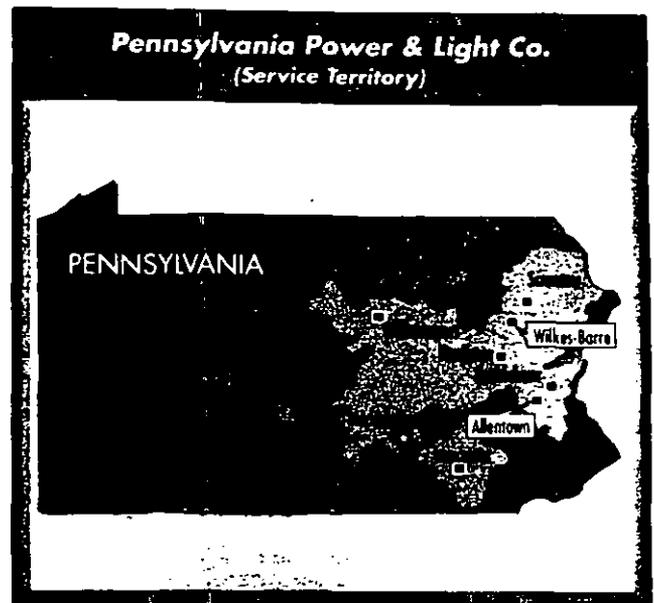
Data source: Company Federal Energy Regulatory Commission Form Number 1. mwh - megawatt-hours.

Demographics/Market Prospects

The company's market situation is considered average despite the risk associated with PP&L's extensive wholesale transactions. PP&L has several long-term contracts to sell power at higher than market rates; as the contracts mature, it is unlikely the wholesale revenue will be replaced in any new transactions. PP&L's retail market profile typifies that of the U.S. investor-owned electric utility industry in terms of customer mix and moderate sales growth. Sales are balanced across market segments, and there is no concentration exposure with any customer or industry.

Retail Prospects

PP&L benefits by serving a large franchise area located near heavily populated mid-Atlantic markets, and new industry has been attracted by the area's affordable real estate and labor. In contrast with numerous slow-growth utilities in the Northeast, PP&L has experienced increased



sales to industrial accounts; in 1995, industrial load was up 3.2%, outpacing solid 2.4% growth in commercial sales. While PP&L has emphasized regional economic development and management hopes to exceed its 2% retail growth projection, PP&L faces stiff competition from other states seeking new industry. For the 12 months ended June 30, 1996, PP&L's sales to industry grew by only 0.4%.

As shown in the pie charts on page 4, revenues from industrial customers represent 24% of total retail revenue, versus 23% nationally. PP&L benefits by deriving 41% of its retail revenue from the residential segment.

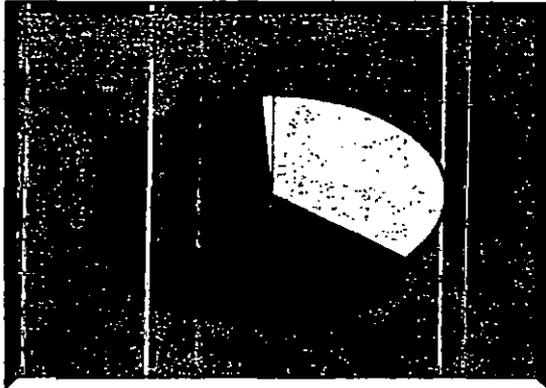
Within the industrial category, the four largest segments served are food products (14%), primary and fabricated metals (12%), chemicals (11%), and steel manufacturing (9%). The company's largest customer, Bethlehem Steel Corp., represents less than 2% of revenue. The Pennsylvania economy is subject to economic cycles, and, in past recessions, PP&L's sales declined to industrial customers (from 1989-1991, industrial sales declined 3.9%). Recently, the economy has diversified, with increased activity in distribution, printing, technology, and food processing.

Off-System Energy Sales

Since the mid-1980s, PP&L has benefited from contracts for sales of capacity and energy, which allowed full recovery of the costs associated with new generation that was not allowed into retail rates. The contracts are with Atlantic City Electric Co. (ACE), Jersey Central Power & Light Co. (JCP&L), and Baltimore Gas & Electric Co. (BG&E). The JCP&L contract is the most significant; through 1995, it entailed 945 mw of capacity and energy. This arrangement is now running off in annual decrements of 189 mw until expiry in 1999. The ACE contract provides 125 mw from

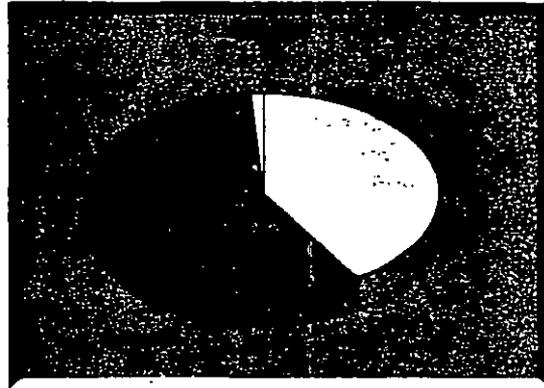
Volume and Revenue

Sales \$Bil.



1995 Total Retail (kwh): 31,278,519

Electric Revenue



1995 Total Retail (\$ Mil.): 2,229.8

Sources: 1996 Resource Data International, Inc. POWERGEN Database; Edison Electric Institute 1994 Finance Review; annual report of the investor-owned electric utility industry.

PP&L's wholly owned coal-fired units until 1998. The BG&E agreement, for 125 mw from Susquehanna, extends to 2001.

As 1,200 mw of previously sold capacity returns to PP&L, the company is challenged to replace the lost revenue with new wholesale products. Since the capacity remains outside of retail rates, PP&L will absorb associated fixed capital and operating costs, adding urgency to the continued cost-cutting initiatives.

PP&L is competing with other major utilities that have excess capacity. Consequently, the alternative market for PP&L's generation is the Pennsylvania/New Jersey/Maryland (PJM) power pool, where the current yield is approximately 2.5-2.7 cents per kwh. The company's expectation for increased sales to PJM and diminished utility sales under contract is shown in the chart at right.

Rates

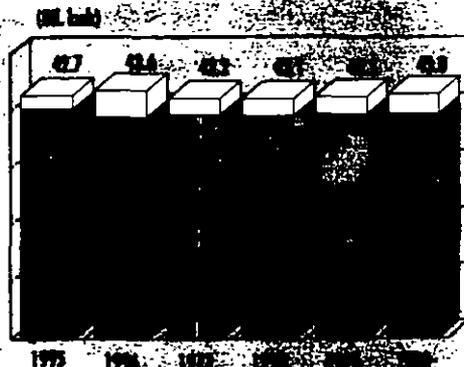
As illustrated in the table on page 5, PP&L's average 7.4 cents per kwh rate is favorable when compared to 8.5 cents per kwh charged by a group of 14 neighboring investor-owned utilities. Furthermore, PP&L's rates for residential and commercial customers are acceptable when compared with those of the national industry, but the company is vulnerable, with above-average realization from industrial customers. Despite the major effort to get a rate increase authorized in late 1995, management now feels that rates are too high and professes that retail price reduction will be achieved if customers are given choice and generation is deregulated.

PP&L has only three retail customers under contract, and management considers that the neighboring utilities that

seek long-term contracts with retail customers are demonstrating lack of competitiveness. However, PP&L has about 60 of its largest customers on interruptible rate schedules; sales to this group constitute almost 10% of overall retail load. While PP&L indicates a 4.0-cent per kwh average interruptible price, select industry segments, such as air reduction customers, are priced as low as 3.2 cents per kwh.

In 1999, PP&L's base rates, related to past regulatory orders phasing in depreciation of the company's invest-

Future Sales



PJM - Pennsylvania/New Jersey/Maryland power pool. Source: PP&L Resources, Inc. Uniform Forecast for Utility Assets, June 5, 1996.

Average Rates*

(Cents per kwh)

Company	Residential	Commercial	Industrial	Average
Pennsylvania Power & Light Co.	8.6	7.9	5.6	7.4
Average Rates for 14 Neighboring Investor-Owned Utilities	9.9	8.3	5.8	8.5
Edison Electric Institute Average as of March 31, 1996	8.3	7.5	4.7	6.9
Principal Neighboring Investor-Owned Utilities				
Appalachian Power Co.**†	5.7	5.1	3.7	N.A.
Jersey Central Power & Light Co.	12.3	11.2	8.9	11.9
Virginia Electric & Power Co.**	8.4	6.2	4.4	N.A.
Metropolitan Edison Co.	8.8	7.8	6.0	7.4
Atlantic City Electric Co.	12.5	10.7	8.9	11.2
Pennsylvania Power Co.	9.6	7.8	4.9	7.1
Duquesne Light Co.	12.2	8.3	5.8	8.8
New York State Electric & Gas Co.	13.7	11.6	8.2	8.2
Pennsylvania Electric Co.	8.6	7.4	5.5	7.1
Philadelphia Electric Co.	13.0	12.3	7.2	9.2
Niagara Mohawk Power Co.	12.1	10.7	5.2	8.3
Baltimore Gas & Electric Co.	8.7	6.9	4.5	7.2
West Penn Power Co.	6.9	5.9	4.5	5.7
Public Service Electric & Gas Co.	11.7	9.8	7.8	10.0

*As of May 1996. **1995 pricing data from Regulatory Research Associates, Inc. †An American Electric Power Co., Inc. company. kwh - kilowatt-hours. Source: Pennsylvania Power & Light Co. data. N.A. - Not available.

ment in Susquehanna, are scheduled to decline by \$90 million. In late 1995, as PP&L was deflecting PECO Energy's unfriendly acquisition effort, management confirmed that the full \$90 million reduction would definitely occur. Although no announcement has been made on this point, it is likely that PP&L will attempt to retain some of these revenues to meet its goal of reducing Susquehanna's fixed cost from \$1,600 per kw to \$750 per kw.

Although PP&L's retail revenue requirement is based on total fixed investment in plant and recovery of costs of service, it is possible that the company's smaller industrial customers have been subsidizing residential customers. On a national basis, the rate spread between residential and industrial customers is about 3.7 cents, while PP&L's inter-class spread is 3.0 cents. Fitch expects that PP&L will seek rate redesign prior to the scheduled 1999 rate reduction to correct any misallocation.

Regulation

Currently, other than reviewing a \$90 million contract buyout with a non-utility generator and a retail pilot program, PP&L does not have any matters under formal consideration by the Pennsylvania Public Utility Commission (PUC), a five-member appointed body that has jurisdiction over the company's retail rates. The PUC's most recent actions impacting PP&L include the authorization of

a 4.8% base rate increase, totaling \$107 million, that was granted in 1995 and a \$42 million rate reduction effective March 1996 resulting from lower coal costs. The 1995 rate action represented the first rate order for PP&L since 1985.

At the Federal Energy Regulatory Commission (FERC), PP&L has a motion seeking FERC decertification of an 80-mw cogenerator as a qualifying facility; if PP&L prevails, the annual savings will approximate \$10 million. Also, PP&L, along with other PJM company co-sponsors, has provided FERC with a restructuring plan designed to establish a new wholesale energy market. The proposal is intended to meet obligations of recent FERC Orders 888 and 889 and calls for the creation of an independent system operator, a spot-energy market open to any buyer and seller, bilateral energy arrangements, and the ability for load-serving entities within PJM to share generating capacity reserves.

Currently, the Pennsylvania regulatory situation is on the cusp of major change, as the PUC concluded in July that it is in the public interest to begin a transition to competition for all retail customers. This view has been supported by Pennsylvania Governor Tom Ridge. The governor has asked the PUC to develop consensus legislation that could be enacted as early as November-December 1996. Individual PUC commissioners have expressed their commitment to respect the financial viability of investor-owned

utilities under their jurisdiction, and the commissioners recognize that a significant number of PP&L residential customers are common stockholders.

The PUC feels the ultimate legislation will conform with the PUC's plan to introduce competition in two phases. In Phase 1, utilities will prepare for competition and conduct pilot programs in the period up to 2001. This should be followed by a four-year phase-in to full customer choice. However, other interested parties have their own views, and, based on Allegheny Power Co.'s proposal seeking a more rapid transition to the competitive electric marketplace, it is possible that customer choice will be in place within five years.

Since January 1996, PP&L has been a vocal supporter of deregulation. Management stresses that competition will benefit customers through lower price and improved service while PP&L is able to market its excess capacity to new markets. PP&L has proposed a customer choice pilot program in Pennsylvania, an important step toward competition. The company has requested that the PUC act on this petition by April 1997, with program implementation by July.

Additionally, the PUC has required all electric utilities under its jurisdiction to file their individual restructuring plan in early 1997. PP&L will identify stranded costs and investments, outline efforts to mitigate stranded costs prior to competition, and describe any mechanism to recover stranded costs. It is possible that PP&L will seek to establish a rate cap that will allow funds generated through cost savings to be used for more rapid writedown of above-market nuclear investment. Also, assuming favorable legislation is enacted in Pennsylvania, PP&L may seek to sell stranded costs to a special-purpose financing vehicle that would sell nonrecourse rate reduction bonds. The bonds would be supported by the assignment of nonbypassable tariffs on retail customer bills. PP&L, and the PUC commis-

sioners, are actively considering such securitization at this time and appear enthusiastic about the possibility.

Generating Resources

PP&L is a competitive generator of baseload electricity; therefore, the company is a consistent seller of spot energy into the PJM interchange and is eager to negotiate bilateral term contracts with other utilities. The favorable competitive status should be maintained, as management has specific plans to cut operations and maintenance by an additional 8% and wants to subject its generating plants to competition. PP&L will develop savings by eliminating about 10% of its fossil segment work force by 2000 and moving its nuclear units to 24-month refueling cycles starting in April 1997.

As shown in the table below, PP&L's production cost is 2.1 cents per kwh, ranking the company among the leaders in the Pennsylvania market.

PP&L is not constructing new generation but, in effect, is adding about 700 mw to its capability by 2000 as previously sold capacity is returned from contracts. Until replacement contracts are established, this capacity will meet spot energy requirements in PJM and, on average, yield about 2.5-2.7 cents per kwh. PP&L's reserve margin is expanding to a projected 22% by 2000 from 16% as capacity returns.

The company's major fuel source is coal, accounting for 62% of 1995's generation, well above nuclear (36%) and hydroelectric power (2%). The fossil fleet has low embedded costs since the net investment is \$370 per kw. The units operate well, with 81% equivalent availability over the past five years. Additionally, PP&L modified its Martins Creek units 3 and 4 to burn either oil or gas; this capability allows the baseload coal units to operate efficiently.

As shown in the table on page 7, PP&L's principal coal-fired stations are Montour and Brunner Island; to-

Variable Costs of Production

(Cents per kwh)

	Total Generation (mwh)	Production Costs*	Purchased Power	Total Power Supply
Pennsylvania Power & Light Co.	37,970,762	2.14	4.13	2.50
PECO Energy Co.	38,880,189	2.44	2.12	2.38
Duquesne Light Co.	15,435,659	2.54	3.39	2.58
Metropolitan Edison Co.	7,987,613	2.26	4.57	3.05
Pennsylvania Electric Co.	13,347,966	1.94	4.77	2.51
Pennsylvania Power Co.	3,963,638	2.45	1.91	2.37
West Penn Power Co.	17,889,943	1.89	4.13	2.45

*Includes fuel costs and operations and maintenance costs in generation. Source: 1996 Resource Data International, Inc. POWERdat® database information for 1994. kwh - kilowatt-hours. mwh - megawatt-hours.

Generating Plants

	Fuel Type	PP&L's Share of Net Capability (mw)	1995 Generation (Mil. kwh)	Total Plant Cost (\$ Mil.)	Production Costs (¢/kwh)*	Plant Factor (%)	Gross Investment per kw (\$)
Nuclear Unit							
Susquehanna	Uranium	2,072	14,045	4,494	1.76	77.32	1,950
Fossil Units							
Montour	Coal	1,641	8,945	455	1.82	62.20	277
Brunner Island	Coal	1,469	7,764	520	1.98	56.86	334
Sunbury	Coal	389	2,350	263	2.28	65.49	642
Conemaugh	Coal	195	1,341	97	1.60	71.83	453
Keystone	Coal	206	1,428	63	1.79	70.57	274

*Production costs include operations, maintenance, and fuel costs. kwh - kilowatt hours. mw - megawatts. kw - kilowatts. Data source: 1996 Resource Data International, Inc. POWERdat® database.

gether, these plants produce about 17 billion kwh. The production cost at these major stations is less than 2.0 cents per kwh. PP&L has reversed its previous plan to equip Montour with flue gas scrubbers, eliminating capital outlays estimated at \$346 million. PP&L is a joint owner in the Conemaugh station, operated by GPU Energy Corp., and the recent scrubbing of Conemaugh provides excess emission allowances that defer the immediate need for new pollution control facilities.

Nuclear Operations

PP&L has about \$3.3 billion invested in the Susquehanna nuclear station, and the two-unit plant accounts for about 46% of net plant investment. As competition is introduced in Pennsylvania, PP&L intends to reduce its embedded nuclear cost from the current \$1,600 per kw to \$750 per kw, and the overall net plant investment needs to be depreciated to about \$1.55 billion. Management is expected to address the potential stranded cost in the April 1997 filing with the PUC.

The two General Electric Co. boiling water reactors have operated well, with combined lifetime capacity factors of 74%. The latest Systematic Assessment of Licensee Performance (SALP) report from the NRC was exceptional, as the company achieved the best possible "1" score in all categories. The NRC observed a superior level of performance and upgraded its assessment of plant operations from the prior report.

Robert G. Byram is PP&L's senior nuclear executive and is dedicated to maintaining the strong performance and regulatory posture. PP&L plans to sustain the nuclear operations well into the next century and will commit about \$180 million to upgrade the units over the next five years. Currently, unit 1 is undergoing refueling and should oper-

ate for 18 months before the next refueling in early 1998. Unit 2 will transition to a 24-month refueling cycle starting in April 1997. With longer fuel cycles, PP&L expects improved planning for maintenance, thereby shortening outages and reducing costs.

Finance

PP&L's financial condition is weak for Fitch's 'A' rating category, and, despite the expectation that cash flow will allow significant future debt reduction, improvement in PP&L's financial condition will not outpace similar financial strengthening evident at other highly rated utilities. This circumstance relates to the opportunity other utilities had to begin debt reduction while PP&L did not file to raise base rates for approximately 10 years and the company was burdened by construction spending.

For the first six months of 1996, PP&L's operating income rose to \$295 million from \$266 million in the prior year's first six months, and the company began to reverse the trend of adding to outstanding debt. For the six-month period, internally generated cash met 135% of construction expenditures, and PP&L paid down total debt by \$50 million. Revenue and cash flow were enhanced by normally cold winter weather, the 1995 rate increase, and a one-year energy contract with Public Service Electric and Gas Co.

Management's strategy to offset earnings lost as long-term contracts are replaced with lower yielding wholesale arrangements includes cutting operations and maintenance expense from a base of \$700 million to \$638 million by 2000. Several years ago PP&L absorbed the costs of extensive early retirement and voluntary separation programs, and future savings will come from management of the work process.

From 1996-2000, PP&L is expected to increase the equity component in the capital structure, and bondholder protection will benefit from improved interest coverage ratios. By 2000, a 51% common ratio is expected, up from the current 43% level. PP&L projects a low-payout dividend policy, and common equity will be built through retaining earnings, not from parent equity infusion. Overall, the company anticipates that retained earnings will increase common equity from \$2.6 billion to \$3.2 billion by 2000. With a program to reduce debt by \$700 million, PP&L expects pretax interest coverage to move up from 3.6 times (x) in 1995 to a range of 4.0x-4.5x.

In 1995, investing activities totaled \$403 million, well below the \$500 million typically spent in the past several years. Because of the completion of various programs and the decision to not install a scrubber at the Montour plant, capital spending will continue to decline, and outlays below \$250 million annually are expected. Should actual outlays fall below \$200 million, cumulative five-year debt reduction could exceed the \$700 million now projected.

Short-Term Borrowing

During the first six months of 1996, the company's average usage of short-term debt and commercial paper has been moderate, at approximately \$60 million. PP&L has a \$250 million revolving credit agreement that extends to September 1999, providing commercial paper backup liquidity. In addition, PP&L has \$45 million in confirmed credit lines that expire in May 1997. There are no direct borrowings under these bank facilities, and the peak short-term exposure this year has been \$144 million.

Management

PP&L's management team has become significantly more outspoken in the course of the last 12 months. Prior to the unsolicited takeover effort by PECO Energy, PP&L was involved in restructuring the company to incorporate its mobile work force concept, cutting costs by downsizing from 8,300 to 6,500, disposing of coal mine operations, solidifying nuclear operations, and preparing a major rate petition with the PUC. The PECO Energy attempt caused PP&L to consider its options and reach out for the support of individual shareholders, customers, and community leaders. From this crisis, management became more confident about the company's strengths, and PP&L is now a

leader in the effort to restructure the electric business in Pennsylvania and the U.S.

Starting in January 1996, management announced its customer choice view; since then, the company's strategy is to use every opportunity to stress the advantages of competition for the state's economy, market pricing, and company operations. PP&L's comparative advantage in a competitive market is its significant low-cost baseload generating capability, and, by improving market access, management can enhance profitability. The alternative is to restrict capacity to the PJM, where spot sales yield only 2.5 cents per kwh. Management's goal is to compete with new generation, where the long-term incremental cost of generation is below 4.0 cents per kwh.

In the retail market, PP&L has announced a very comprehensive retail wheeling pilot program it intends to introduce in mid-1997, and the company is working with state legislators as they shape assembly bills to restructure the industry. Additionally, management remains committed to regional economic development efforts to attract industry to the area.

PP&L's management intends to improve the company's financial profile and desires the company to be 'A' rated by all agencies. Management recommends a moderate dividend payout to the parent to retain cash for utility debt reduction. The parent's plan for nonregulated investments includes a mix of businesses that combine current profitability in some segments along with energy development projects that require cash to achieve future profit. To date, there is no indication that management expects to harvest PP&L for the betterment of holding company ventures.

Management will be submitting its specific competitive transition plan in April 1997 to the PUC. Two important elements of the plan are the challenge to significantly increase the depreciation of Susquehanna and creating incentives to keep cost savings. This is important, as Susquehanna's regulatory depreciation expense drops sharply in 1999 and rates are now scheduled to drop by \$90 million.

Finally, the top scores assigned by the NRC during the 1995 SALP review of Susquehanna, coupled with the continued good operations of the two units, indicates management's competency in this critical area. PP&L management should be able to make the switch to longer fuel cycles at Susquehanna, and this will contribute to profit.

Income Statement Summary

(\$ Mil.)

	Six Mos. Ended 6/30/96	Years Ended Dec. 31				
		1995	1994	1993	1992	1991
Operating Revenue	1,458	2,752	2,725	2,727	2,744	2,740
Depreciation	181	302	289	271	258	246
Amortized Depreciation	N.A.	47	26	14	3	(7)
Income Tax	142	262	218	235	228	217
Operating Income (a)	295	574	501	563	573	582
Other Income/(Deductions) (b)	6	4	(30)	18	19	11
Income Before Interest	301	578	470	581	592	594
Gross Interest (c)	111	233	234	240	254	254
Preferred Dividends	14	28	28	34	40	45
Income for Common	180	324	244	348	347	348
Common Dividends	134	263	256	251	242	232
Balance Sheet Summary						
Net Plant	7,114	7,178	7,194	7,145	7,019	6,929
Total Assets	9,360	9,424	9,372	9,454	8,192	7,934
Notes	59	89	74	202	159	147
Current Portion	79	111	74	123	93	87
Long-Term Debt	2,831	2,829	2,941	2,618	2,621	2,576
Lease Adjustment	0	0	0	0	0	0
Total Debt	2,969	3,029	3,089	2,943	2,873	2,810
Preferred Equity	466	466	466	506	549	596
Common Equity	2,578	2,528	2,454	2,426	2,367	2,298
Capitalization	6,013	6,023	6,009	5,875	5,789	5,704
Funds Flow						
Capital Expenditures	155	403	505	488	422	374
Cash from Operations (d)	343	668	682	736	770	768
Ratios						
Pretax Interest Coverage (x)	4.0	3.6	2.9	3.4	3.2	3.2
Internal Generation (%) (e)	135	100	84	99	125	143
Cash from Operations/Total Debt (%) (f)	23	22	22	25	27	27
Common Stock (%)	43	42	41	41	41	40
Preferred Stock (%)	8	8	8	9	9	10
Debt (%)	49	50	51	50	50	49
Return on Average Common Equity (%)	14	13	10	15	15	30

(a) 1994 operating income includes \$76 million pretax expense for early retirement program (after-tax \$43 million); 1995 operating income includes a \$38 million after-tax credit to expense due to the Public Utility Commission's decision for customer recovery. (b) Other deductions include a \$74 million pretax expense writedown of coal reserves in the 12 months ended 1994 (after-tax \$40 million). (c) Gross interest is not net of AFUDC-borrowed funds. (d) Cash from operations is after preferred dividends, but before common dividends. (e) Cash flow for internal generation of capital expenditures is net of all dividends. (f) Internal generation is cash from operations net of all dividends. N.A. - Not available. Source: Company data.

**Pennsylvania Power & Light Company
Response to Interrogatories
of the Environmentalists, Set I
Dated April 22, 1997**

Docket No. R-00973954

Q.9. First identify, and then provide, each report of an **internal audit** of the Company's transmission and/or distribution system, and/or the units of the Company responsible therefor: since the filing of the Company's last general base rate case.

A.9. Three internal audits of PP&L's transmission and distribution system were performed since the Company's most recent base rate case. The final report of each of these audits is provided as:

Attachment 1 - Audit of Rubber Goods Testing Program

Attachment 2 - Review of Extension of Service Policies

Attachment 3 - Follow-up Review to CATV and Telephone Attachment
Audit Recommendations.

ATTACHMENT 1

PP&L RESOURCES, INC.
AUDIT OF RUBBER GOODS TESTING PROGRAM

OCTOBER 25, 1995

JOB #739810-95

DATE ISSUED: 10/27/95

October 25, 1995

Mr. R. M. Geneczko:

EXECUTIVE SUMMARY

Corporate Audit Services has completed an audit of the Rubber Goods Testing Program (Testing Program). The objectives of this audit were to: (i) monitor the effectiveness and efficiency of the Testing Program as administered by System Shop personnel; (ii) ensure that the Testing Program is in adherence with Occupational Safety and Health Administration (OSHA) regulations; (iii) ensure that safe and reliable rubber goods, necessary to perform the job, were delivered and made available to the appropriate Company employees; and (iv) determine if System Shop has implemented the recommendations of the Rubber Gloves and Sleeves Safety Rules Task Force.

Within the scope of our objectives we reviewed several areas of concern including:

- the impact that the recent retirement of a key employee involved in the follow up and analysis of test failures by the Safety Department may have had on this process;
- the impact that the corporate restructuring and consolidation had on the effective retrieval and redistribution of the various rubber goods after testing and the recording of the test results in the Rubber Goods System; and
- claims of excess unused rubber goods stored at various Company work locations.

During the course of our audit, we found that System Shop personnel conducted the Testing Program effectively and efficiently; well within OSHA guidelines; and with due diligence and a clear understanding of the potential risks to Company personnel who use rubber goods. Also, System Shop management has implemented the recommendations of the Rubber Gloves and Sleeves Safety Rules Task Force and appropriately addressed or are in the process of addressing the concerns outlined above. Furthermore, they have taken the initiative to develop the marketability of their services to external sources.

BACKGROUND

The System Shop is responsible for issuing and testing the rubber goods used by various Company personnel. In July 1994, OSHA began to regulate the testing of rubber goods used by personnel working on energized lines. OSHA adopted the standards developed by the American Society for Testing and Materials (ASTM) and the Institute of Electrical and Electronics Engineers (IEEE). The regulation by OSHA caused little additional work for PP&L as the Company was already testing its rubber goods well within the guidelines of ASTM and IEEE.

TEST FAILURES

The Safety Department has historically followed up on test failures and performed analyses of the types and reasons for the failures. This follow up and analysis has afforded the Company the opportunity to determine if poor work practices were being employed or if there may be a defect in the manufacturing process. The December 1994 retirement of the employee who performed this function raised concerns within System Shop management that no one from the Safety Department had been reassigned this function. The follow up and analysis of test failures was crucial to the safety of the users..

By the time we approached Safety Department management with this concern they were already addressing it in cooperation with System Shop management. Safety Department management has since reassigned this responsibility to one of its employees who is working closely with System Shop management and appropriate field personnel in the distribution of failure reports and analyzing the causes for the failures.

COMPANY RESTRUCTURING

The recent Company restructuring had the effect of eliminating departments and moving employees to different work locations. This resulted in concerns for the System Shop in keeping track of where employees were located and the meaningfulness of the previously assigned rubber goods identification numbers. System Shop personnel developed an identification numbering system representing departments and work locations and which aided in the test scheduling, recording of test results, delivery to/from the System Shop, distribution of rubber goods overdue reports, and the analysis of test failures.

In recent months System Shop personnel have taken the following steps:

- developed a new identification numbering scheme that coincides with the Company's new structure;
- nearly completed the marking of the various rubber goods with the new identification numbers;
- are updating the Rubber Goods Computer System with the new identification numbers; and
- are installing transponders in gloves and sleeves that will greatly enhance the efficiency and accuracy of the recording of the test results.

EXCESS UNUSED RUBBER GOODS

Some members of the Rubber Gloves and Sleeves Safety Rules Task Force questioned whether there were unused rubber goods being stored at various Company locations that were being sent to the System Shop for testing. This, they felt, resulted in unnecessary work for the System Shop personnel performing rubber goods testing.

We visited a sampling of Company locations and did find rubber goods that were not assigned directly to any crews. The majority of these rubber goods were line hoses, blankets and overshoes. The quantities at each location, however, were not excessive and were on hand for emergencies and tree trimming type work. Material Handlers indicated that without the extra rubber goods on hand they would need to wait

for a delivery from the System Shop and, in the event of a storm emergency, crews would not be able to respond quickly to safely restore service to our customers.

MARKET AND COST ANALYSES

The Company is evaluating and pursuing various allied business opportunities through a subsidiary. One potential business opportunity is the testing of rubber goods for other utilities. With the recently enacted OSHA regulations on rubber goods testing many other utilities had to scramble to find a test facility in order to comply with the new regulations. PP&L was already testing rubber and generally in compliance. With the move to the SFC, the System Shop acquired new rubber goods test equipment and is now considered, within the utility industry, to have a state of the art test facility.

System Shop management is working with Spectrum Energy Services (Spectrum) management to determine the marketability of the rubber goods testing service. In conjunction with the market analysis, Spectrum requested information from the System Shop in order to develop a cost analysis. In addition, System Shop management applied to the American Association for Lab Accreditation in order to obtain national certification of its rubber goods test facility. This certification should greatly enhance the marketability for this service.

REVIEW OF REPORT

On October 24, 1995, A. G. Richenbacher and J. L. Hinkle reviewed and concurred with the contents of this report.

There is no action required on your part as a result of this audit. We appreciate the assistance and cooperation of the Electrical Systems Department personnel, especially those in the System Shop.

John A. Bolash

John A. Bolash
Senior Business Analyst

James E. Abel

James E. Abel
Manager - Corporate Audit Services

Corporate Audit Services

cc: Mr. F. A. Long
Mr. J. P. Kierzkowski
Mr. J. J. McCabe
Mr. M. Pernia
Mr. A. G. Richenbacher

ATTACHMENT 2

PENNSYLVANIA POWER & LIGHT COMPANY

REVIEW OF EXTENSION OF SERVICE POLICIES

Audit Number 739813-96

To: R. M. Geneczko

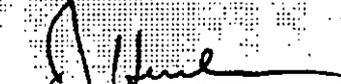
**CC: F. A. Long
R. F. Suhocki
J. J. McCabe
J. F. Sipics**

Sr. Audit Consultant:

Audit Team Leader:

Reviewed By:

Date Issued:



M.P. Mormel

Martin J. Urban

November 7, 1996

November 7, 1996

Based on your request, we reviewed and tested the application and effectiveness of PP&L's rules for the extension and supply of electric service (revenue work). PP&L budgeted \$57.7 million for revenue work in 1996.

Our objectives were to determine if:

- personnel complied with PP&L's tariff rules;
- PP&L's tariff rules were cost effective, (especially in light of a competitive environment);
- personnel complied with Electrical Systems "Quick Hit" initiatives;
- performance indicators were reliable; and
- PP&L recovered its investment from underground residential developments in a reasonable period of time.

Electrical Systems personnel directly participated in this review. Their technical direction and practical field experience were essential to this assessment.

EXECUTIVE SUMMARY

PP&L has several opportunities to reduce costs by strengthening its business practices for revenue work. PP&L's tariff rules for single phase extensions, while very generous to customers, are not cost effective. Also, PP&L's policies for three phase extensions and service changes, were loosely applied. In addition, PP&L needs to establish policies for installing new or upgraded services which include specific business objectives (i.e. return of investment).

PP&L also incurred excess investment by installing oversized equipment and by performing extra work to enhance the reliability of existing lines. There is no practical way to compute the actual dollar value of the excess investment. It would require individually analyzing workorders. Marketing, design engineers and technicians need better guidelines for estimating load and specifying cost effective equipment.

In addition, PP&L needs more effective performance information for revenue work. The long-standing "cost per connect ratio" has very limited usefulness primarily because it includes unrelated components. Also, performance measures that evaluate cost and revenue would be more effective than indicators that only measure cost.

BACKGROUND

In the traditional regulated (noncompetitive) utility market, an "averaging effect" allowed long (unprofitable) extensions to be offset by shorter (low cost) extensions in other areas. This provided utilities with flexibility in establishing rules for

line extensions. Electrical Systems personnel noted that PP&L's tariff rules for line extensions were generous compared to other Pennsylvania utilities. In a competitive market, the averaging effect described above may diminish because customers could select different generation suppliers. For customers that choose different suppliers PP&L would, generally speaking, receive only the transmission and distribution portion of each revenue dollar.

PP&L often included repairs or improvements to existing facilities when designing new line extensions. Electrical Systems recognized this and developed a program in mid 1995 called "Quick Hit" initiatives to reduce costs. The extra work was believed to be worthwhile, however, the new philosophy was to perform only the work absolutely necessary to serve the new customers.

Our scope covered revenue work orders dated July 1995 through March 1996 and costing more than \$10,000. We selected larger dollar cost jobs because they were more likely to require line or service extension guarantees or customer cash payments. We reviewed sample jobs for compliance with tariff rules. We also determined the time required for PP&L to recover its investment and we tested for excess investment due to extra work or overbuilt facilities. We also tested a separate sample of revenue workorders for compliance with the "Quick Hit" initiatives. In addition, we analyzed PP&L's investment recovery for underground residential developments.

LINE AND SERVICE EXTENSIONS

PP&L's line extension rules allowed 2,500 feet for single phase line extensions and 500 feet for service extensions at no cost to customers. Line extension guarantees or cash contributions were required for extensions above those limits. Line extension guarantees are designed to ensure that PP&L recovers its investment within five years. PP&L built 29 single phase line extensions during our eight month test period which did not require guarantees. However, it will take an average 26 years to recover the investment which exceeded \$424,000¹. (see Exhibit I, page 5). Furthermore, it would take longer if generation revenue was excluded from the analysis as discussed below.

PP&L policy required extension guarantees for all three phase extensions. PP&L personnel frequently waived this requirement and our tests showed that generally three phase customers generated sufficient revenue. However, during our eight month test period \$160,641 of PP&L's investment was placed at risk unnecessarily (see Exhibit I, page 6). Seven guarantees for three phase extensions were waived but customers were not generating sufficient revenue or it was questionable that they would. In one case personnel obtained a guarantee but did not process it for follow up. Also, a more effective policy would target only the high risk customers (i.e. those not likely to meet guarantee requirements) for extension guarantees.

PP&L credits customers for the full revenue from electric service bills in its line extension guarantee agreements. However, the amount guaranteed includes only line and service costs. PP&L's line extension guarantees would be more cost effective if they excluded that portion of revenue which is attributable to generation (particularly in a competitive market where customers may select a different generation company).

¹ Net of transformer and meter costs which are capitalized upon purchase.

Regardless of competition, PP&L could significantly reduce costs with less generous line and service extension rules.

CHANGES TO SERVICES

When customers plan to increase load, PP&L's policy is to increase the capacity of its equipment at the same location at no cost to the customer. PP&L policy also required that customers pay the excess costs for any additional or relocated facilities.

PP&L did not charge customers for the excess costs for several service changes where PP&L installed additional equipment or relocated facilities during our eight month test period. Furthermore, the anticipated load growth never developed which resulted in \$207,179² in unprofitable investments for PP&L. (See Exhibit I, page 8).

EXCESS INVESTMENT IN SERVICE FACILITIES

PP&L works with customers to develop load projections for use in designing line and service equipment for new or upgraded installations. However, comparisons to actual loads for jobs in our test sample showed that frequently the load projections were overstated (see Exhibit II). As a result, PP&L overbuilt service facilities including lines, transformers and metering equipment. Further study of transformer loading statistics confirmed this condition exists systemwide (see Exhibits III). There was no practical method to estimate the dollar value of the excess investment since transformers and meters are capitalized upon purchase. However, elimination of the excess investment represents an excellent opportunity to reduce costs.

Also, Distribution Engineering Instruction (9-05-16), PP&L's technical guideline for sizing equipment, was last updated September 30, 1985. In today's cost competitive environment, these guidelines may no longer be effective.

SERVICE EXTENSION COST ESTIMATES

Electrical Systems personnel use cost per foot estimates from the Distribution Department Procedures Manual to calculate "excess costs" billed to customers for service extensions. However, the cost estimates are outdated. For example, the manual states \$3.61 per foot for single phase extensions while the current figure actually can range up to \$6 or \$7 per foot depending on equipment.

QUICK HIT INITIATIVES

We reviewed workorders designed after August 1995 for compliance with Electrical Systems "Quick Hit" guidelines (See Exhibit IV). Our review disclosed excellent compliance systemwide; only a few exceptions were disclosed.

² Net of transformer and meter costs which are capitalized upon purchase.

COST PER CONNECT RATIO

PP&L has tracked the cost per connect ratio as a performance indicator for revenue work. However, the ratio is calculated using unrelated components. The costs for several types of common work are included in the ratio, however, the units of work are not included. This work includes: upgrading services, connecting services at inactive locations and disconnecting services. The result is an inaccurate cost per connect ratio.

The ratio is particularly distorted whenever business cycles shift. An improving economy would spawn service changes for load growth and to reconnect previously inactive locations. Although PP&L would benefit from this the ratio would suggest otherwise, showing an increasing cost per connect. Also, PP&L typically installs residential development systems in one reporting period and the homes sell over succeeding periods. Any speed up or slow down in this sector distorts the ratio. The ratio would also be adversely affected by a growth trend in rural areas of the service territory which typically have longer extensions.

Circumstances such as those described severely limit the usefulness of this ratio as an indicator of performance.

UNDERGROUND RESIDENTIAL DEVELOPMENTS

We analyzed the cost and revenue recovery for underground residential developments. Our analysis included actual and hypothetical scenarios using different sizes of electric developments and gas and electric developments. The analysis showed that in all scenarios PP&L recovers its investment within five years. (See Exhibit V). However, the results would be different if the analysis excluded generation revenue as previously discussed.

Also, we noted that when PP&L must share a trench with gas lines extra costs result because PP&L must install conduit. PP&L did not have a policy to recover the extra cost from developers.

Management issued a policy effective October 1, 1996 to collect \$275 per lot from developers when PP&L must share trenches with gas service.

RECOMMENDATIONS

PP&L needs to:

- Evaluate all tariff rules for extension of service and free length allowances and strongly consider using net revenue (net of generation) as the basis for investment recovery. (1)
- Modify the three phase line extension policy to allow personnel to waive extension guarantees except for high risk customers and include guidelines to evaluate new customers. Also, develop a process to ensure compliance with the policy. (2)
- Effectively communicate the tariff policies for service changes to personnel who handle these jobs and develop a process to ensure compliance. (3)

- Develop and implement effective performance indicators for revenue work which include comparisons of cost to the net revenue received (net of generation). (4)
- Provide personnel with guidance in estimating load and sizing equipment for new installations. In addition to the traditional engineering approach, comparisons using information from PP&L databases such as the Customer Information System may be helpful. Also, review Distribution Engineering Instructions for relevance with the current business environment. (5)
- Evaluate all customer charges especially the cost per foot estimates which personnel use to calculate excess costs for line or service extensions billed to customers. (6)

ACKNOWLEDGMENTS

We reviewed this report with: R. M. Geneczko on October 10, 1996, R. F. Suhocki on October 15, 1996, and with Power Systems Support personnel on November 4, 1996.

We wish to thank J. J. Sikora, Regional Manager who was Electrical System's key contact for the team and the following Electrical Systems personnel who also participated on the audit team: P. Dougherty, Area Engineering Supervisor; K. N. Hartman, Manager-Distribution Engineering; D. W. Savidge, Regional Analyst; and W. M. Schuster, Quality Assurance Engineer.

We would appreciate a response to this report by December 31, 1996.

Corporate Audit Services

**PENNSYLVANIA POWER LIGHT COMPANY
CORPORATE AUDIT SERVICES AUDIT #813-96
RESULTS FROM REVIEW OF REVENUE WORKORDERS**

EXHIBIT I

<u>DESCRIPTION</u>	<u>PP&L'S COST</u>	<u>CONNECT DATE</u>	<u>REVENUE (A.) TO 6/96</u>	<u>EXTENSION GUARANTEE</u>	<u>APPROX. (A.) PAYBACK IN YEARS</u>
1.) NEW-1PH UG-STRIP MALL	\$11,235	Oct-95	\$400	No Guarantee Required by policy (N/R)	21
2.) NEW-1PH- UG- RESIDENTIAL- NO ELECTRIC HEAT	\$9,240	Mar-96	\$335	N/R	9
3.) NEW-1PH-OH-RESIDENTIAL- NO ELECTRIC HEAT	\$11,920	Feb-96	\$250	N/R	20
4.) NEW 1PH-RESIDENTIAL- OIL HEAT	\$15,625	not conn*	not conn*	N/R	18
		* Line work done, customer not ready			
5.) NEW 1PH RESIDENTIAL- OIL HEAT	\$11,535	Sep-95	\$398	N/R: Customer paid \$1,445 cash for excess service extension length, however, PP&L will not recover its investment for approx. 24 years	24
6.) NEW 1PH RESIDENTIAL-ELECT. HEAT/COOLING NOT INDICATED	\$14,125	Jun-95	\$609	N/R	23
7.) NEW 1PH RESIDENTIAL-ELECT. HEAT/COOLING NOT INDICATED	\$11,585	Feb-96	\$111	N/R	44

*** Examples of jobs that distort the Cost Per Connect Ratio

(A.) PP+L method (full revenue) was used. A more accurate method would eliminate generation revenue, extending payback periods.

PENNSYLVANIA POWER LIGHT COMPANY
CORPORATE AUDIT SERVICES AUDIT #813-96
RESULTS FROM REVIEW OF REVENUE WORKORDERS

EXHIBIT I

DESCRIPTION	PP&L'S COST	CONNECT DATE	REVENUE (A.) TO 6/96	EXTENSION GUARANTEE	APPROX. (A.) PAYBACK IN YEARS
8.) NEW 1PH RESIDENTIAL-ELECT. HEAT/COOLING NOT INDICATED	\$11,985	Apr-96	\$44	N/R	10
9.) NEW 1PH RESIDENTIAL OIL HEAT	\$14,440	Jun-96	recent conn.	N/R	12
10.) NEW 1PH RESIDENTIAL GAS HEAT&WATER	\$11,545	Nov-95	\$100	N/R	77
11.) NEW 1PH RESIDENTIAL	\$22,485	Nov-95	\$2,643	N/R	9
12.) NEW 1PH EXTENSION - BALL FIELD - SPECULATIVE	\$13,925	May-95	\$1,280	Speculative Extension - revenue guarantee was required but was not obtained	12
13.) NEW 1PH RESIDENTIAL - ELECT. HEAT NOT INDICATED	\$15,445	May-95	\$201	Entire extension was "service extension" 1300' of approx 1800' should have been customer's expense.	77
14.) NEW 1PH RESIDENTIAL - ELECT. HEAT NOT INDICATED	\$10,615	Feb-96	\$29	Entire extension was "service extension" 1000' of approx 1500' should have been customer's expense.	130
15.) NEW 1PH RESIDENTIAL - ELECT. HEAT NOT INDICATED	\$10,740	Aug-95	\$437	Customer paid \$1,274 for excess cost of UG	18

*** Examples of jobs that distort the Cost Per Connect Ratio

(A.) PP+L method (full revenue) was used. A more accurate method would eliminate generation revenue, extending payback periods.

PENNSYLVANIA POWER LIGHT COMPANY
CORPORATE AUDIT SERVICES AUDIT #813-96
RESULTS FROM REVIEW OF REVENUE WORKORDERS

EXHIBIT I

DESCRIPTION	PP&L'S COST	CONNECT DATE	REVENUE (A.) TO 6/96	EXTENSION GUARANTEE	APPROX. (A.) PAYBACK IN YEARS
16.) NEW 1PH RESIDENTIAL - ELECT. HEAT	\$18,355	Dec-95	\$1,005	1500' of 2000' should have been paid for by customer as service extension	15
17.) NEW 1PH RESD - CABIN - NO ELECT HEAT	\$18,145	Sep-95	\$49	PP&L built this for customer in return for right-of-way needed for new service to an existing industrial customer. Could have been billed as excess right of way cost.	no payback likely
18.) NEW 1PH RESD.-NO ELECT HEAT	\$13,030	Jul-95	\$420	N/R	31
19.) NEW 1PH RESD-HEAT PMP	\$16,375	Sep-95	\$662	Customer paid \$500 for excess UG costs they should have paid much more for service extension over 500 ft.	14
20.) NEW 1PH RESD. - OIL HEAT	\$12,540	not conn.	N/A	N/R	10
21.) NEW 1PH RESD. OH SMALL SUBDIVISION	\$17,015	May-95 Jul-95	\$489 \$421	N/R	15

*** Examples of jobs that distort the Cost Per Connect Ratio

(A.) PP+L method (full revenue) was used. A more accurate method would eliminate generation revenue, extending payback periods.

**PENNSYLVANIA POWER LIGHT COMPANY
CORPORATE AUDIT SERVICES AUDIT #813-96
RESULTS FROM REVIEW OF REVENUE WORKORDERS**

EXHIBIT I

<u>DESCRIPTION</u>	<u>PP&L'S COST</u>	<u>CONNECT DATE</u>	<u>REVENUE (A.) TO 6/96</u>	<u>EXTENSION GUARANTEE</u>	<u>APPROX. (A.) PAYBACK IN YEARS</u>
22.) NEW 1PH RESD. - HEAT PUMP	\$26,500	Jun-95	\$1,427	N/R	18
23.) NEW 1PH RESD. - HEAT PUMP	\$17,800	Feb-95	\$2,282	N/R Cost of job was increased by doing "betterment" work.	10
24.) NEW 1PH RESD. - HEAT PUMP	\$16,495	Jul-95	\$1,105	N/R	15
25.) NEW 1PH RESD. - NO ELECT HEAT	\$24,175	Sep-95	\$575	A revenue guarantee for the small portion of line extension exceeding 2500 ft. would not have helped much.	28
26.) NEW 1PH RESD. & COMMERCIAL -NO ELECT HEAT	\$11,250	Jan-96	\$650	N/R	7
27.) NEW 1PH RESD. NO ELECT HEAT	\$14,700	Sep-95	\$500	N/R	22
28.) NEW 1PH RESD. NO ELECT HEAT	\$11,740	May-95	\$323	N/R	39

*** Examples of jobs that distort the Cost Per Connect Ratio

(A.) PP+L method (full revenue) was used. A more accurate method would eliminate generation revenue, extending payback periods.

**PENNSYLVANIA POWER LIGHT COMPANY
CORPORATE AUDIT SERVICES AUDIT #813-96
RESULTS FROM REVIEW OF REVENUE WORKORDERS**

EXHIBIT I

DESCRIPTION	PP&L'S COST	CONNECT DATE	REVENUE (A.) TO 6/96	EXTENSION GUARANTEE	APPROX. (A.) PAYBACK IN YEARS
29.) NEW 1PH RESD. NO ELECT HEAT	\$9,335	May-95	\$679	N/R	15
TOTAL NEW SINGLE PHASE:	<u>\$424,000</u>				
30.) NEW-3PH OH- MUFLER SHOP	\$21,865	Sep-95	\$3,915	Guarantee required but not obtained: PP&L'S investment at risk unless/until customer stays in business five years.	5
31.) NEW 3PH UG- PUMP STATION	\$9,230	Aug-95	\$1,243	Guarantee required but not obtained: PP&L's investment at risk unless/until customer stays in business six years.	6
32.) NEW 3PH-UG-GAS HEAT	\$55,515	May-96	recent conn.	Guarantee required but not obtained PP&L's investment is at risk	recent conn.
33.) NEW 3PH-UG-GAS HEAT	\$17,880	Apr-96	recent conn.	Guarantee required but not obtained PP&L's investment is at risk	recent conn.
34.) NEW 3PH-OH-ASH BACKFILL	\$11,896	not finished	N/A	Customer should have been charged \$1,979 for 300 ft. excess service extension. After we notified Marketing they billed customer. Also, guarantee required but not obtained.	N/A

*** Examples of jobs that distort the Cost Per Connect Ratio

(A.) PP+L method (full revenue) was used. A more accurate method would eliminate generation revenue, extending payback periods.

**PENNSYLVANIA POWER LIGHT COMPANY
CORPORATE AUDIT SERVICES AUDIT #813-96
RESULTS FROM REVIEW OF REVENUE WORKORDERS**

EXHIBIT I

<u>DESCRIPTION</u>	<u>PP&L'S COST</u>	<u>CONNECT DATE</u>	<u>REVENUE (A.) TO 6/96</u>	<u>EXTENSION GUARANTEE</u>	<u>APPROX. (A.) PAYBACK IN YEARS</u>
35.) NEW 3PH- COAL CO.- SPECULATIVE EXTENSION	\$19,507	Mar-96	\$7,796	Revenue guarantee and deposit received but not recorded on CIS System for followup.	N/A
36.) NEW 3PH COMMERCIAL	\$12,518	Aug-95	\$713	Guarantee was required for 3PH extension however, Marketing did not obtain one.	13
37.) NEW 3PH UG from OH, GAS HEAT, 120/208 VOLTS	\$12,430	Feb-95	\$1,569 12 month rev.	Excess costs for UG service and for nonstandard voltage should have been billed. Also, extension guarantee was required. PP&L's investment is at risk for eight years.	8
TOTAL NEW 3PHASE:	<u>\$160,641</u>				
38.) CHANGE 1PH TO 3PH-OH WATER CO. ***	\$19,215	Jun-95	\$459	Customer signed revenue guarantee but PP&L did not record it for follow up. This was a poor investment for PP&L (even with revenue guarantee).	13
39.) CHANGE/RELOCATE OH to UG 3PH SERVICE ***	\$17,775	May-95	minimal increase	Job was done at no cost to customer because load growth was expected, however, little materialized. This was a poor investment for PP&L.	no payback likely

*** Examples of jobs that distort the Cost Per Connect Ratio

(A.) PP+L method (full revenue) was used. A more accurate method would eliminate generation revenue, extending payback periods.

**PENNSYLVANIA POWER LIGHT COMPANY
CORPORATE AUDIT SERVICES AUDIT #813-96
RESULTS FROM REVIEW OF REVENUE WORKORDERS**

EXHIBIT I

<u>DESCRIPTION</u>	<u>PP&L'S COST</u>	<u>CONNECT DATE</u>	<u>REVENUE (A.) TO 6/96</u>	<u>EXTENSION GUARANTEE</u>	<u>APPROX. (A.) PAYBACK IN YEARS</u>
40.) CHANGE/RELOCATE 1PH OH to 3PH UG ***	\$18,175	not finished	N/A	Could have been treated as relocation at customer expense. If substantial load growth does not materialize PP&L made a poor investment. Customer currently uses approx. \$235/month at this location.	no payback likely
41.) REPLACE/RELOCATE 1PH WITH 2PH OH (3PH RULES APPLY) ***	\$26,380	Aug-95	N/A	Customer should have paid full cost as a relocation. PP&L didn't expect much (if any) load growth. Two 15KVA transformers were installed to replace a 25KVA.	no payback likely
42.) CHANGE/RELOCATE OH to UG for load growth ***	\$20,340	Jun-96	recent conn.	Customer should have paid for most of the cost which was relocation work.	no payback likely
43.) RESD 1PH CHANGE AND RELOCATION	\$18,445	not conn.	N/A	"Betterment" work done with revenue work Line work finished 7/95 but new service still not connected	no payback likely
44.) RESID. CHANGE/RELOCATION	\$18,495	Feb-96	\$543	Customer should have paid most of the cost since most of the work was relocation.	11

*** Examples of jobs that distort the Cost Per Connect Ratio

(A.) PP+L method (full revenue) was used. A more accurate method would eliminate generation revenue, extending payback periods.

**PENNSYLVANIA POWER LIGHT COMPANY
CORPORATE AUDIT SERVICES AUDIT #813-96
RESULTS FROM REVIEW OF REVENUE WORKORDERS**

EXHIBIT I

DESCRIPTION	PP&L'S COST	CONNECT DATE	REVENUE (A.) TO 6/96	EXTENSION GUARANTEE	APPROX. (A.) PAYBACK IN YEARS
45.) CHANGE 1PH TO 3PH ***	\$51,404	Aug-95	no incremental revenue	Extension guarantee for \$3,828 annual revenue however, PP&L still will not recover its investment since usage did not increase after new service was installed. Therefore PP&L received no incremental revenue. Also, the basic work required to provide 3PH was \$19K, "betterment work" was included for a total estimated cost of \$34K. However, the job was overrun significantly.	no payback likely
46.) CHANGE 3PH UG / RELOCATE POLE FOR EXPECTED LOAD GROWTH ***	\$16,970	Jan-96	recent conn.	Load growth may not materialize. PP&L investment at risk.	N/A
TOTAL CHANGES:	<u>\$207,179</u>				
47.) RELOCATION FOR PENNDOT CHARGED AS REVENUE WORK***	\$28,805	Jan-95 Nov-95	N/A	This job should not have been charged to revenue work. It was a relocation for Penndot.	N/A
48.) SECTIONALIZING DEVICE ***	\$29,825	N/A	N/A	Should not have been charged to revenue accounting.	N/A
GRAND TOTAL <u>\$850,450</u>					

*** Examples of jobs that distort the Cost Per Connect Ratio

(sample statistics on next page)

(A.) PP+L method (full revenue) was used. A more accurate method would eliminate generation revenue, extending payback periods.

**PENNSYLVANIA POWER LIGHT COMPANY
CORPORATE AUDIT SERVICES AUDIT #813-96
RESULTS FROM REVIEW OF REVENUE WORKORDERS**

EXHIBIT I

<u>DESCRIPTION</u>	<u>PP&L'S COST</u>	<u>CONNECT DATE</u>	<u>REVENUE (A.) TO 6/96</u>	<u>EXTENSION GUARANTEE</u>	<u>APPROX. (A.) PAYBACK IN YEARS</u>
SAMPLE STATISTICS					
<u>NUMBER</u>	<u>\$ VALUE</u>				
885	\$30,251,151		POPULATION: Revenue workorders over \$10,000 from July 1995 through March 1996		
128	\$2,744,079		SAMPLE SIZE		
15%	9%		SAMPLE PERCENTAGES		
48	\$850,450		JOB FROM SAMPLE THAT FAILED AUDIT TEST		
38%	31%		AS A PERCENTAGE OF SAMPLE		

*** Examples of jobs that distort the Cost Per Connect Ratio

(A.) PP+L method (full revenue) was used. A more accurate method would eliminate generation revenue, extending payback periods.

**PENNSYLVANIA POWER LIGHT COMPANY
CORPORATE AUDIT SERVICES AUDIT #813-96
UNDERLOADED TRANSFORMERS
FROM REVIEW OF REVENUE WORKORDERS**

EXHIBIT II

INSTALLED TRANS SIZE KVA	ESTIMATED LOAD	ACTUAL LOAD	EXCESS TRANSFORMER CAPACITY KVA	PERCENT
500	244	100	400	80%
500	291	273	227	45%
500	N/A	120	380	76%
1000	N/A	415	585	59%
750	643	441	309	41%
750	730	158	592	79%
150	110	51	99	66%
1000	645	561	439	44%
500	400	173	327	65%
1000	757	433	567	57%
2000	1725	1150	850	43%
1000	890	338	662	66%
300	200	28	272	91%
1500	1300	769	731	49%
750	650	78	672	90%
300	265	58	242	81%
300	260	143	157	52%
750	635	374	376	50%
300	190	85	215	72%
300	191	73	227	76%
2000	1666	261	1739	87%

PENNSYLVANIA POWER LIGHT COMPANY
CORPORATE AUDIT SERVICES AUDIT #813-96
UNDERLOADED TRANSFORMERS
FROM REVIEW OF REVENUE WORKORDERS

EXHIBIT II

INSTALLED TRANS SIZE KVA	ESTIMATED LOAD	ACTUAL LOAD	EXCESS TRANSFORMER CAPACITY	
			KVA	PERCENT
300	n/a	61	239	80%
200	n/a	110	90	45%
500	n/a	250	250	50%
1000	945	412	588	59%
500	411	217	283	57%
750	n/a	315	435	58%
300	214	68	232	77%
750	550	295	455	61%
500	472	110	390	78%
150	113	55	95	63%

SAMPLE STATISTICS:

50 SAMPLE SIZE
 31 NUMBER UNDERLOADED (listed above)
 62% PERCENT OF SAMPLE UNDERLOADED

PENNSYLVANIA POWER LIGHT CO.
 CORPORATE AUDIT SERVICES AUDIT #813-96
 TRANSFORMERS BY LOAD RANGE
 SYSTEMWIDE

EXHIBIT III

TRANSFORMER LOADING RATE	OVERHEAD		PAD MOUNTED		SUBMERSIBLE		TOTALS	% OF GRAND TOTAL
	POLY PHASE	SINGLE PHASE	POLY PHASE	SINGLE PHASE	POLY PHASE	SINGLE PHASE		
less than 40%	5474	59697	3247	17814	60	307	86599	25%
40% to 90%	11779	147940	309	22764	120	1243	184155	53%
90% to 120%	3250	44462	34	4179	56	255	52236	15%
120% to 150%	864	16970	8	1221	16	49	19128	5%
over 150%	296	6376	5	332	1	17	7027	2%
							GRAND TOTAL	349145

CONCLUSION:

The Shaded range is more cost effective than other load ranges.
 PP&L needs to increase the percentage of units in this range.

PP&L

attachment #1

Wilkes-Barre, PA
July 12, 1995

Mr. R. J. Anspach, Cocalico S. C.
Mr. T. L. Baumgardner, Pocono S. C.
Mr. J. M. Compierchio, Honesdale S. C.
Mr. R. J. Cook, Lancaster S. C.
Mr. T. L. Daise, Harrisburg S. C.
Mr. P. Dougherty, West Shore S. C.
Mr. J. D. Faisetty, Lehigh S. C.
Mr. D. E. Fritz, Buxmont S. C.

Mr. G. L. High, Bloomsburg S. C.
Mr. J. P. Iannotti, Schuylkill Office
Mr. R. M. Koslap, Susquehanna S. C.
Mr. J. L. Krushin, Hazleton S. C.
Mr. D. R. Lehman, Wilkes-Barre S. C.
Mr. B. E. Leonard, Bethlehem Crew S. C.
Mr. D. E. Schleicher, Scranton S. C.
Mr. G. E. Sellers, Sunbury S. C.

REDUCING THE COST OF PROVIDING ELECTRIC SERVICE

The cost of providing new electric service to our customers has escalated over the last ten (10) years from \$2,100 in 1986 to \$4,100 in 1994. If this trend continues, our ability to compete in a competitive environment becomes questionable.

I have challenged the Electrical Systems Department to reduce the cost of connecting a new customer by 20% of the 1994 value. This means the average cost of a new connect in 1995 can be no higher than \$3,250. This is a significant challenge.

A team was created to address this critical issue and develop recommendations. Team members are: Bruce Leonard, Ed Dolack, Steve Olinick, Ron Hollinger, Ron Kapo, Tom Gill, Jack Preston, and John Sikora (leader). Many of the opportunities to improve are strategic and will take time to evaluate and implement. The team will be meeting to develop and implement long term measures, as well as monitor the effectiveness of proposed "quick hit" cost savings ideas. This is where we need your help.

Attached is a list of proposed "quick hit" cost saving ideas that can be implemented now. Many of these items were originally issued in 1988 as a means of reducing the capital cost of distribution work and are still valid today. Please review the list and conduct a meeting with all technical personnel in your work groups to apprise them of the issue, critique the ideas and develop a buy-in. If an impact is to be made in 1995, the changes must begin immediately.

The "quick hit" items obviously will not allow us to achieve the full 20% reduction target. Input from the designers and you will be critical to achieving the target. Think of this endeavor as an ongoing initiative and provide ideas and suggestions to the "Revenue

Cost Reduction Team". You have the responsibility to make this endeavor work. The message you send to all designers will set the stage for success.

Thank you for your help. If we work as a team and each do our part, we will achieve the goal.



R. M. Geneczko

ESD
NE
JJS/RMG/sam

Attachment

cc: Mr. M. S. Godorov, Lancaster S. C.
Mr. F. E. Peam, Lehigh S. C.
Mr. J. V. Preston, Susquehanna S. C.
Mr. J. J. Sikora, Scranton S. C.
Mr. M. S. Sobeck, Harrisburg S. C.
Mr. J. F. Furey, G.O. - TW-19
Mr. R. W. Rice, Harrisburg S. C.
Mr. R. J. Collins, Scranton S. C.
Mr. D. C. Mills, Lehigh S. C.
Mr. H. Shaubach, Lancaster S. C.
Mr. F. J. Gaida, Susquehanna S. C.
Mr. G. S. Farber, G.O. - A9-4

QUICK HIT REVENUE COST REDUCTION GUIDELINES FOR DESIGN OF DISTRIBUTION FACILITIES

- **Minimize coincidental work on revenue jobs. Do only work needed to maintain safe and reliable system operation in the area of revenue extension changes. Attached are four (4) examples of typical situations where excess facilities have been installed on revenue extensions.**
- **Install new services using the least cost method, not the most convenient. As an example, use of a larger UG service lateral rather than running UG primary and setting a mini-pad.**
- **Service should be sized per Engineering Instruction 9-19-19 and 9-19-25. All too often, #4/0 and 350 UG cable is being specified when #1/0 and 410 UG is perfectly adequate.**
- **For change of service work, only replace service if there is known load additions or to correct a potentially dangerous or unreliable condition. Most times, customers converting from 60 amp to 100 or 200 amp service entrance facilities are not adding load.**
- **Stop marketing and installation of all private street lighting installations until new cost criteria are established.**
- **All too often, we have not charged customers for replacement of overhead service with underground service. SPI 4A-3 should be applied and customers charged as appropriate.**
- **A few of the "proposed" EMF design changes require additional study and were NOT issued as part of the PUC EMF guidelines. Review all of these guidelines again and follow only those that were submitted to the PUC. Specifically:**
 1. **All new mainline (477 kcmil AAC) distribution should be constructed using triangular close-spaced covered conductor. Use 50 ft. poles in urban areas and 45 ft. poles in suburban/rural areas as the design standard for this size conductor.**
 2. **Three-phase lines using #1/0 ACSR conductor should continue to use crossarm construction as the preferred method. The benefit gained by reconfiguring these lines to triangular close-spaced is minimal due to lighter loading and inherent current unbalance.**
- **Continue the use of two-phase and neutral as an option to reinforce single-phase taps, or to supply new customers with minimal three phase loads.**

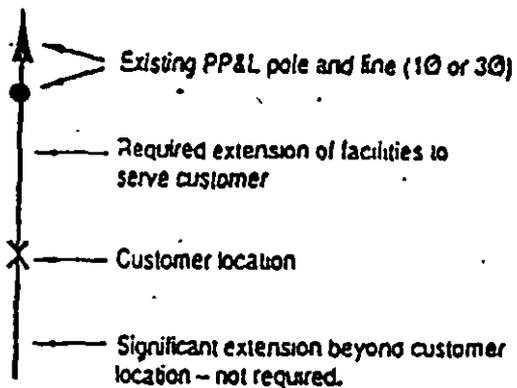
- **XLP conductors shall only be used as defined in Engineering Instruction 9-03-03 and the EMF Guidelines. Full width R/W clearing for both single and three phase lines should be requested. If refused by property owners, then specify XLP conductors. An exception is where previously obtained blanket rights-of-way do not provide adequate tree clearing for bare conductors.**
- **Do not replace weatherproof primary or secondary conductors if they are electrically and mechanically adequate, even though covering is deteriorated and falling off.**
- **Retain open secondary conductors where feasible if they are adequate electrically and mechanically, neutral need not be replaced, and tree trimming would not be required in the near future. Installation of cabled secondary will be necessary, in some cases, based on specific field conditions.**
- **Retain open-wire services which are electrically and mechanically adequate if covering is intact and services are not exposed to tree contact.**
- **Retain poles of adequate height and class that are not 'C' tagged, regardless of type of wood or general appearance. Unsightly poles may be replaced if strong aesthetic considerations dictate replacement. Good engineering judgment is the key to determine if a pole should be replaced. If an existing pole is to be used in a new or rebuilt main line and the size is adequate, the remaining life of the pole and the general location of the line should be considered before the pole is automatically replaced.**
- **All new poles shall be of the minimum height and class that will satisfy NESC strength and clearance requirements, will provide reasonable tree clearance, and meet immediate or reasonably anticipated future needs.**
- **Salvage existing poles that must be removed for reuse at other locations in accordance with DDI-353 "Salvage & Reuse of Wood Products - Poles, Crossarms and Timbers".**
- **Respacing of poles shall be minimized. Where long spans exist, intersperse poles, rather than respace if more economical. Use existing poles to the greatest extent possible.**
- **Install pole top extension per 6-13-50 where additional pole height is required when pole has adequate strength, pole top is not deteriorated and pole is not 'C' tagged.**
- **When pole top is deteriorated and required clearances can be obtained by lowering attachments below deteriorated portion, cut off deteriorated portion and cap pole. A pole top extension may also be used to obtain required clearances on cut off poles.**

- **Retain existing alley arms when existing conductors are to be used and clearances are adequate. If conductors are to be replaced and clearances are adequate, evaluate cost to replace conductors on alley arms and ridge pins vs. other framing, and specify least expensive method.**
- **Crossarm framing shall be used for all new construction, unless EMF Guidelines, aesthetics or clearance concerns dictate using covered conductor with either vertical standoff brackets (VSBs) or fifty-six inch (56") wood crossarm.**
- **Buck arms shall be used to avoid replacement of poles where all the conditions of Engineering Instruction 9-13-03 are met.**
- **Install deadends for line extensions, rather than the removal of existing deadends and "sleeving through" to reduce labor costs.**

Examples of Typical Jobs Containing Excess Facilities

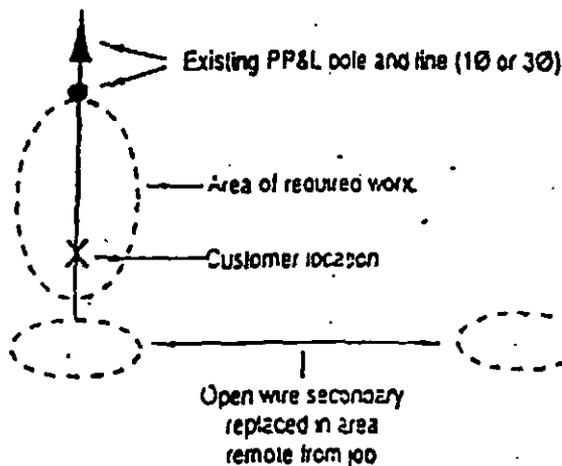
Example 1

Unnecessary Future Facilities Installed



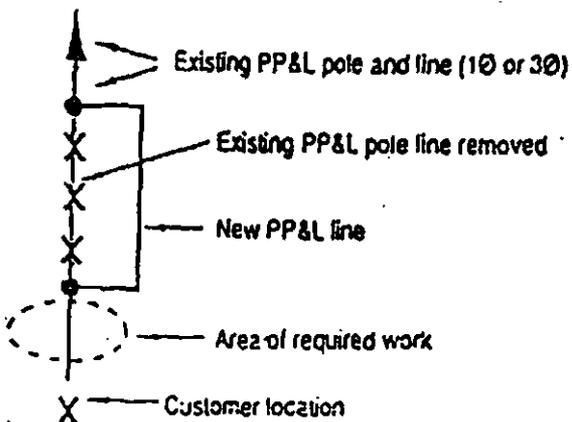
Example 2

Unnecessary Replacement of Open Wire Secondary



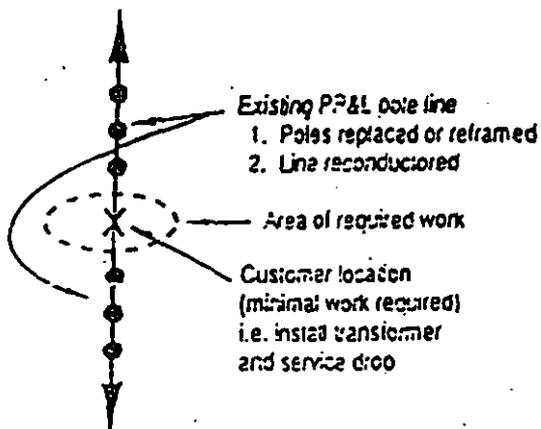
Example 3

Unnecessary Relocation



Example 4

Unnecessary Pole Work or Reconductoring (ahead of or beyond customer)

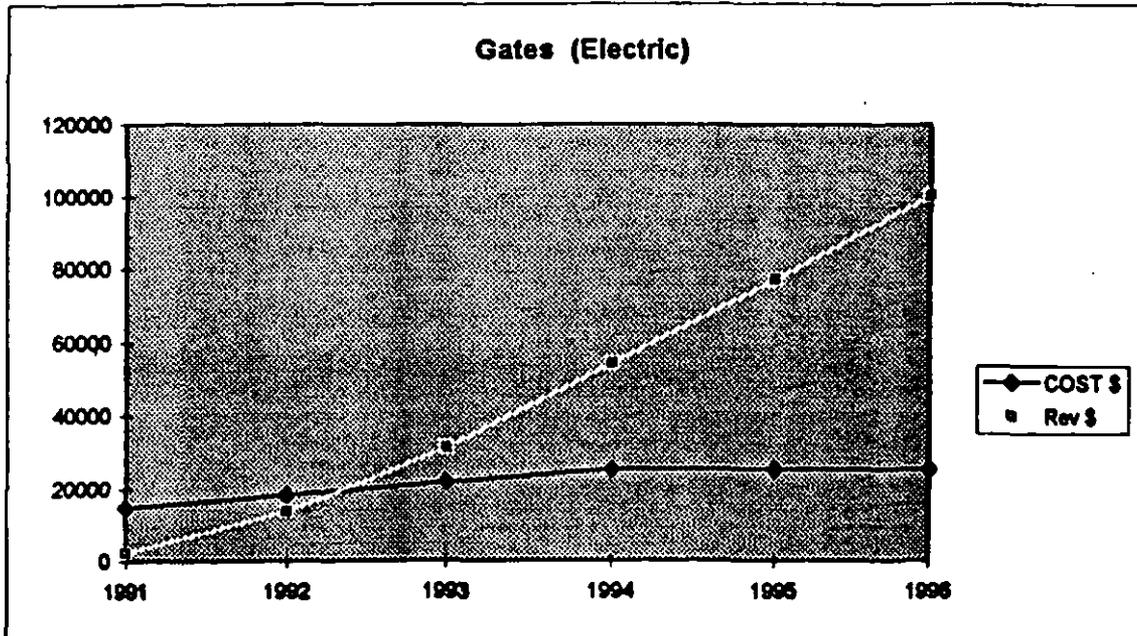


PENNSYLVANIA POWER & LIGHT COMPANY
REVIEW OF EXTENSION OF SERVICE POLICIES

JOB NUMBER 739813-96

GATES DEVELOPMENT (Electric)

YEAR	Cumm COST \$	Cumm Rev \$	INITIAL COST \$	TRF & Serv	Incr Add'l Rev \$	Devel Yrly Rev \$
1991	14977	2400	11535	3442	5760	5760
1992	18419	13920		3442	5760	11520
1993	21861	31200		3442	5760	17280
1994	25303	54240		3442	5760	23040
1995	25303	77280		0	0	23040
1996	25303	100320		0	0	23040

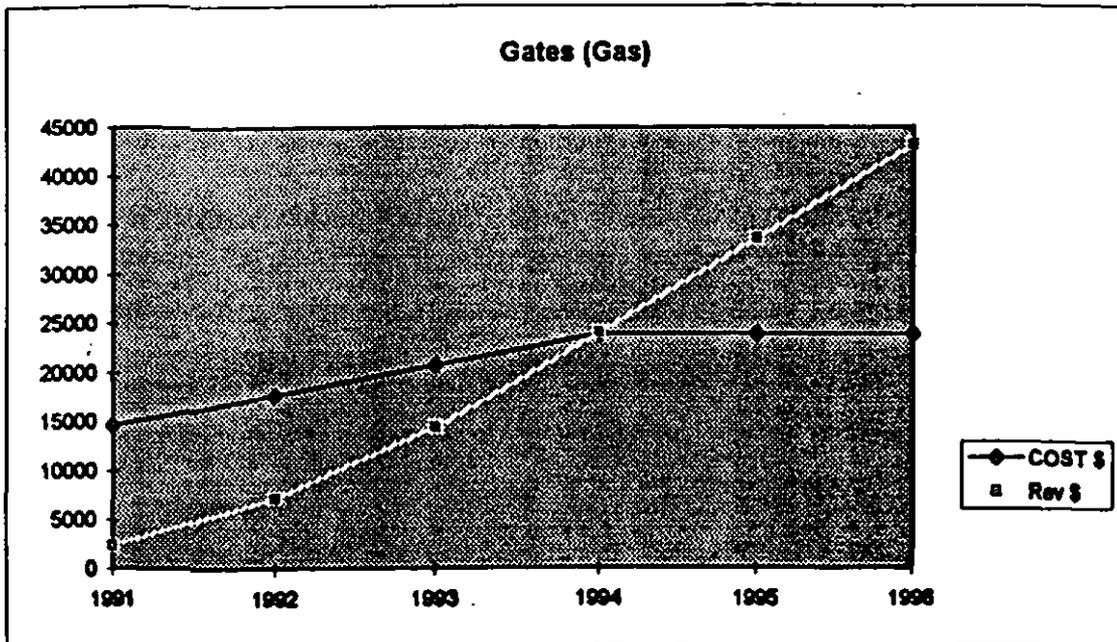


PENNSYLVANIA POWER & LIGHT COMPANY
REVIEW OF EXTENSION OF SERVICE POLICIES

JOB NUMBER 739813-96

GATES DEVELOPMENT (Gas)

YEAR	Cumm COST \$	Cumm Rev \$	INITIAL COST \$	TRF & Serv	Incr Add'l Rev \$	Devel Yrly Rev \$
1991	14822	2400	11535	3087	2400	2400
1992	17709	7200		3087	2400	4800
1993	20796	14400		3087	2400	7200
1994	23883	24000		3087	2400	9600
1995	23883	33600		0	0	9600
1996	23883	43200		0	0	9600

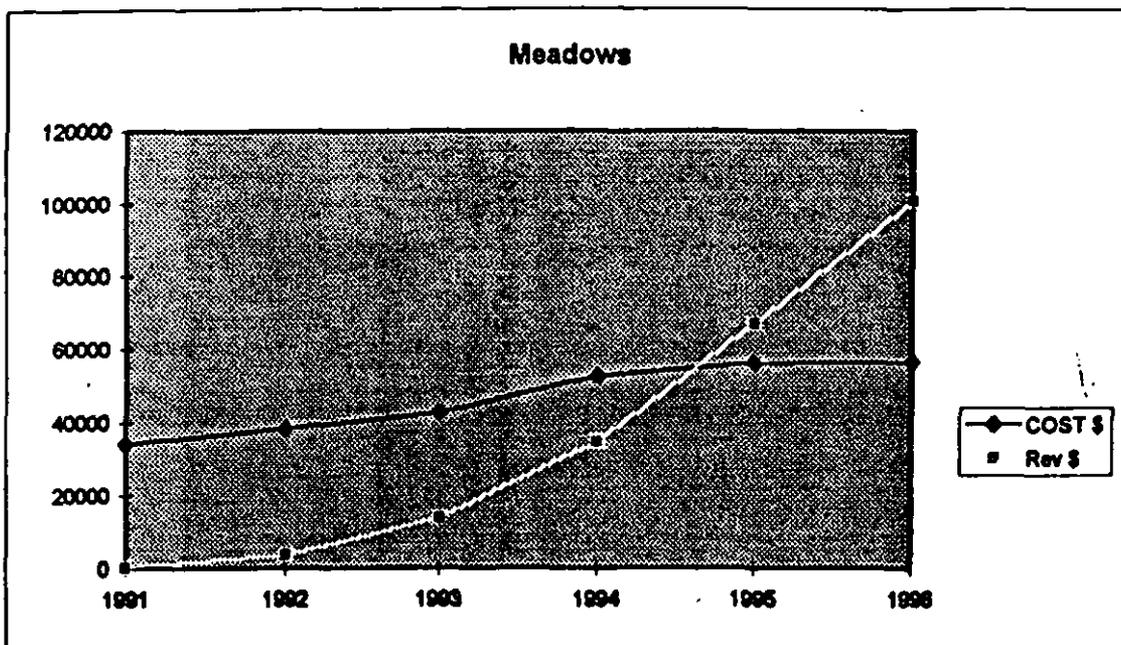


PENNSYLVANIA POWER & LIGHT COMPANY
REVIEW OF EXTENSION OF SERVICE POLICIES

JOB NUMBER 739813-96

MEADOWS DEVELOPMENT (Electric)

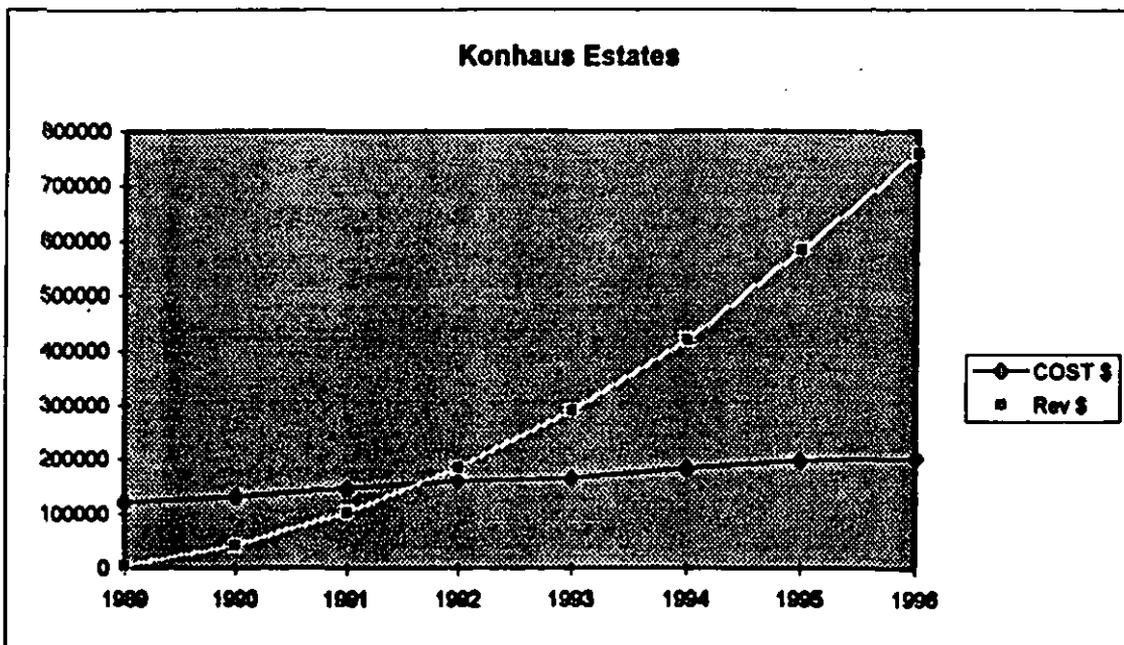
YEAR	Cumm COST \$	Cumm Rev \$	INITIAL COST \$	TRF & Serv	Incr Add'l Rev \$	Devel Yrly Rev \$
1991	34283	442	32215	2068	442	442
1992	38419	3761		4136	2878	3318
1993	42555	13814		4136	6735	10053
1994	52807	34892		10252	10825	20878
1995	58013	68857		3206	11287	32165
1996	58471	100810		458	1788	33953



PENNSYLVANIA POWER & LIGHT COMPANY
REVIEW OF EXTENSION OF SERVICE POLICIES
JOB NUMBER 739813-96

KONHAUS ESTATES (Electric)

YEAR	Cumm COST \$	Cumm Rev \$	INITIAL COST \$	TRF & Serv	Incr Add'l Rev \$	Devel Yrly Rev \$
1989	120764	4493	101545	19219	20144	20144
1990	130792	40998		10028	18381	38505
1991	146679	101658		15887	24155	60660
1992	159755	185085		13076	22768	83428
1993	166167	290010		6412	21498	104925
1994	183412	419636		17245	24700	129625
1995	198241	583785		14829	34524	164149
1996	202884	759924		4643	11990	176139



ATTACHMENT 3

PENNSYLVANIA POWER & LIGHT COMPANY

**Follow-Up Review to CATV and Telephone Attachment
Audit Recommendations**

Job Number 739815-97

To: Mr. M. J. Powl

**CC: Mr. R. M. Geneczko
Mr. J. J. McCabe**

Sr. Audit Consultant:

Audit Team Leader:

Reviewed By:

Date Issued:

John A. Bolash
Michael P. Moynick
Martin J. Urban
March 10, 1997

March 10, 1997

We completed a follow-up review of the recommendations made in the 1993 audits of the Administration of Cable Television (CATV) Pole Attachments and the Joint Use of Poles with Telephone Companies.

The prior audits of CATV and Joint Use Attachments resulted in several significant recommendations including:

- the development and implementation of a Business Strategy Team to address the strategy, goals, initiatives, fees and general business policies regarding CATV and the Joint Use of Poles and periodically obtaining management's review and approval of the strategies developed; and,
- annually comparing the current CATV pole attachment fee to the maximum allowed under the Federal Communication Commission (FCC) guidelines, reviewing the actual costs of providing services, and obtaining management approval of the appropriate billing fees.

The primary purpose of this review was to determine if our recommendations were implemented, including whether or not a Team was established, met periodically to address initiatives, fees, and general business policies and provided management with advice regarding pole attachment activities.

EXECUTIVE SUMMARY

Division Operations personnel (now Electrical Systems) generally accepted and implemented our recommendations. They immediately implemented the most significant recommendation - the establishment of a Business Strategy Team (Team).

We are encouraged that the Team has been reviewing various revenue enhancing opportunities in addition to the cost of services and has recommended annual increases to the CATV attachment fee in accordance with FCC Guidelines. In addition to receiving approval for increasing attachment fees which resulted in increasing revenues by more than \$160,000 annually, the Team identified and received approval for the rental of underground duct space, and the installation, by PP&L crews, of fiber optic cable in underground vaults.

BACKGROUND

There were a total of 23 recommendations included in the CATV Attachment Audit Report and 8 recommendations included in the Telephone Attachment Audit Report. The more significant recommendations included establishing a Business Strategy Team (Team) to address strategy, initiatives, and policies regarding attachments to PP&L-owned poles and joint use of poles and reviewing the costs of providing services with a view to increasing revenues.

The Team initially consisted of members from Distribution and Distribution Systems Support in addition to some of the current members. Because of reorganization, retirements and other personnel changes, personnel from Electrical Systems, Corporate Telecommunications, and Rates joined the Team. This Team is now known as the Facility Occupancy Strategy Team (FOST) and has been meeting on a fairly regular basis to review various attachment issues and to address new revenue enhancing opportunities. The FOST Team's recommendations are submitted to upper management for approval prior to implementation.

FEE INCREASES

The FOST Team reviews the CATV attachment fee with the intent to increase revenues where possible. The prior audit noted that the fee had not been changed in 10 years. The fee had always been considerably less than that allowable under the formula developed by the FCC. Accordingly, the FOST Team sought approval for and received permission to increase the annual attachment fee in each of the past four years to the maximum allowed by the FCC Guidelines.

Beginning January 1, 1997, the FOST Team acted again to increase the annual CATV attachment fee which puts the rate at 29 percent over the 1993 rate. The rate increases over the past four years resulted in total increased revenues of approximately \$640,000.

The FOST Team has also been evaluating the effects of the recently enacted Telecommunications Reform Act. One of the pending changes would revise the calculation formula to allow utilities to charge market rates. Analyses are still being performed to determine if this would provide opportunities for additional revenues.

The FOST Team is reviewing the fees for joint use of poles with telephone companies. The Team has concerns that changes to these fees would require renegotiation of the Agreements which would entail additional risk exposures. The particular concern is that telephone companies have expressed interest in reducing the amount of space they rent on a joint-use pole from three to two feet. This would result in reduced revenues and increased expenses for PP&L since the fee was determined based on the use of the three foot space by the Telephone companies.

The Agreement with Bell Telephone states that the annual attachment fee is based in part on the average installed cost. PP&L, however, has not been formally obtaining the installed cost information from Bell Telephone. Our current analysis of costs and the Telephone company's interest in reducing their useable pole space shows this to be a prudent business decision. The FOST Team (or the Joint Use Administrator) should, at a minimum, document his position for not obtaining the cost data.

STATUS OF THE OTHER RECOMMENDATIONS

The majority of recommendations for CATV and joint use of poles were of lesser significance and have been implemented by field personnel or addressed by the original Business Strategy Team. These recommendations included issues such as performing overdue field surveys, obtaining proof of insurance coverage and obtaining signed agreements from certain CATV companies.

ADDITIONAL EFFORTS

The FOST Team continues to identify, evaluate and bring to management's attention additional opportunities for increasing revenues. These opportunities include rental of underground duct space and installation of fiber optic cable in underground ducts.

In 1996, certain Regional Managers expressed interest in the handling of certain pole attachment issues identified in the prior audits. The Regional Managers were unaware that the FOST Team was in place and addressing these issues. This occurred because of a lack of communication by the FOST Team to the appropriate parties. The communications gap has been resolved with Team meeting minutes provided to the Vice President - Electrical Systems and to the Regional Managers. In addition, the Joint Use Administrator provides updates of the Team's activities at Electrical Systems' staff meetings. Team meeting discussions should continue to be documented in meeting minutes, including discussions of a confidential nature to ensure a record of what had been addressed, assignments made and conclusions reached or deferred.

We also discussed the need to establish specific Team meeting dates as far in advance as possible due to the increased responsibilities of FOST Team members in their current job positions. This procedure should afford all Team members the opportunity to schedule attendance at the Team meetings and contribute to the Team's efficiency and effectiveness.

ACKNOWLEDGMENT

On January 2, and again on January 21, 1997, we met with M. J. Powl, Chairman - Facility Occupancy Strategy Team and discussed the issues included in this report.

We do not anticipate a reponse to this report.

Corporate Audit Services

**Pennsylvania Power & Light Company
Response to Interrogatories
of the Environmentalists, Set I
Dated April 22, 1997**

Docket No. R-00973954

- Q.10. First identify, and then provide, each report of an **outside audit** of the Company's transmission and/or distribution system, and/or the units of the Company responsible therefor: since the filing of the Company's preceding general base rate case.
- A.10. An audit of PP&L's Implementation of Selected Recommendations from Schumaker & Company's 1994 Stratified Management and Operations Audit report -- Management Efficiency Investigation, was performed since the Company's most recent base rate case. The final report is not complete as of this date. No other outside audits were performed.

**Pennsylvania Power & Light Company
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Dated April 22, 1997**

Docket No. R-00973954

- Q.40. First identify each **contract**, complete with all necessary amendments and/or attachments, which the Company has **with another NONutility(s)** for the purchase of electricity, whether on a firm capacity or other basis. Please provide the Company's best summary on hand of the terms of the documents.
- A.40. Attachment 1 identifies each contract, and summarizes key contract terms, for the purchase agreements that PP&L has with non-utility generators. Copies of each contract, and all amendments and/or attachments, which the Company has with non-utility generators are voluminous. This information is, however, available for inspection at PP&L's General Office at Two North Ninth Street, Allentown, Pennsylvania.

ATTACHMENT 1

PP&L's Non-Utility Generators

Name of Facility	MW	Type of Unit	Effective Date (1)	Length of Contract	Payment Rates (2)
Amity (Taylor) Landfill	2	Landfill Gas	7/22/89	2010 (3)	\$0.060/KWH
Archbald Power Corp (4)	21.5	Culm	9/12/90	20 Years	\$0.066/KWH
Continental Energy Assoc (5)	100	Gasified Coal	3/19/89	20 Years	\$0.053/KWH
Foster Wheeler Mt. Carmel	40	Culm	3/8/90	20 Years	\$0.066/KWH (6)
Gilberton Power Corp	79.5	Culm	2/14/88	12/31/02 (7)	\$0.066/KWH
Hammernill Paper Co	22	Coal Cogen	11/19/84	12/1/97	\$0.03-0.05/KWH (8)
Harrisburg Energy - Paxton Creek	12	Gas Cogen	1/1/96	7 Years	\$875,000/YR (9)
Harrisburg, City of (MSW)	16	MSW	11/21/86	2010 (3)	\$0.06/KWH
Keystone Recovery	5.25	Landfill Gas	12/22/94	20 Years	\$0.06/KWH
Koppers Company	7.5	Waste Wood	6/14/88	2010 (3)	\$0.06/KWH
NEPCO	50	Culm	9/12/89	20 Years	\$0.066/KWH
Schuykill Energy Company	79.5	Culm	12/12/89	20 Years	\$0.066/KWH
Viking Energy Systems	18.5	Waste Wood	11/20/88	20 Years	\$0.066/KWH
Wheelabrator Frackville	42	Culm	9/26/88	20 Years	\$0.066/KWH
West Allegheny Biomass (10)	12	Biomass		10 Years	\$0.027/KWH
Windmills, Hydro & Other (11)				2010 (3)	\$0.06/KWH

Notes:

1. Date indicated is the "Effective Date", i.e., the date on which the Power Purchase Agreement (PPA) became effective. In most cases, a small amount of test power was purchased at actual avoided cost rates prior to the effective date.
2. The rate indicated is the rate for future payments for MW output levels defined in the original agreement. Subsequent amendments have allowed for the purchase of small amounts of energy from some NUGs at approximately actual avoided cost.
3. PP&L's Pioneer Rate applies for the NUG's indicated. Despite the terms of any contract entered into under the Pioneer Rate Tariff, the PPUC has ruled that the 6 cent/KWH rate will be made available to eligible projects until 1/1/10. This will not change unless the PPUC modifies PP&L's Pioneer Rate Tariff.
4. PP&L and Archbald have agreed to terminate the PPA subject to PPUC approval. This is expected to occur by about 10/1997. Buyout payments are to be \$400,000 per month for 49 months.
5. The Continental PPA was terminated on 2/24/97. PP&L will make five annual payments of \$16.17 million each.
6. Payment rate for Foster Wheeler for the period 1990-1995 was 6 cents/KWH. The rate increased to 6.6 cents/KWH starting in 1996.
7. The contract can also be extended for 5 years at Gilberton's sole option.
8. PP&L purchases on-peak energy from Hammernill at the higher of 5 cents/kwh or the Shared Benefit Rate. Off-peak energy is purchased at the higher of 3 cents/kwh or the Shared Benefit Rate. In the recent past, the Shared Benefits Rate has been lower than the on-peak & off-peak floor prices, and this is expected to continue in 1997.
9. Under the terms of the agreement with Paxton, PP&L is to receive a minimum of 10,800 MWH/Yr. In return, PP&L is to pay Paxton a fixed payment of \$504,000/Yr plus reimbursement for actual variable costs up to \$371,000/Yr (adjusted annually by a Fuel Index). For power purchased over 10,800 MWH/Yr, PP&L pays actual variable costs.
10. This NUG is not currently operational. It's scheduled in-service date is 1/1/98.
11. PP&L has numerous small NUGs of the type noted that qualify for the Pioneer Rate.

**Pennsylvania Power & Light Company
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Dated April 22, 1997**

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- Q.41. First identify, and then provide, each **tariff sheet, FERC and/or the Public Utility Commission**, complete with all necessary amendments and/or attachments, applicable to the Company's arrangements with **another NONutility(s)** for the purchase of electricity, whether on a firm, capacity or other basis. Please provide the Company's best summary on hand of the terms of the documents.
- A.41. PP&L purchases energy from non-utility generators that use biomass (excluding direct combustion of the biomass resource), municipal solid waste, solar, wind or small hydro (5 MW or less) as the energy source under Tariff Rule 6E, as filed with the Pennsylvania Public Utility Commission (PPUC). A copy of Tariff Rule 6E (Purchase of Energy from Specific Customer-Owned Generating Equipment), applicable to non-utility generators that have met defined criteria, is provided as Attachment 1. The rule itself is the best summary of the terms of the document.

ATTACHMENT 1

RULES FOR ELECTRIC SERVICE

RULE 6 - AUXILIARY SERVICE

A. APPLICATION

(1) Service to customers who have another source of power which can be substituted for Company's service for any of customer's operations is supplied only under the terms of this rule unless such other source of power is maintained solely for use in case of interruption of Company's service or unless the rate schedule provides for auxiliary service.

(2) Service is supplied only where Company has available the capacity and facilities adequate for the service and only under a contract for an initial term of one or more years under a general service rate schedule with measured demands. Bills for service are based on charges specified in the rate schedule, subject to a minimum charge as described in this rule.

(3) The customer's equipment may not be operated concurrently by means of service supplied by Company and by such other source of electric or mechanical power except upon written agreement setting forth the conditions of such operation.

B. MINIMUM CHARGE

The minimum monthly charge is the KW demand and KWH energy charges in the rate schedule for 100 hours use of the kilowatts of Reserved Capacity, plus the succeeding KW charge in the rate schedule for any kilowatts of the Billing KW in excess of the kilowatts of Reserved Capacity.

C. RESERVED CAPACITY

(1) When customer's entire power requirements exceed the capacity of such other source of power and no load limiter is installed, the Reserved Capacity is the rated capacity in kilowatts (at unity power factor) of customer's other source of power. In all other cases the Reserved Capacity is the average kilowatts, corrected for power factor in the manner prescribed in the rate schedule, supplied during the single 15 minute period of maximum use during the current billing month or any of the preceding 11 months, but not less than the kilowatt setting of a load limiter, or, when no limiter is installed, not less than Company's estimate of the number of kilowatts of customer's entire power requirements as stated in the contract.

(2) The customer has the option of furnishing, installing and maintaining a load limiter for service supplied by Company, which shall be approved, set and sealed by Company. The limiter will be set at approximately the number of kilowatts of Reserved Capacity contracted for by the customer.

D. ENERGY CONSERVATION WAIVER

For an experimental period to January 1, 1990, minimum charges under this rule are waived where the customer's auxiliary source of energy (a) utilizes a renewable energy source such as solar, wind or water power, or (b) is derived as an initial or residual product of an energy system which is also supplying the customer's heat, steam or other processing needs.

E. PURCHASE OF ENERGY FROM SPECIFIC CUSTOMER-OWNED GENERATING EQUIPMENT (Limited 3-1-88)

(C)

The Company will purchase the net electric energy output from a customer's generating facility provided: (1) the facility uses biomass (excluding direct combustion of the biomass resource), municipal solid waste, solar, wind or small hydro (5 MW or less) as the energy source; (2) the customer's system is installed in accordance with Company specifications and the receipt of the facility's output is not detrimental to the operation of the Company's distribution system or to other customers; and (3) the customer compensates the Company for the estimated cost of interconnection and metering facilities in excess of what is required for normal service. Any subsequent maintenance and modification of such facilities to adjust to changing conditions on the Company's electrical system is at the selling customer's expense. For these provisions to be applicable to a municipal solid waste project, the proposed operator/owner of such project must demonstrate that governmental agencies having the right to approve or reject the operation and location of such project have been informed of the planned source of all waste to be processed, and assent to the processing of such waste, as evidenced in a letter or statement duly executed.

(C) Indicates Change

(Continued)

RULE 6 - AUXILIARY SERVICE (CONTINUED)

E. PURCHASE OF ENERGY FROM SPECIFIC CUSTOMER-OWNED GENERATING EQUIPMENT (Limited 3-1-88)
(Continued) (C)

Energy output is purchased, as available, from the customer's qualifying facility at the rate of \$0.06 per KWH or at the calendar year weighted average value of PP&L's interchange energy sales and purchases when such rate exceeds \$0.06 per KWH. Payments so determined are limited to purchases made prior to January 1, 1990. Thereafter, payments will be maintained at the rate in effect for 1989. Payment on the basis of \$0.06 per KWH is made monthly for energy received from the qualifying generating facility in the preceding month with reconciliation with the annual rate as soon as the calendar year data is available. At the Company's option, when purchases are less than 150 KWH per month, payment may be made annually.

The rate in this rule is available to developers who contacted the Company regarding the application of this rule to a specific project prior to March 1, 1988 or who can demonstrate that they made substantial progress toward the development of a specific project or facility prior to March 1, 1988. The following constitute evidence of substantial progress toward developing a project:

- (1) FERC certification granting qualifying status to the facility,
- (2) a statement of project definition including preliminary project design,
- (3) a letter of intent or similar evidence of host site control,
- (4) evidence of adequate fuel supply consistent with anticipated project life and energy production,
- (5) a plan for obtaining all necessary project licensing, and
- (6) preliminary evidence of the project's financial feasibility and a preliminary financing plan.

A developer unable to reach agreement with PP&L concerning the substantial progress criteria must initiate a formal proceeding with the Commission within ninety (90) days of the effective date of this tariff supplement.

Additionally, the rate is available only to those developers who satisfy the above criteria and who sign a power purchase agreement applicable to the project prior to January 1, 1990 or who began negotiations on the agreement within a reasonable period of time after the effective date of this tariff supplement, but have been unable to sign a power purchase agreement prior to January 1, 1990 due to a legitimate contract dispute.

The rate under this rule expires January 1, 2010.

(C) Indicates Change

**Pennsylvania Power & Light Company
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Dated April 22, 1997**

Docket No. R-00973954

- Q.62. First identify, and then provide, each communication since January 1, 1996, or record or summary of such communication, to and/or from each large industrial or commercial customer regarding the development of:
- a) an alternative tariff;
 - b) a discount, or other reduction in bills or rates;
 - c) the provision of services to assist in lowering bills; and/or
 - d) transmission of power generated by another entity.
- A.62.
- a) The Company has not offered an alternative tariff to any customer.
 - b) It would be unduly burdensome to produce the information. The information also is considered to be confidential by the parties. PP&L believes that it cannot release this information without the consent of the customer.
 - c) See the response to item b.
 - d) The Company does not transmit power generated by another entity to any industrial or commercial customers.

J. R. Schadt
RECEIVED

Pennsylvania Power & Light Company
Response to Interrogatories
of the Environmentalists, Set 3
Dated May 16, 1997
Docket No. R-00973954

JUN 6 1997

PA PUBLIC UTILITY COMMISSION
PROTHONOTARY'S OFFICE

Q. 112. In the event that the Company is not providing the successor form to FERC Form 12, which we requested in our first set, please provide the most recent Company FERC Form 441. If the document is available electronically, please provide a diskette copy as well.

A. 112. PP&L does not file FERC Form No. 441.

INDEXED

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DOCUMENT
FOLDER

**Pennsylvania Power & Light Company
Response to Interrogatories
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Dated May 19, 1997**

Docket No. R-00973954

- Q.115. (Dr. Kalt's Testimony, page 5) Please explain, with appropriate citation and the witness' interpretation, how the Pennsylvania Public Utility Commission did "require" PP&L "to initiate and carry through" the construction of Susquehanna? Please identify and then provide each document relied upon for this response. (If an order is cited, then please provide the front page and the cited pages.)
- A.115. Professor Kalt is not testifying that the Pennsylvania Public Utility Commission required PP&L to initiate and carry through the construction of Susquehanna. It is Professor Kalt's understanding that Susquehanna was constructed pursuant to PP&L's (and others') franchise responsibilities.

**Pennsylvania Power & Light Company
Response to Interrogatories
of the Environmentalists, Set 3
Dated May 19, 1997**

Docket No. R-00973954

- Q.116. (Dr. Kalt Testimony, page 5) Please explain, with appropriate citation and the witness' interpretation, how each government agency did "require" PP&L "to initiate and carry through" the construction of Susquehanna? Please identify and then provide each document relied upon for the response. (If an order is cited, then please provide the front page and the cited pages.)
- A.116. Professor Kalt is not testifying that a government agency required PP&L to initiate and carry through the construction of Susquehanna. It is Professor Kalt's understanding that Susquehanna was constructed pursuant to PP&L's (and others') franchise responsibilities.

**Pennsylvania Power & Light Company
Response to Interrogatories
of the Environmentalists, Set 3
Dated May 19, 1997**

Docket No. R-00973954

Q.118. (Dr. Kalt Testimony, page 5) Did Dr. Kalt conduct any analysis specific to PP&L and Susquehanna to determine whether and to what extent his generic discussion on page 5 would apply to PP&L and Susquehanna? If not, why not? If yes, please identify and provide all such analyses.

A.118. No, Professor Kalt did not conduct such an analysis. The purpose of Professor Kalt's testimony is to provide an economic and policy framework for restructuring, not to analyze specific investments PP&L has made.

**Pennsylvania Power & Light Company
Response to Interrogatories
of the Environmentalists, Set 3
Dated May 19, 1997**

Docket No. R-00973954

- Q.119. (Dr. Kalt Testimony, page 10, lines 2 to 5) Why, or why not, would stranded cost recovery in a volumetric charge "distort competitive market access?"
- A.119. Professor Kalt is not referring specifically to a volumetric charge in the cited lines of his testimony. Whether or not competitive market access is distorted depends on whether or not the charge is bypassable.

**Pennsylvania Power & Light Company
Response to Interrogatories
of the Environmentalists, Set 3
Dated May 19, 1997**

Docket No. R-00973954

- Q.120. (Dr. Kalt Testimony, page 10, lines 2 to 5) Why, or why not, would stranded cost recovery in a fixed customer charge "distort competitive market access?"
- A.120. Professor Kalt is not referring specifically to a fixed charge in the cited lines of his testimony. Whether or not competitive market access is distorted depends on whether or not the charge is bypassable.

**Pennsylvania Power & Light Company
Response to Interrogatories
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Dated May 19, 1997**

Docket No. R-00973954

- Q.121. (Dr. Kalt Testimony, page 10, lines 2 to 5) Would stranded cost recovery in a volumetric charge "distort" economically efficient decision-making by consumers? If not, why not? If yes, please explain each type of decision that would be distorted, and how.
- A.121. Stranded cost recovery in a volumetric charge would distort economically efficient decision-making by consumers because the incremental cost to consumers of the next increment of energy would be greater than the marginal cost of supplying that last increment of energy. This distortion would potentially affect consumer decisions that directly or indirectly involve energy consumption.

**Pennsylvania Power & Light Company
Response to Interrogatories
of the Environmentalists, Set 3
Dated May 19, 1997**

Docket No. R-00973954

- Q.122. (Dr. Kalt Testimony, page 10, lines 2 to 5) Would stranded cost recovery in a fixed customer charge "distort" economically efficient decision-making by consumers? If not, why not? If yes, please explain each type of decision that would be distorted, and how.
- A.122. Assuming this fixed customer charge is nonbypassable, stranded cost recovery in a fixed customer charge would not distort economically efficient decision-making by consumers because the incremental cost to consumers of the next increment of consumption would not be raised above the social cost of supplying that increment by stranded cost recovery.

**Pennsylvania Power & Light Company
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of the Environmentalists, Set 3
Dated May 19, 1997**

Docket No. R-00973954

- Q.123. (Dr. Kalt Testimony, page 17, line 3 to 5) Are there ways in which fixed costs might influence pricing decision by suppliers in a competitive market? Please identify and describe the means by, and conditions in, which fixed costs might play a role in pricing.
- A.123. The key factor in determining whether or not fixed costs influence suppliers' decisions in a competitive market is whether or not these costs are sunk. Fixed costs can influence suppliers' willingness to enter or leave affected markets, if those costs are sunk or not. The decision to enter or leave a market can, in turn, affect market supply and, hence, price.

**Pennsylvania Power & Light Company
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Dated May 19, 1997**

Docket No. R-00973954

- Q.124. (Dr. Kalt Testimony, page 17, lines 3 to 5) What is the ratio of fixed costs to short-run marginal costs for PP&L and for the electric utility industry generally? How do these ratios compare with the fixed cost to short-run marginal cost ratio for other industries? Please identify and then provide the documents on which your answer relies.
- A.124. Dr. Kalt has not performed the analysis requested. In general, the electric utility industry has a high ratio of fixed to variable costs compared to many other industries.

**Pennsylvania Power & Light Company
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of the Environmentalists, Set 3
Dated May 19, 1997**

Docket No. R-00973954

Q.125. (Dr. Kalt Testimony, page 18, lines 4 to 7) Does stranded cost recovery "tilt the balance" with regard to the balance between supply-demand? Please explain your answer.

A.125. No. As explained in the cited testimony, an appropriately designed CTC paid by all parties does not tilt the balance for or against supplier or consumer.

**Pennsylvania Power & Light Company
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- Q126. Please provide the following items listed in Dr. Kalt's resume:
- a. (page 8) "Cases in Microeconomics," 1990.
 - b. (page 10) "The Impact of Domestic Environmental Regulatory Policy....," 1988.
 - c. (Page 10) "Re-establishing the Regulatory Bargain in the Electric Utility Industry," March 1987.
 - d. (Page 11) "Market Power and the Possibilities for Competition," 1987.
 - e. (Page 11) "The Political Economy of Coal Regulation," 1989.
 - f. (Page 11) "Regional Effects of Energy Price Decontrol....," 1986.
 - g. (Page 11) A Framework for Diagnosing the Regional Impacts of Energy Price Policies," March 1986.
 - h. (Page 11) "The Ideological Behavior of Legislators....," Revised November 1984.
 - i. (Page 11) "A Comment on 'The Congressional Bureaucratic System....," 1984.
 - j. (Page 11) "The Creation, Growth, and Entrenchment of Special Interests Oil Price Policy," 1983.
 - k. (Page 11) "The Costs and Benefits of Federal Regulation of Coal Strip Mining," October 1983.
 - l. (Page 12) "Public Goods and the Theory of Government," 1981.

- m. (Page 12) "Politics Versus Policy in the Restructuring Debate," June 1995.
- n. (Page 12) "An Economic Analysis of Electric Industry Restructuring in New England," April 1995.
- o. (Page 12) "Incentives and Taxes...", March 10, 1993.
- p. (Page 13) "A Review of the Adequacy of Electric Power Generating Capacity in the United States...", June 1986.
- q. (Page 13) "Market Structure, Vertical Integration, and Long-Term Contracts...", April 1985.
- r. (Page 14) "Problems of Minority Fuel Oil Dealers," April 1981.
- s. (Page 14) "Administration Backsliding on Energy Policy," February 1982.
- t. (Page 14) "The Energy Crisis...", January/February 1980.
- u. (Page 15) "Lessons from the U.S. Experience with Energy Price Deregulation," June 1985.
- v. (Page 16) "The Role of Government on the Market Place in the Production and Distribution of Energy," March 1981.

A.126. The identified items are voluminous and difficult to reproduce. The extent these documents are available, the Company will make them available for inspection at ERG's office in Cambridge, Massachusetts.

**Pennsylvania Power & Light Company
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Q.127. First identify, then provide, a listing of the most recent Company official estimate of the cost of decommissioning Susquehanna; and the separate estimates for the two units.

A.127. The official site specific estimates for cost of decommissioning Susquehanna SES (in 1993 dollars) are:

Total	Unit 1	Unit 2
\$804,259,000	\$350,424,000	\$453,735,000

**Pennsylvania Power & Light Company
Response to Interrogatories
of the Environmentalists, Set 3
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Q.128. First identify, then provide, the documentation supporting the most recent Company official estimate of the cost of decommissioning Susquehanna; and the separate estimates for the two units.

"Documentation" includes, but is not limited to engineering studies, reports, and analyses.

A.128. The most recent official estimate of the cost of decommissioning of Susquehanna SES is contained in the 1993 Site-Specific Decommissioning Cost Estimate for Susquehanna Units 1 and 2.

The identified items are voluminous and difficult to reproduce. To the extent these documents are available, the Company will make them available for inspection at PP&L's offices at 2 North Ninth Street, Allentown, Pennsylvania.

**Pennsylvania Power & Light Company
Response to Interrogatories
of the Environmentalists, Set 3
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- Q.129. For the preceding two (2) requests/questions regarding nuclear unit decommissioning costs please include at least the following information:
- a. the date of the estimate;
 - b. the estimated cost;
 - c. the year's dollars in which the cost is expressed;
 - d. the assumed method of decommissioning; and
 - e. the name(s) of the individuals or companies that produced the estimate.
- A.129. a. 1993
b. See the response to Question 127 of the Interrogatories of the Environmentalists, Set 3, Dated May 19, 1997.
c. 1993
d. DECON
e. The study was prepared by TLG Services, Inc..

**Pennsylvania Power & Light Company
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of the Environmentalists, Set 3
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- Q.131. Please identify the person who prepared the most recent decommissioning cost studies (hereinafter referred to as consultant) for the Company's nuclear units.
- a. To what extent, and for what purposes, is the consultant, and/or his firm, under contract with the Company? Please describe and/or provide a copy of the outstanding contract(s).
 - b. Provide the personal and firm resumes of the consultant, including the most recent document in the Company's possession or control listing the consultant's and/or his firm's experience and/or testimony.
 - c. To the Company's knowledge, has the consultant prepared other cost estimates for other nuclear units owned by other companies in since 1995 to the present? If so, please provide each document setting out the estimates which is in the Company's possession and/or control.
 - d. First identify, and then provide, each listing and/or other writing in the Company's possession or control, identifying the units for which the consultant studies have been done.
- A.131. The cost estimate was completed by individuals working for TLG Services, Inc.
- a. TLG Services, Inc. did not participate in the preparation of the Company's Restructuring Filing. TLG Services, Inc. has been retained to assist in preparing responses to Interrogatories and the preparation of rebuttal testimony, if necessary.
 - b. See Attachment 1.
 - c. PP&L has no knowledge of new decommissioning studies prepared by TLG Services, Inc.
 - d. See Attachment 2.

Attachment 1

PENNSYLVANIA POWER & LIGHT COMPANY

Statement 13

Direct Testimony of Thomas S. LaGuardia

Docket No. R-00943271

**DIRECT TESTIMONY OF THOMAS S. LAGUARDIA
ON BEHALF OF
PENNSYLVANIA POWER & LIGHT COMPANY**

1 **Q. Please State Your Name And Business Address.**

2 A. Thomas S. LaGuardia, 148 New Milford Road East, Bridgewater, CT 06752

3

4 **Q. What Is Your Occupation?**

5 A. I am President of TLG Services, Inc. (TLG)

6

7 **Q. What Is The Business Of TLG?**

8 A. TLG provides engineering and field services for nuclear and fossil-fueled generating
9 stations.

10

11 **Q. What Are Your Responsibilities With TLG?**

12 A. I am responsible for the technical and business management of engineering and
13 field services in the areas of decontamination, decommissioning, waste
14 management and general engineering for nuclear and fossil-fueled generating
15 stations.

16

17 **Q. What Is Your Educational And Professional Background?**

18 A. I completed my Bachelor of Science in Mechanical Engineering at Polytechnic
19 Institute of Brooklyn in 1962 and my Master of Science in Mechanical Engineering at
20 the University of Connecticut in 1968. I am a registered Professional Engineer in
21 Connecticut (No. 10393), New York (No. 059389) and New Jersey (No. 38193). I
22 founded TLG in April, 1982. I was employed by Nuclear Energy Services in
23 Danbury, Connecticut, from 1973 until I founded TLG. My prior employment was

1 with Gulf Nuclear Fuels Corporation (formerly United Nuclear Corporation [UNC])
2 and Combustion Engineering.

3
4 **Q. What Is the Purpose Of Your Testimony?**

5 **A.** The purpose of my testimony is to present the results of the dismantling cost studies
6 prepared by TLG for the following fossil-fueled power plants owned and operated by
7 Pennsylvania Power & Light Company (PP&L):

8

9	<u>Station</u>	<u>No. of Units</u>	<u>Station Megawatts</u>
10	Holtwood 15&16	2	(retired)
11	Holtwood 17	1	72 MWe
12	Sunbury 1&2	2	85 MWe
13	Sunbury 3	1	110 MWe
14	Sunbury 4	1	145 MWe
15	Martins Creek 1&2	2	150 MWe
16	Martins Creek 3&4	2	820 MWe
17	Brunner Island 1&2	2	344 MWe
18	Brunner Island 3	1	754 MWe
19	Montour	2	750 MWe

20
21 I am also presenting the results of the 1993 decommissioning cost study prepared
22 for the Susquehanna Steam Electric Station (Susquehanna SES) by TLG.

1 The fossil and nuclear decommissioning cost studies have been identified as
2 Exhibits TSL 1 and TSL 2, respectively.

3
4 **Q. Please Summarize The Costs Identified In Both The Fossil And Nuclear**
5 **Decommissioning Studies.**

6 A. Dismantling and demolishing of the aforementioned fossil-fired steam electric
7 generating stations was estimated to cost approximately \$628.5 million (1994)
8 dollars. The fossil estimate addressed all 16 units at the five sites and included the
9 razing of site structures to grade. Each site was decommissioned upon the
10 cessation of the final unit's operation. Costs were specifically identified for the
11 remediation of asbestos, which is found throughout many of the units. A credit was
12 included for the potential value of the scrap steel and copper generated in the
13 dismantling process.

14
15 Decommissioning of the two nuclear units at the Susquehanna Steam Electric
16 Station was estimated to cost approximately \$804 million (1993) dollars. The study
17 assumes that the units will complete their fully licensed operating lives and that the
18 station will be completely dismantled following the removal of radioactivity. Low-
19 level radioactive wastes were destined for a future facility within the Appalachian
20 Compact while spent fuel was assumed to be transferred to the Department of
21 Energy's geologic repository within approximately five years of plant shutdown.

22

1 **Q. What Is Covered By The Term "Decommissioning" As Used With Reference To**
2 **Generating Stations?**

3 A. Decommissioning is the planned and orderly retirement of a generating station. In
4 the case of nuclear plant decommissioning, it requires the complete removal and
5 controlled disposal of radioactive materials to levels prescribed by the U.S. Nuclear
6 Regulatory Commission (NRC), and termination of the NRC license. The utility may
7 then dismantle the remaining clean systems and structures.

8
9 In the case of a fossil-fueled power plant, upon retirement the facility may either be
10 rendered safe indefinitely (through on-going maintenance, repair and security
11 measures), or dismantled. A specific discussion of public safety and dismantling is
12 included later in this testimony.

13
14 **Q. Do You Have Experience In The Design And Construction Of Fossil-Fueled**
15 **Generating Stations?**

16 A. Yes. During my employment with Combustion Engineering, Inc. from 1962 to 1968,
17 I was a boiler design, performance and construction engineer for 500 megawatt
18 electric (MWe) coal fired power boilers, and merchant and Naval oil fired marine
19 boilers.

20
21 **Q. What Decommissioning Experience Do You Have?**

22 A. My decommissioning experience began as site representative for UNC during the
23 BONUS reactor decommissioning in 1969 and 1970. BONUS was a 17 MWe

1 demonstration power reactor located in Puerto Rico, owned by the U.S. Atomic
2 Energy Commission (USAEC), now the U.S. Department of Energy (USDOE); and
3 operated by the Puerto Rico Water Resources Authority. It was the largest reactor
4 decommissioned by entombment up to that time. The program involved extensive
5 chemical decontamination of radioactive systems, selective piping and component
6 removal, and entombment of the reactor vessel within a massive concrete barrier.
7 The entombment has a design life of 125 years. My role as site representative was
8 to act as a technical liaison and provide project engineering and schedule
9 management assistance during system decontamination, component removal,
10 vessel entombment and facility close-out.

11
12 Following the BONUS program, I was lead engineer for UNC during the Elk River
13 Reactor decommissioning between 1970 - 1974. Elk River was a 20 MWe
14 demonstration power reactor located in the state of Minnesota, owned by the
15 USAEC and operated by United Power Association. Elk River was decommissioned
16 by complete dismantling. The program involved segmentation of the reactor vessel
17 and internals using remotely operated cutting torches, as well as the packaging,
18 shipping and controlled burial of the segments.

19
20 Similarly, radioactive piping and components were removed, packaged, shipped and
21 buried. Radioactive concrete was demolished by controlled blasting, and
22 nonradioactive concrete demolished by wrecking ball to completely dismantle the

1 facility. Initially, my role for UNC was Consulting Engineer and later Lead Engineer
2 for UNC technical support for on-site activities.

3
4 I was Project Engineer for the detailed engineering and planning of the Shippingport
5 Station Decommissioning Project from 1979 - 1982. Shippingport was a 72 MWe
6 light water breeder reactor located in the state of Pennsylvania, owned by the
7 USDOE and operated by Duquesne Light Company. The facility is now dismantled,
8 and TLG, with its joint venture partner, Cleveland Wrecking Company, dismantled all
9 of the clean and contaminated piping and components and removed contaminated
10 concrete. My role for TLG/Cleveland was Project Director, and I selected and
11 managed an on-site project management team to hire and supervise work crews to
12 accomplish the dismantling. Our work is complete and was performed on schedule
13 and within budget.

14
15 I also assisted Atomic Energy of Canada, Ltd. in the detailed engineering and
16 planning for the decommissioning of the 238 MWe Gentilly Unit 1 reactor located in
17 Three Rivers, Canada. My role was to provide overall decommissioning consulting
18 services and detailed cost estimation of alternatives.

19
20 TLG worked with the Northern States Power Company between 1988-89 in the
21 preparation of the decommissioning plan for the Pathfinder Atomic Power Plant.
22 Pathfinder, located in Sioux Falls, S.D., was a 60 MWe reactor initially placed in a
23 safe storage condition (SAFSTOR) after an abbreviated operating life. TLG

1 prepared detailed cost and schedule estimates, and vessel activation estimates,
2 analyzed the reactor vessel to be used as its own shipping container, and prepared
3 the decommissioning plan in support of plant decommissioning.

4
5 TLG continues to assist the Sacramento Municipal Utility District with the
6 decommissioning planning for the Rancho Seco Nuclear Generating Station. This
7 work, ongoing since 1989, has included a detailed reactor vessel activation analysis,
8 preparation of decommissioning alternative cost and schedule estimates, and assis-
9 tance with the preparation of the decommissioning plan.

10
11 TLG assisted the Long Island Lighting Company in the decommissioning of the
12 Shoreham Nuclear Power Station. This work included the preparation of a detailed
13 reactor vessel activation analysis, cost estimates, schedules, management organiza-
14 tion, waste volume estimates and preparation of a draft decommissioning plan.

15
16 TLG was selected by Cintichem, Inc. (a subsidiary of Hoffman-LaRoche) as
17 Decommissioning Co-Managers of a 10 megawatt (MWt) thermal research reactor
18 and associated hot cells and facilities. TLG's staff prepared a reactor core activation
19 analysis, and a cost and schedule estimate for the project. TLG assisted in the
20 preparation of the decommissioning plan which has received Nuclear Regulatory
21 Commission (NRC) approval. TLG's field management staff is on-site assisting in
22 the project management and supervision of the work crews in decommissioning and

1 dismantling the facility. My role in the project is Senior Decontamination and
2 Decommissioning Expert on the Nuclear Safeguards Committee.

3
4 TLG is also currently involved in the engineering and planning activities associated
5 with the decommissioning of the Yankee Rowe, Trojan Nuclear Plant and Big Rock
6 Point nuclear units. This work includes activation analyses, preparation of
7 decommissioning alternative cost and schedule estimates, and assistance with the
8 preparation of the decommissioning plans. In addition, TLG has been selected to
9 prepare the steam generators and the pressurizer at Trojan for transport to the burial
10 facility at Richland, WA. TLG will be responsible for certifying package integrity,
11 overseeing the grouting of the components and preparing any supporting
12 transportation analyses.

13
14 **Q. Have You Prepared Or Co-authored Any Studies And Reports On
15 Decommissioning Cost Estimating And Technology?**

16 **A. Yes. While at Nuclear Energy Services, I was Principal Investigator for the Atomic
17 Industrial Forum National Environmental Studies Project (NESP) decommissioning
18 study entitled "An Engineering Evaluation of Nuclear Power Reactor
19 Decommissioning Alternatives" (AIF/NESP-009). This study evaluated the costs,
20 schedules and environmental impacts of decommissioning 1100 MWe reactors
21 (Pressurized Water Reactors [PWRs], Boiling Water Reactors [BWRs], and High
22 Temperature Gas Reactors [HTGRs]).**

23

1 I also co-authored the "Decommissioning Handbook" for the USDOE. The
2 Handbook reported the state-of-the-art in decommissioning technology (as of 1980),
3 including decontamination, piping and component removal, vessel segmentation,
4 concrete demolition, cost estimating and environmental impacts.

5
6 At TLG, I co-authored "Guidelines for Producing Commercial Nuclear Power Plant
7 Decommissioning Cost Estimates" (AIF/NESP-036) for the Atomic Industrial Forum,
8 National Environmental Studies Project. The Guidelines identify the elements of
9 costs to be included in the estimation of decommissioning activities for each of the
10 principal decommissioning alternatives. Specific guidance in cost estimating
11 methodology and reference cost data is provided in this study. The major objective
12 of this study is to provide a basis for consistent cost estimating methodology.

13
14 TLG also prepared a study, which I co-authored, entitled, "Identification and
15 Evaluation of Facilitation Techniques for Decommissioning Light Water Power
16 Reactors" (NUREG/CR-3587) for USNRC. The study evaluated the costs and
17 benefits of techniques to reduce occupational exposure and waste volume from
18 decommissioning. In addition, TLG prepared the Decommissioning Plans (DP) for
19 Dresden Unit 1, Pathfinder and Cintichem reactors, and the Environmental Reports
20 (ER) for Dresden Unit 1 and Indian Point Unit 1.

21
22 Under my supervision and direction, TLG has prepared site-specific
23 decommissioning studies for most of the nuclear units in the United States and 43

1 fossil-fueled power plants. TLG personnel authored the paper "How to Determine the
2 Cost of Dismantling a Fossil-Fuel Electric Power Plant," A. Carlstrom, Cost
3 Engineering Magazine, April, 1989.

4
5 TLG was responsible for overseeing the dismantling and demolition of a fossil-fueled
6 steam plant for a major Connecticut hospital facility. In connection with this
7 demolition project, I participated in the site inspection and cost estimate
8 development. The work was subcontracted and TLG personnel supervised the
9 contractors.

10
11 **Q. For What Utilities Has TLG Prepared Site-Specific Dismantling Studies Of**
12 **Fossil-Fueled Power Plants?**

13 **A. In addition to the PP&L study, TLG has prepared site-specific dismantling studies for**
14 **fossil-fueled power plants owned by:**

15 Indianapolis Power & Light Company
16 Allegheny Power System
17 Kansas City Power & Light Company
18 Texas Utilities Company
19 Public Service Electric & Gas Company
20

21 **Q. Has The NRC Approved Site-Specific Cost Estimates For Nuclear Units**
22 **Utilizing TLG's Cost Estimating Methodology?**

23 **A. Yes. The NRC has reviewed TLG's cost estimating methodology. The NRC**
24 **approved the decommissioning plan proposed by TLG for the Pathfinder Atomic**
25 **Power Station. Funding provisions were based upon a site-specific estimate**
26 **developed by TLG. Upon review of the cost estimate and supporting**

1 documentation, the NRC recommended TLG's "methodology" for its level of detail
2 and comprehension, to another utility in the process of preparing a decommissioning
3 estimate. TLG was also selected by the Long Island Lighting Company, and later by
4 the Long Island Power Authority, and the Sacramento Municipal Utility District to
5 develop site-specific cost estimates for inclusion in the decommissioning plans for
6 the Shoreham Nuclear Station and the Rancho Seco Nuclear Generating Station,
7 respectively. TLG also worked with Yankee Atomic Electric Company, Portland
8 General Electric and Southern California Edison to develop the cost for decommis-
9 sioning the Yankee Rowe Plant, Trojan Nuclear Plant, and San Onofre Nuclear
10 Generating Station, respectively. Since these documents (plans) required NRC
11 approval, these utilities have relied upon TLG cost studies because of TLG's experi-
12 ence and reputation in nuclear plant decommissioning and their acceptance with the
13 NRC.

14
15 **Q. Are There Any Regulations Or Codes Applicable To Dismantling?**

16 **A.** Yes. The Building Officials & Code Administrators (BOCA) National Building Code,
17 widely adopted by most states, including Pennsylvania, requires that retired
18 structures may not be left in an unsafe condition. Specifically, Section 120.1, "Right
19 to Deem Unsafe," states:

20 *All buildings or structures that are or hereafter shall become*
21 *unsafe, unsanitary or deficient in adequate means of egress*
22 *facilities, or which constitute a fire hazard, or are otherwise*
23 *dangerous to human life or the public welfare, or which*
24 *involve illegal or improper use, occupancy or maintenance,*
25 *shall be deemed unsafe buildings or structures. All unsafe*
26 *structures shall be taken down and removed or made safe*
27 *and secure, as the code official deems necessary and as*
28 *provided for in this section. A vacant building, unguarded or*

1 *open at door or window shall be deemed a fire hazard and*
2 *unsafe within the meaning of this code.*

3
4 (Emphasis Added)

5 A retired power plant fits this definition of an unsafe structure which must be taken
6 down and removed or made safe and secure.

7
8 **Q. Are There Any Federal Regulations Applicable to Nuclear Plant**
9 **Decommissioning?**

10 A. Yes. The NRC published the Final Rule entitled "General Requirements for
11 Decommissioning Nuclear Facilities" in the Federal Register of June 27, 1988 (53
12 Fed. Reg. 24018) to establish technical and financial criteria for decommissioning
13 licensed facilities. The decommissioning cost estimate prepared for Susquehanna
14 SES fully satisfies the requirements set forth in this regulation.

15
16 **Q. What Type Of Costs Are Analyzed In A Decommissioning Study?**

17 A. There are three types of costs included and analyzed in a dismantling study:
18 activity-dependent costs, period-dependent costs and collateral costs. Activity-
19 dependent costs are those associated with the physical work of removing piping,
20 components and structures and transporting and disposing of the same. These
21 costs represent labor, materials and special services (subcontracted) costs
22 associated with the work crews activities (hence, activity-dependent costs). The
23 summation of the durations to perform these activities when properly sequenced
24 provides the overall schedule for the project.

25

1 Period-dependent costs are those associated with the management staff costs
2 which are necessary to provide technical and administrative direction to the project.
3 These management costs must continue for the duration of the project. The project
4 is divided into three periods: 1) Engineering Planning and Preparations; 2)
5 Dismantling; and 3) Site Restoration. The management staff size is adjusted to
6 reflect the crew size and work activities in each period. Accordingly, these staff
7 costs are period-dependent.

8
9 Collateral costs are all those costs which are neither activity- nor period-dependent.
10 They include insurance, taxes, permits, large equipment purchases and special
11 tools.

12
13 **Q. What Are The Major Differences Between Nuclear And Fossil Power Plants?**

14 **A. The major difference is the radioactivity inherent in nuclear power plants. Removal**
15 **of radioactively contaminated piping, components and structures from a nuclear**
16 **plant is more difficult and costly than for comparable items at a fossil plant. The**
17 **activities of decontaminating, removing, packaging, shipping and burying radioactive**
18 **materials from a nuclear plant require strict radiological controls, special-**
19 **containments and packaging, and licenses for the transport for disposal. There are**
20 **many more opportunities for problems to arise in nuclear plant decommissioning**
21 **than in fossil plants.**

22

1 Fossil plants have no radioactivity, and so dismantling is comparable to reverse
2 construction. There are fewer potential hazards for the worker and so productivity is
3 higher overall than with nuclear plants, and the overall potential for problems is
4 lower.

5
6 **Q. Does Your Experience In The Decommissioning Of Nuclear Power Plants Aid**
7 **In The Conduct Of A Site-Specific Dismantling Study Of A Fossil-Fueled Power**
8 **Plant?**

9 **A.** Yes. The parallelism in approach between nuclear plant decommissioning and fossil
10 plant dismantling enables us to rely on the field experience from nuclear
11 decommissioning to prepare fossil plant studies. In particular, the following major
12 areas of planning and estimating exhibit similar characteristics.

13
14 1. Site Characterization

15 The process and planning for identification of radionuclide contamination
16 composition and extent for nuclear power plants is similar to that required for
17 potentially hazardous materials in fossil-fueled power plants.

18
19 2. Removal of Hazardous Material (Asbestos)

20 Planning and removal of asbestos-containing materials in nuclear and fossil
21 plants is identical.

22

1 3. Sequencing of Work Activities

2 Identification and sequencing of essential (to the decommissioning task) and
3 non-essential systems removal follows the same considerations in both types
4 of plants. Essential systems include electric power, lighting, heating,
5 ventilation and liquid processing systems. For example, power and lightning
6 would be retained as long as possible to avoid bringing in temporary services
7 prematurely.

8
9 4. Management Staff

10 Identification of utility and decommissioning (dismantling) staffing
11 composition and levels follows the same process in both types of units. The
12 specific job functions will differ but the logic is the same. Management staff
13 costs are period-dependent; that is, they are a function of the overall project
14 duration.

15
16 5. Removal of Non-Contaminated Equipment/Structures

17 Removal of non-contaminated piping, components and structures are
18 activity-dependent. The methods for their removal are identical for most of
19 the systems and structures in each type of plant. Piping diameters and
20 lengths are essentially identical (size-for-size plants), and the removal rate
21 will be the same. Clean components, such as feedwater heaters and pumps,
22 condensate pumps, demineralizer systems, etc., in nuclear plants, are the
23 same sizes and types found in fossil plants. Steel and concrete structures

1 are removed in the same manner in both types of plants. Removal of
2 equipment unique to fossil plants, such as coal handling and air cleaning
3 systems, relates to the weight of sub-components, and is accomplished by
4 rigging and segmentation.

5
6 6. Scheduling

7 The scheduling of work activities for either type of plant follows the proven
8 planning techniques of activity precedence networks and critical path
9 management. An activity precedence network is a flow diagram of
10 sequenced activities based upon the priority or "precedence" of completing
11 one or more activities before starting another activity. The critical path is the
12 longest sequence of work activities in a precedence network from project
13 initiation to completion.

14
15 7. Collateral Cost

16 Collateral costs are neither activity-dependent nor period-dependent costs.
17 They include items such as engineering, energy, licenses, permits, and
18 taxes, etc. These items are identical in both types of plants, although
19 specific cost values will differ.

20
21 8. Contingency

22 Contingency, as described more completely later in this testimony, is a cost
23 allowance for field-related problems that are likely to occur. These problems

1 include tool and equipment breakdown, late deliveries of supplies and
2 equipment, and adverse weather. These field problems occur in both
3 nuclear and fossil plant dismantling, although the specific allowances differ in
4 each case.

5
6 9. Field Experience

7 The field experience in both nuclear and fossil plant dismantling for clean
8 equipment is essentially identical. Heavy lifts of components weighing 50 to
9 450 tons are common in both plant types, and the planning and
10 implementation activities are virtually identical.

11
12 In summary, the nuclear plant decommissioning experience is directly applicable to
13 fossil plant dismantling.

14
15 **Q. How Does This Estimating Process Differ From Construction Estimating?**

16 **A.** There is very little difference in the elements of cost between fossil plant dismantling
17 and construction. Both activities must account for labor, materials, equipment,
18 services and collateral costs (as defined earlier). The activities related to
19 construction are similar to those for dismantling. Specifically, construction activities
20 such as rigging components into position and welding connecting piping are
21 comparable to dismantling activities such as cutting connecting piping and rigging
22 components out of the structures. In the case of construction however, the pipe
23 welds must be inspected by non-destructive methods (such as X-Ray examination),

1 and cut out and re-welded if flaws in the weld are identified. This re-work causes
2 schedule delays and incurs additional expense. In the case of dismantling, the pipe
3 need only be cut once. Problems in dismantling occur when plant drawings and
4 specifications do not properly reflect the plant as constructed. This occurs when
5 changes to the plant are made that have not been recorded on the as-built drawings.
6 This can result in additional dismantling costs. However, in general fossil dismantling
7 estimating is comparable to construction cost estimating.

8
9 **Q. Were The Decommissioning Studies Contained In Exhibits TSL 1 and TSL 2**
10 **Prepared Under Your Direction And Supervision?**

11 **A.** Yes. I developed the basic methodology used at TLG to estimate the costs to
12 dismantle both nuclear and fossil-fueled power plants. I trained my engineering and
13 estimating staff in this methodology.

14
15 With respect to the estimates prepared for PP&L, I personally inspected each of the
16 power stations with the TLG staff assigned to this project. This included an
17 inspection of the power blocks, turbine-generators, condensate and feedwater
18 systems, and the fuel handling and pollution control systems. The purpose of these
19 inspections was to familiarize myself and the TLG staff with the site-specific features
20 of each unit so that the drawings and specifications used in the estimate would be
21 better understood at the engineering offices of TLG. During the preparation of the
22 cost estimate details, I provided guidance and interpretation to the TLG staff on how
23 to estimate specific areas of the units. I reviewed the results of each plant cost

1 estimate to ensure the results were reasonable and representative of the features of
2 each unit. Finally, I supervised the preparation of the report summarizing the results
3 of the estimate.
4

5 **Q. What Procedures Were Used For The Decommissioning Studies?**

6 A. The studies were developed using the detailed engineering drawings, together with
7 plant description and physical inventory documents. These drawings and
8 documents were used to identify the general arrangement of each facility and to
9 determine estimates of building concrete volumes, steel quantities, numbers and
10 size of components and degree of site restoration required.
11

12 For the fossil studies, selected reference boiler units were chosen to characterize
13 comparable boilers. The remainder of the site was characterized for each station.
14 The combination of the number of each type of boiler plus the inventory of the
15 remainder of the site provides a complete inventory of the station.
16

17 The TLG staff made site inspections of each plant. The on-site inspections included
18 investigation of the access to remove components, and movement of heavy-
19 equipment (cranes, forklifts, front-end loaders) close to the structure for demolition
20 and removal work.
21

22 Dismantling is a labor-intensive program. Representative labor rates for the local
23 area in which the plant is located and each craft or salaried work group are essential

1 for development of a meaningful site-specific dismantling cost estimate. The TLG
2 studies used typical craft labor rates and utility salary data for the area provided by
3 PP&L. I consider the use of such labor cost information reliable and appropriate for
4 the purposes of the studies.

5
6 **Q. What Methodology Was Used To Prepare The Estimates?**

7 A. The methodology used to develop the cost estimates followed the basic approach
8 presented in the AIF/NESP-036 study report, "Guidelines for Producing Commercial
9 Nuclear Power Plant Decommissioning Cost Estimates," the USDOE
10 "Decommissioning Handbook" and the American Association of Cost Estimators
11 paper "A Methodology for Determining the Cost of Dismantling Fossil-Fueled Electric
12 Power Plants." The basic methodology described in these documents for preparing
13 dismantling estimates is widely accepted by the electric power industry and
14 regulatory commissions throughout the United States and is applicable for nuclear
15 as well as fossil plants.

16
17 **Q. How Was This Methodology Applied To The PP&L Plants?**

18 A. The aforementioned references use a unit cost factor method for estimating
19 decommissioning activity costs to standardize the estimating calculations. Unit cost
20 factors for activities such as concrete removal (\$/cu yd), steel removal (\$/ton), and
21 cutting costs (\$/in) were developed from the labor information provided.
22 Consumable material and equipment rental costs (crane and truck rental, operating
23 costs for heavy equipment, torch cutting gas consumption, etc.) were taken in large

1 part from R.S. Means, "Building Construction Cost Data." The activity-dependent
2 cost for removal, shipping and disposal were estimated using the item quantity (cu
3 yds, tons, inches, etc.) developed from plant drawings and inventory documents.
4 The activity duration critical path derived from such key activities as nuclear steam
5 supply or boiler removal, turbine removal etc., was used to determine the total
6 dismantling program schedule.

7
8 The program schedule is used to determine the period-dependent costs such as
9 program management, administration, field engineering, equipment rental, and
10 security. The salary and hourly rates are typical for personnel associated with
11 period-dependent costs.

12
13 In addition, collateral costs were included for heavy equipment rental or purchase,
14 safety equipment and supplies, energy costs, permits, taxes, and insurance.

15
16 The activity-dependent, period-dependent, and collateral costs were added to
17 develop the total dismantling costs. An average contingency was added to allow for
18 the effect of unpredictable program problems on costs. Such a contingency is
19 appropriate for a project of this size and type. The total dismantling costs plus
20 contingency, less any scrap credit provides the total project cost. One of the primary
21 objectives of every dismantling program is to protect public health and safety. The
22 cost estimate for the dismantling activities includes the necessary planning,
23 engineering and implementation to provide this protection to the public.

1

2 **Q. What Is The Basis For The Contingency?**

3 A. The purpose of the contingency is to allow for the costs of high probability program
4 problems, where the occurrence, duration, and severity cannot be accurately
5 predicted and have not been included in the basic estimate. The inclusion of
6 contingency in cost estimation for both construction and dismantling is well
7 accepted. The American Association of Cost Engineers (AACE) (in their Cost
8 Engineers Notebook) defines contingency as follows:

9

10 *Contingency - specific provision for unforeseeable elements of cost*
11 *within the defined project scope; particularly important where previous*
12 *experience relating estimates and actual costs has shown that*
13 *unforeseeable events which will increase costs are likely to occur.*

14

15

16

Past dismantling and decommissioning experience has shown that these problems
17 are likely to occur and may have a cumulative impact. Fossil-fueled and nuclear
18 power plants share some of the same potential problems leading to the need for
19 contingency in cost estimates. These problem areas include:

20

21

Schedule slippages: leading to crew overtime payments and/or project
22 extensions

23

24

Weather delays: loss of productivity, overtime, slippages

25

26

Labor strikes: loss of productivity, slippages

27

28

Workers injuries: production interruptions, additional safety training,
29 workers compensation claims, possible increased
30 insurance premiums

29

30

31

32

Material shipping: rescheduling of activities, out-of-scope backcharges
33 from subcontractors

32

33

34

1 Independent of our preparation of this estimate for PP&L, R.S. Means, "Building
2 Construction Cost Data," suggests that a 15% contingency factor for conventional
3 construction be used.
4

5 **Q. How Do the Factors You Used Compare To Contingency Factors Adopted By**
6 **Regulatory Commissions For Nuclear Plant Decommissioning?**

7 A. As I discussed earlier, the nuclear contingency is generally not more than 25%. The
8 Federal Energy Regulatory Commission (FERC) adopted a 25% contingency for
9 nuclear power plant decommissioning as reasonable, following the ruling of Judge
10 Liebman in the Middle South Energy/Grand Gulf Case (Docket ER82-616), decision
11 issued February 3, 1984. Numerous state public utility commissions have adopted a
12 25% contingency for nuclear plant decommissioning, as evidenced by an American
13 Gas Association-Edison Electric Institute Depreciation Committee Survey, which
14 showed that at least 21 of 32 utility survey respondents had included a 25%
15 contingency in their estimates. The survey also showed that of the 15 utilities who
16 filed rate cases, 11 had approval to use the 25% contingency for their plant
17 decommissioning studies.
18

19 **Q. For Purposes Of The Estimate, When Did You Assume The Units At Each Site**
20 **Would Be Dismantled?**

21 A. For the fossil studies, we assumed dismantling of each unit would occur upon
22 retirement of the last unit at each site. This approach is reasonable because it
23 would be more difficult and costly to protect the operating units from potential

1 damage when demolishing the retired units. Moreover, the dismantling staff and
2 crew would only have to mobilize and demobilize once for the site instead of each
3 time a unit is retired. Using the same staff and crew would take maximum
4 advantage of the lessons learned as the units are dismantled in sequence.

5 The nuclear units were assumed to shutdown upon the expiration of their operating
6 licenses. Decommissioning activities were coordinated between the two units at
7 Susquehanna SES to the maximum extent possible. Spent fuel from Unit 1 was
8 discharged to the Unit 2 pool enabling decommissioning activities to proceed in the
9 Unit 1 Reactor Building immediately after defueling.

10
11 **Q. How Was Scrap Or Salvage Credit Included In the Overall Estimate?**

12 **A.** Credit for carbon steel, stainless steel and copper scrap was included in the overall
13 fossil estimates based on current published scrap values.

14
15 No credit was included for salvage of any components, as these components will be
16 of an obsolete design by the time these plants are dismantled. The labor cost to
17 recover potentially salvageable materials (valves, pumps, motors, etc.), and to store,
18 protect, package and ship them is not warranted. These materials were considered
19 as scrap.

20
21 No positive value was assumed for the scrap generated in the decommissioning of
22 the nuclear units primarily due to the off-setting expense of the surveying required to
23 verify that material leaving the site has no detectable radionuclide contamination.

1

2 **Q. Please Describe The Process Of Dismantling A Fossil Power Plant And How**
3 **That Process Was Reflected In The PP&L Study.**

4 **A.** Approximately three months prior to final shutdown, engineering and planning would
5 begin on the preparation of the Dismantling Engineering Plan (Plan) and
6 Environmental Report (ER). The Plan describes the status of the facility at
7 shutdown, work to be accomplished, safety analyses associated with each of the
8 major activities, general procedures and sequence to be followed, and final site
9 condition upon completion of all work. Similarly, the ER would evaluate
10 environmental effects to workers and the public, and waste generation effects on the
11 site and environment. These documents would be submitted to the Environmental
12 Protection Agency and other applicable regulatory agencies for review and approval,
13 and authorization to proceed. The sequence of work would be envisioned as
14 follows:

15

16 **Period 1 - Site Preparations** - would begin upon shutdown of the facility, and would
17 involve site preparations to initiate dismantling: Fuel is assumed to have been
18 burned prior to shutdown or transferred to another operating unit.

19

20 **Period 2 - Dismantling Operations** - would begin upon receipt of approval of all
21 regulatory agencies. This phase of the work involves the removal of all components
22 of the boiler, air quality treatment systems (electrostatic precipitators, flue gas
23 desulfurization systems, etc.), fuel handling systems (coal conveyors, crushers, oil

1 storage tanks, etc.), the turbine-generator, condensate and feedwater systems. In
2 general, the boiler will be dismantled in a bottoms-up mode, whereby the lower
3 sections of the boilers will be cut at grade level, and remaining upper sections
4 lowered to grade or scaffolding erected to cut the upper sections of the boiler
5 furnace. This method of dismantling is necessary for the top-hung type of boiler that
6 is supported from the steel structure.

7
8 Care must be taken to ensure sections are removed uniformly from the bottom to
9 avoid any unbalanced load on the steel structure that may cause it to become
10 unstable.

11
12 Steel structures used to support the boiler and turbine-generator components will be
13 dismantled by controlled demolition (by lowering sections to grade by cranes) to
14 prevent injury to workers on lower floors. The steel structures will be dismantled
15 from the top down, essentially reversing the construction sequence.

16
17 Concrete structures such as boiler foundations, floors, turbine-generator pedestals
18 and support buildings will be demolished by conventional wrecking methods. These
19 may include the use of wrecking balls, pneumatically-operated rams on a backhoe,
20 or controlled blasting.

21
22 **Period 3 - Site Restoration** - would involve the re-grading of all areas that were
23 disturbed by the dismantling process. Structures will be removed to three feet below

1 grade to permit re-vegetation of the site, or to eliminate at-grade hazards. Clean
2 rubble would be used on site for fill and additional soil would be used to cover each
3 subgrade structure. The site would be graded and stabilized.
4

5 **Q. Describe The Decommissioning Alternatives Delineated In The NRC Rule For**
6 **Nuclear Utilities.**

7 **A.** The supplemental information to the NRC Rule (53 Fed. Reg. 24022-23) describes
8 three decommissioning alternatives as acceptable: DECON (prompt removal/
9 dismantling), SAFSTOR (mothballing) and, under special circumstances,
10 ENTOMB (entombment). They are defined as follows:
11

12 **DECON** is the alternative in which the equipment, structures, and
13 portions of a facility and site containing radioactive contaminants are
14 removed or decontaminated to a level that permits termination of the
15 license and allows the property to be released for unrestricted use
16 shortly after cessation of operations;
17

18 **SAFSTOR** is the alternative in which the nuclear facility is placed and
19 maintained in a condition that allows the nuclear facility to be safely
20 stored and subsequently decontaminated (deferred decontamination)
21 to levels that permit termination of the license and release for
22 unrestricted use.
23

1 **ENTOMB** is the alternative in which radioactive contaminants are
2 encased in a structurally long-lived material, such as concrete; the
3 entombed structure is appropriately maintained and continued
4 surveillance is carried out until the radioactivity decays to a level
5 permitting termination of the license and unrestricted release of the
6 property.

7
8 It should be noted, however, that the NRC provides that delayed
9 decommissioning following initial mothballing or entombment activities should
10 not exceed 60 years, unless it can be shown necessary to protect public
11 health and safety (10 CFR 50.82 (b) (1)). This rule discourages the use of
12 the ENTOMB alternative unless specific advantages can be shown (see 53
13 Fed. Reg. 24023-24). However, both the DECON and SAFSTOR alternatives
14 are considered reasonable options for decommissioning Susquehanna SES.

15
16 **Q. What Are Your Recommendations Regarding The Alternative Selection?**

17 **A. I recommend that, for planning purposes, the decommissioning cost funding be**
18 **based upon removal of Susquehanna SES using the DECON alternative. This**
19 **alternative provides the most reasonable means for terminating the license for the**
20 **site in the shortest possible time. Furthermore, this alternative avoids the long-term**
21 **costs and commitments associated with the maintenance, surveillance and security**
22 **requirements of the conventional delayed dismantling alternatives.**

1 The recommended alternative also allows use of the plant's knowledgeable current
2 operating staff, a valuable asset to a well-managed, efficient decommissioning
3 program. All equipment needed to support decommissioning operations such as
4 cranes, ventilation systems and radwaste processing equipment would be fully
5 operational. In addition, the site would be available for other use in the near term,
6 with the exception of the area immediately surrounding the plant's fuel storage
7 facility.

8
9 **Q. Would You Describe The Process Of Decommissioning A Nuclear Power**
10 **Reactor Utilizing The DECON Alternative?**

11 **A.** Yes. In accordance with the NRC rule (10 CFR 50.75(f)), a licensee of a nuclear
12 power reactor is required, at or about five years prior to the projected end of
13 operation, to submit to the NRC a preliminary decommissioning plan. The prelimi-
14 nary plan is to contain a cost estimate for decommissioning and an up-to-date
15 assessment of the major technical factors that could affect planning for decommis-
16 sioning. This NRC rule requires the following factors, among others, to be
17 considered in the plan:

- 18
19 1) Major technical actions necessary to carry out decommis-
20 sioning safely;
21 2) The current status with regard to disposal of high-level and
22 low-level radioactive waste;
23 3) Radioactive release criteria; and
24 4) Adjustments to funding levels to demonstrate a reasonable
25 level of assurance that funds will be available when needed for
26 decommissioning.
27

1 Approximately two years prior to final shutdown, engineering and planning would
2 begin on the preparation of the proposed decommissioning plan (the "Plan") with a
3 corresponding Environmental Report. In accordance with 10 CFR 50.82 (b), the
4 Plan must describe:

- 5 1) the decommissioning alternative chosen and major activities
6 involved;
- 7 2) controls and limits on procedures and equipment to protect
8 occupational and public health and safety;
- 9 3) the planned final radiation survey;
- 10 4) an updated cost estimate with a comparison to present funds
11 set aside and a plan for assuring the availability of adequate
12 funds for completion of decommissioning; and
- 13 5) technical specifications, quality assurance provisions and
14 physical security plan provisions in place during decommis-
15 sioning.
- 16

17 The Plan must be submitted to the NRC for review and approval no later than one
18 year prior to expiration of the NRC operating license, pursuant to 10 CFR §50.82 (a).

19
20 Three phases are involved in the DECON alternative as follows:

21
22 **Period 1 - Site Preparations** - This period begins upon shutdown of the facility, and
23 involves site preparations to initiate decommissioning. The reactor would be
24 defueled with the fuel placed in the spent fuel storage pool until it is cooled sufficient-
25 ly to be transferred to DOE or an alternative storage facility. As noted earlier,
26 transportation and disposal of spent fuel at a DOE facility is not considered part of
27 decommissioning and no costs associated with these activities are included in the
28 decommissioning estimates. (These expenses have been funded by the owner
29 throughout the plant's operating life, payable to DOE for future rendering of these

1 services.) However, the impact on the decommissioning schedule due to the
2 presence of such material on-site has been addressed in the study through the
3 schedule. Wastes remaining from plant operations would be removed from the site
4 and all systems nonessential to decommissioning would be isolated and drained.

5
6 **Period 2 - Decommissioning Operations** - This period begins upon approval of the
7 decommissioning plan from the NRC and the mobilization of the decontamination
8 and dismantling workforce. This phase of the work involves the removal of radioac-
9 tivity from the site and concludes with termination of the NRC operating license. The
10 activities in this period include selective decontamination of contaminated systems,
11 e.g., using aggressive chemical solvents to dissolve corrosion films holding
12 radionuclides, thereby reducing radiation levels.

13
14 While effective, the on-site decontamination processes are not expected to reduce
15 residual radioactivity to the levels necessary to release the material as clean scrap.
16 Therefore, all contaminated components will have to be removed for controlled buri-
17 al. However, decontamination will reduce personnel exposure and permit workers to
18 operate in the immediate vicinity of most components, cutting and removing them for
19 controlled disposition at a low-level radioactive waste burial facility.

20
21 *Contaminated piping to and from major components will be cut and removed.*
22 Selected major components such as the steam generators, reactor recirculation
23 pumps, heat exchangers, small tanks, etc., will then be removed intact and sealed

1 so that they may be shipped as their own containers for disposal. Smaller
2 components, such as sampling system pumps, filters, filter housings, strainers, etc.,
3 will be loaded into containers and shipped for burial.

4
5 The reactor vessel and its internals will be segmented and remotely loaded into steel
6 liners for transport to the burial facility in heavily shielded shipping casks. The
7 reactor vessel and internals will have sufficiently high radiation levels to require all
8 cutting to be done underwater or behind heavy shields, using cutting torches
9 operated by remote control to reduce radiation exposure to the workers.

10
11 Concrete immediately surrounding the reactor vessel is expected to be radioactive
12 and will be removed by controlled blasting. This blasting process is well-developed,
13 safe and is the most cost effective way to remove the heavily-reinforced concrete
14 from the structure.

15
16 The surfaces of sections of interior floors within areas of the Reactor Building and
17 other buildings in the power block are expected to be contaminated from exposure to
18 contaminated air/water as a result of plant operations. This contamination will be
19 removed by scarification (surface removal) so that the remaining surface will be
20 clean and will not require costly controlled burial.

21
22 All contaminated process equipment, pipe hangers, supports and electrical
23 components will be removed and disposed of by controlled burial.

1
2 Finally, an extensive radiation survey will be performed to ensure all radioactivity
3 above the levels specified by the NRC has been removed from the site. With NRC
4 confirmation, the facilities may be released for unrestricted access.

5
6 **Period 3 - Site Restoration** - This period begins once license termination activities
7 have concluded and involves the demolition of all remaining structures, typically to a
8 depth of three feet below grade. Clean rubble would be used on-site for fill and
9 additional soil would be used to cover each subgrade structure.

10
11 **Q. Does The Estimated Cost of Decommissioning Include An Allowance For**
12 **Disposal of High-Level Radioactive Waste?**

13 **A.** No. It is important to note that, although decommissioning of a site cannot be
14 complete without the removal of all spent fuel and source material, the disposition of
15 high-level waste is outside the scope of decommissioning. In accordance with the
16 Nuclear Waste Policy Act of 1982 (Public Law 94-425), the DOE is required by law
17 to enter into contracts with owners and/or generators of spent fuel, pursuant to
18 which the DOE is contractually responsible for final disposition of spent fuel as high-
19 level nuclear waste. To cover the cost of spent fuel disposition, the DOE assesses
20 the facility operator 1 mill/Kwh based on net electrical generation. Therefore, the
21 cost of disposal of spent fuel is accounted for separately and is specifically excluded
22 from the decommissioning cost estimates.

1 **Q. Does the Presence of Spent Fuel On-Site, Following Plant Shutdown, Affect**
2 **The Decommissioning Process?**

3 **A. Yes. Although the study does not address the removal or disposal of spent fuel from**
4 **the Susquehanna SES site, it does consider the constraint that the presence of**
5 **spent fuel on the site can impose on other decommissioning activities. In particular,**
6 **the decommissioning scheduling performed in support of the Susquehanna SES**
7 **study recognizes a DOE minimum cooling prerequisite for transfer of five years. As**
8 **such, this requirement for spent fuel cooling and handling systems and facilities at**
9 **the plant will necessarily delay the final release of the site for alternative/unrestricted**
10 **use. This delay is reflected in the increased cost of the period-dependent activities.**
11 **To the extent possible, the decommissioning estimate was structured around the**
12 **spent fuel area of the plant and its availability for decontamination, such that delays**
13 **in decommissioning other portions of the facility could be minimized. Decommis-**
14 **sioning would proceed on the surrounding facilities and non-essential systems**
15 **during the five year transfer period.**

16
17 **Q. Does The Process Of Decommissioning Extend Beyond The Removal Of**
18 **Contaminated and Activated Material From The Site?**

19 **A. Yes. There are additional activities, beyond the removal of contaminated material,**
20 **that will be undertaken in the process of releasing the site for alternative use. This**
21 **work includes costs for the remaining dismantling and grading operations.**

22

1 **Q. Why Is Dismantling After A Power Plant Is Taken Out Of Service The**
2 **Appropriate Alternative?**

3 A. Guarding retired power plants indefinitely is costly, requiring either a full-time guard
4 force, or intrusion detection devices and alarms to local law enforcement agencies,
5 and general building maintenance to maintain the structures in a safe condition.
6 Furthermore, prompt dismantling of retired power plants makes the site available for
7 alternative uses at the earliest possible time.

8
9 **Q. Is Reuse Of The Site For A Power Plant A Potential Use?**

10 A. Yes.

11

12 **Q. If The Site Could Be Reused, Why Couldn't The Power Plant Components Be**
13 **Reused In Repowering?**

14 A. The designs of new generation power plants are not likely to use the same size and
15 configuration of components, nor require the same type of building enclosures.
16 Optimum facility design will be sized to match the megawatt size of a replacement
17 power plant, if any, either larger or smaller. For example, new combustion turbine-
18 generators are modular, self-contained units that don't need a building enclosure.
19 Combined cycle units may require larger turbine buildings to enclose the waste heat
20 steam generators which supply steam to the turbine. The cost to renovate older
21 buildings and bring them to current safety code standards, combined with the less-
22 than-optimum facility design makes reuse of the existing buildings an unlikely
23 scenario. Furthermore, the existing components are likely to be of an obsolete

1 design, more costly to operate and maintain and may not be compatible with new
2 instrumentation and control systems.

3
4 **Q. Please Describe The Cost Components Of Site Restoration.**

5 A. The largest component of the site restoration costs is for dismantling the decontami-
6 nated structures. Next largest are costs incurred to remove certain non-contaminat-
7 ed systems and components. This work must be accomplished to provide access to
8 all areas of the plant for the radiation surveys required by the NRC prior to license
9 termination and release of the site for another use.

10
11 **Q. Why Is It Necessary To Dismantle The Remaining Structures At The Site?**

12 A. Efficient removal of the contaminated materials and verification that the radionuclide
13 concentrations are below the stringent NRC limits will require substantial damage to
14 many of the structures. Blasting, coring, drilling, scarification (surface removal), and
15 the other decontamination work will damage power block structures including the
16 Reactor, Radwaste and Turbine Buildings.

17
18 Verifying that subsurface radionuclide concentrations meet NRC site release-
19 requirements may require removal of grade slabs and lower floors, potentially
20 weakening footings and structural supports. This will be necessary for those
21 facilities and plant areas where historical records indicate the potential of
22 radionuclides having been present in the soil, where inventory losses have been

1 recorded, or where required to confirm that subsurface process and drain lines did
2 not leak over the operating life of the units.

3
4 It is also important to remember that the Susquehanna SES structures were custom
5 designed and built to support a specific nuclear unit that went into service in the
6 early 1980's. They would most likely be an impediment rather than a benefit to any
7 potential future plant, if one were ever to be constructed at the site. Moreover, the
8 facility's infrastructure degrades without continual maintenance. Unless the site is
9 redeveloped shortly after release of its NRC license, the value in reusing plant facili-
10 ties quickly diminishes. For example, following NASA's development of TVA's aban-
11 doned Yellow Creek nuclear power plant for its Advanced Solid Rocket Motor
12 program, a Lockheed spokesman was quoted as stating: "[t]he abandoned nuclear
13 power plant contributed little to the NASA project. Some of the power and water
14 infrastructure was used but had to be reconstructed after eight years of neglect."

15
16 Dismantling is clearly the most appropriate and cost-effective option and should
17 serve as the foundation for the decommissioning cost estimate. It is unreasonable
18 to anticipate that these structures would be repaired and preserved after the
19 radiological contamination is removed.

20
21 **Q. Is it Possible That Future Changes In Technology And Regulation Could Affect**
22 **The Dismantling Costs?**

1 A. Yes. The TLG cost estimates prepared for these plants are based on state-of-the-
2 art technology. No allowance was made for potential changes in technology and
3 regulations. It is my recommendation that PP&L thoroughly review these estimates
4 periodically and revise them, if necessary, to account for cost increases or
5 decreases as influenced by future changes in technology and regulations. It should
6 be noted that contingency, as used in the estimate, is restricted to cover
7 uncertainties within the decommissioning process and is not intended as price
8 protection.

9
10 **Q. What Is The Feasibility Of The Decommissioning Premise?**

11 A. There is extensive experience in the United States and in other countries for the
12 complete dismantling of fossil power plants and related industrial facilities. This
13 experience includes the dismantling of chemical refineries, steel mills, and nuclear
14 power plants (with their associated non-nuclear turbine-generator portions). This
15 directly related experience shows that the PP&L plants can be completely
16 dismantled safely.

17
18 Between 1960 and 1991, 92 licensed nuclear reactors were designated for, or were
19 in the process of being, decommissioned in the United States. Of these, thirteen
20 were nuclear power plants, four were demonstration nuclear power plants, eight
21 were licensed test reactors, and 49 were research reactors. The remaining 18 were
22 critical (non-power producing) reactors and/or critical facilities decommissioned or
23 scheduled to be decommissioned. They have been or will be totally dismantled, with

1 their licenses terminated. Many other reactor facilities in Europe, Japan and Canada
2 have been successfully decommissioned using demonstrated techniques. France
3 has decommissioned 13 reactors, Germany 6, Italy 8, Japan 7, Switzerland 2,
4 United Kingdom 5 and Canada 2.

5
6 The International Atomic Energy Agency (IAEA) indicates that 147 decommissioning
7 programs have been undertaken or completed by its member countries. However,
8 no breakdown is available for the various types of reactors from the IAEA.

9
10 The feasibility of decommissioning in the U.S. is well documented in the successful
11 dismantling of Shippingport Atomic Power Station, Elk River Reactor, Walter Reed
12 Army Research Reactor, Ames Laboratory Reactor and Sodium Reactor Experiment
13 (SRE) Facilities. Currently decommissioning is underway at the Ft. St. Vrain 330
14 MWe high temperature gas-cooled reactor as well as near completion at the 819
15 MWe Shoreham Nuclear Plant. Pre-decommissioning activities (early component
16 removal) are underway at the shutdown Yankee Rowe unit and in the planning
17 stages for the 1130 MWe Trojan Nuclear Plant. Internationally, the decommis-
18 sioning programs underway in England (Windscale Reactor), Germany
19 (Gundremmingen), and Japan (Japan Power Demonstration Reactor) are further
20 evidence of demonstrated technology. The basic activities of cutting pipe,
21 segmenting vessels, demolishing reinforced concrete and decontaminating
22 contaminated systems and structures are independent of the size of the structure or
23 megawatt rating of the plant on a unit cost factor basis (\$/cut, \$/cubic yard, etc.).

1 For example, a contaminated 12-inch diameter pipe in a 3000 MWt plant takes as
2 long to cut as it does in a 58 MWt plant, although the number of lengths of pipe to be
3 cut will be greater in the larger plant.
4

5 The major activities include removal and burial of contaminated piping and
6 components using conventional power hack saws, oxyacetylene torches or plasma
7 arc torches within a contamination control tent. Removal of the reactor vessel and
8 internals can be accomplished using an arc-gouging fuel gas torch or an arc saw
9 which is currently capable of cutting through carbon and stainless steel up to 12
10 inches thick (current vessels are less than 10 inches thick).
11

12 The remote manipulator technology required to cut the reactor vessel and internals
13 was developed by Oak Ridge National Laboratory for the Elk River Reactor
14 dismantling. This technology uses the plasma arc torch for cutting. This same tool
15 was used in the SRE vessel cutting activity.
16

17 Many of the tools and techniques used in decommissioning have been used in
18 operating plants for maintenance and equipment replacement programs. Such
19 technology, therefore, is not unique and further shows the feasibility of
20 decommissioning.
21

22 Controlled blasting concrete demolition methods are well developed. They have
23 been used in the mining industry, and were successfully demonstrated in the

1 demolition of the Elk River Reactor. Heavily reinforced, eight foot thick concrete
2 sections of the biological shield were safely removed with explosives, without
3 damaging or interfering with the operation of adjacent operating power generating
4 units. The successful application of these decommissioning techniques in both small
5 and large nuclear power plants demonstrates assurance of decommissioning
6 feasibility. Both the technology and the methodology for efficient decommissioning
7 are available and fully tested.

8
9 **Q. Does The NRC's Rule On Decommissioning, "General Requirements For**
10 **Decommissioning Nuclear Facilities," As Published In The Federal Register**
11 **On June 27, 1988, Have Any Effect On Your Decommissioning Cost Estimate**
12 **For Susquehanna SES?**

13 **A.** Yes. The rule, as published, requires licensees to assure the availability of funds by
14 submitting a decommissioning funding plan to the NRC. PP&L has provided an
15 initial submittal in 1990, which will be updated with the preparation of the preliminary
16 decommissioning plan, 5 years prior to the cessation of plant operations. The rule
17 also requires utilities to perform a periodic review of the funding plan over the life of
18 the facility. TLG's site-specific cost estimate and decommissioning alternatives are
19 formulated within the framework of the NRC's rule.

20
21 **Q. Is It Necessary To Select A Specific Decommissioning Method At This Time?**

22 **A.** No. The actual method or combination of methods selected to decommission
23 Susquehanna SES should be based on a detailed economic, engineering and

1 environmental evaluation of the alternatives considering the site and surroundings at
2 the time of decommissioning and reflecting the latest experience in the decommis-
3 sioning of similar nuclear power facilities. However, for financial planning purposes
4 the decommissioning cost funding should be based upon the DECON methodology.

5

6 **Q. Does This Conclude Your Prepared Direct Testimony?**

7 **A. Yes.**

Attachment 2

DECOMMISSIONING OPTION SUMMARY

UTILITY	PLANTS	PLANT DESIGN	FILED OPTION	BASE YEAR (#)	DECON COST ESTIMATE (\$Millions)	SAPSTOR COST ESTIMATE (\$Millions)	ENTOMB COST ESTIMATE (\$Millions)
ALABAMA POWER	FARLEY 1	PWR	DECON	1989	162.318	n/a	n/a
	FARLEY 2	PWR	DECON	1989	217.544	n/a	n/a
	FARLEY 1	PWR	DECON	1993	275.78	n/a	n/a
	FARLEY 2	PWR	DECON	1993	302.008	n/a	n/a
ARIZONA PUBLIC SERVICE	PALO VERDE 1	PWR	DECON	1989	249.459	n/a	n/a
	PALO VERDE 2	PWR	DECON	1989	247.317	n/a	n/a
	PALO VERDE 3	PWR	DECON	1989	262.998	n/a	n/a
	PALO VERDE 1	PWR	DECON	1992	442.149	n/a	n/a
	PALO VERDE 2	PWR	DECON	1992	435.047	n/a	n/a
	PALO VERDE 3	PWR	DECON	1992	459.483	n/a	n/a
CAROLINA POWER & LIGHT	BRUNSWICK 1	BWR	DECON	1989	218.367	257.832	n/a
	BRUNSWICK 2	BWR	DECON	1989	198.89	232.832	n/a
MAINE YANKEE	MAINE YANKEE	PWR	DECON	1993	318.823	355.855	n/a
CONNECTICUT YANKEE	CONNECTICUT YANKEE	PWR	DECON	1992	309.113	508.52	397.701
CONSUMERS POWER	BIG ROCK POINT	BWR	DECON	1989	164.326	289.992	n/a
	PALISADES	PWR	DECON	1989	315.971	518.046	n/a
DUKE POWER	OCONEE 1	PWR	DECON	1990	153.326	209.827	n/a
	OCONEE 2	PWR	DECON	1990	146.845	251.275	n/a
	OCONEE 3	PWR	DECON	1990	247.538	299.469	n/a
	CATAWBA 1	PWR	DECON	1990	158.496	226.896	n/a
	CATAWBA 2	PWR	DECON	1990	240.815	319.445	n/a
	McGUIRE 1	PWR	DECON	1990	148.909	213.81	n/a
	McGUIRE 2	PWR	DECON	1990	208.802	273.368	n/a
	EL PASO ELECTRIC	PALO VERDE 1	PWR	DECON	1993	357.542	n/a
	PALO VERDE 2	PWR	DECON	1993	340.542	n/a	n/a
	PALO VERDE 3	PWR	DECON	1993	700.872	n/a	n/a
ENERGY OPERATIONS	WATERFORD 3	PWR	DECON	1993	320.126	n/a	n/a
	GRAND GULF	BWR	DECON	1993	406.508	n/a	n/a
FLORIDA POWER CORP.	CRYSTAL RIVER 3	PWR	DECON	1981	293.136	n/a	n/a
		DECON	1994	381.034	n/a	n/a	
FLORIDA POWER & LIGHT	ST. LUCIE 1	PWR	DECON	1994	287.579	402.834	n/a
	ST. LUCIE 2	PWR	DECON	1994	307.272	419.034	n/a
	TURKEY POINT 3	PWR	DECON	1994	248.748	377.812	n/a
	TURKEY POINT 4	PWR	DECON	1994	299.206	417.437	n/a
GEORGIA POWER COMPANY	VOGTLE 1	PWR	DECON	1990	283.987	n/a	n/a
	VOGTLE 2	PWR	DECON	1990	329.228	n/a	n/a
	HATCH 1	BWR	DECON	1990	235.821	n/a	n/a
	HATCH 2	BWR	DECON	1990	311.283	n/a	n/a
GULF STATES UTILITIES CO.	RIVER BEND	BWR	DECON	1990	382.549	n/a	n/a
HOUSTON LIGHTING & POWE	SOUTH TEXAS PROJE	PWR	DECON	1989	217.19	258.788	277.899
		PWR	DECON	1989	245.971	287.314	301.432
		PWR	DECON	1994	406.479	510.942	n/a
		PWR	DECON	1994	656.754	895.872	n/a
IOWA ELECTRIC L&P	DUANE ARNOLD	BWR	DECON	1989	295.721	n/a	n/a
		DECON	1993	318.115	n/a	n/a	
NORTH ATLANTIC ENERGY C	SEABROOK 1	PWR	DECON	1991	323.624	413.524	n/a
		DECON	1993	345.158	n/a	n/a	
		DECON	1994	380.938	n/a	n/a	
NORTHEAST UTILITIES	MILLSTONE 1	BWR	DECON	1992	350.894	394.804	422.264
	MILLSTONE 2	PWR	DECON	1992	281.798	308.407	345.281
	MILLSTONE 3	PWR	DECON	1992	383.175	366.028	511.549
NORTHERN STATES POWER	MONTICELLO	BWR	DECON	1990	334.083	n/a	n/a
	MONTICELLO	BWR	DECON	1993	298.518	n/a	n/a

DECOMMISSIONING OPTION SUMMARY

UTILITY	PLANTS	PLANT DESIGN	FILED OPTION	BASE YEAR	DECON COST ESTIMATE (\$Millions)	SAFSTOR COST ESTIMATE (\$Millions)	ENTOMIS COST ESTIMATE (\$Millions)
	FRARIE ISLAND 1	PWR	DECON	1990	140.41	n/a	n/a
	FRARIE ISLAND 2	PWR	DECON	1990	212.306	n/a	n/a
	FRARIE ISLAND 1	PWR	DECON	1993	207.179	n/a	n/a
	FRARIE ISLAND 2	PWR	DECON	1993	245.127	n/a	n/a
NPPD	COOPER	BWR	DECON	1988	316.626	n/a	n/a
			DECON	1993	424.336	453.36	n/a
PACIFIC GAS & ELECTRIC	HUMBOLT BAY 3	BWR	SAFSTOR	1991	n/a	79.214	n/a
			SAFSTOR	1994	n/a	102.523	n/a
	DIABLO CANYON 1	PWR	DECON	1991	327.625	398.4	n/a
	DIABLO CANYON 2	PWR	DECON	1991	385.181	431.712	n/a
	DIABLO CANYON 1	PWR	DECON	1994	340.766	349.551	n/a
	DIABLO CANYON 2	PWR	DECON	1994	497.96	592.599	n/a
PENNSYLVANIA POWER & LI	SUSQUEHANNA 1	BWR	DECON	1993	350.524	406.561	n/a
	SUSQUEHANNA 2	BWR	DECON	1993	453.735	632.396	n/a
PUBLIC SERVICE ELECTRIC &	PEACH BOTTOM 2	BWR	DECON	1990	254.006	316.736	n/a
	PEACH BOTTOM 3	BWR	DECON	1990	314.806	358.036	n/a
	HOPE CREEK 1	BWR	DECON	1990	437.316	515.433	n/a
	SALEM 1	PWR	DECON	1990	183.011	266.767	n/a
	SALEM 2	PWR	DECON	1990	273.143	319.626	n/a
ROCHESTER GAS & ELECTRI	GINNA	PWR	DECON	1989	184.262	n/a	n/a
SMUD	RANCHO SECO	PWR	SAFSTOR	1991	n/a	326	n/a
SOUTH CAROLINA E&G	V.C. SUMMER	PWR	DECON	1990	226.796	n/a	n/a
SOUTHERN CAL. EDISON	SAN ONOFRE 1	PWR	SAFSTOR	1990	n/a	211.413	n/a
	SAN ONOFRE 2	PWR	DECON	1990	275.765	n/a	n/a
	SAN ONOFRE 3	PWR	DECON	1990	449.529	n/a	n/a
	SAN ONOFRE 1	PWR	SAFSTOR	1993	n/a	270.905	n/a
	SAN ONOFRE 2	PWR	DECON	1993	605.364	n/a	n/a
	SAN ONOFRE 3	PWR	DECON	1993	732.106	n/a	n/a
TEXAS UTILITIES	COMANCHE PEAK 1	PWR	DECON	1992	267.717	571.814	n/a
	COMANCHE PEAK 2	PWR	DECON	1992	382.603	623.61	n/a
UNION ELECTRIC	CALLAWAY	PWR	DECON	1990	335.556	512.525	580.453
			DECON	1993	371.512	616.319	542.246
VERMONT YANKEE NUCLEAR	VERMONT YANKEE	BWR	DECON	1993	312.736	318.905	n/a
VIRGINIA POWER	NORTH ANNA 1	PWR	DECON	1990	231.631	269.762/337.7 *	n/a
	NORTH ANNA 2	PWR	DECON	1990	236.346	254.276/303.7 *	n/a
	SURRY 1	PWR	DECON	1990	182.692	237.93/305.72 *	n/a
	SURRY 2	PWR	DECON	1990	241.9	258.416/306.4 *	n/a
WISCONSIN PUBLIC SERVICE	KEWAUNEE	PWR	DECON	1992	342.039	n/a	n/a
WOLF CREEK NUCLEAR OPER	WOLF CREEK	PWR	DECON	1993	369.79	605.734	556.846
WPPSS(Battle for NRC)	WNP-2	BWR	DECON	1987	281.21	319.922	315.796
YANKEE ATOMIC ELECTRIC C	YANKEE ROWE	PWR	SAFSTOR	1992	232.135	247.117	n/a
		PWR	SAFSTOR	1994	n/a	370.071	n/a

Notes: n/a - not available, i.e., decommissioning alternative was not evaluated
 * - SAFSTOR alternatives prepared for two different dormancy durations

J. R. Schadt

**Pennsylvania Power & Light Company
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- Q.132: Please state the extent to which the consultant, and/or members of his firm, were consulted by Company employees as the latter undertook the preparation of the materials filed in the instant case.
- A.132. The consultant did not provide any advice regarding the preparation of the instant case.

J. R. Schadt

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Q.133. Please identify, and then provide, each document which the consultant, and/or members of his firm, provided to Company employees as the latter undertook the preparation of the materials filed in the instant case.

A.133. See the response to Question 132 of the Interrogatories of the Environmentalists, Set 3, Dated May 19, 1997.

J. R. Schadt

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Q.134. Please state the period of time, by the dates, during which the Company's employees undertook the preparation of the nuclear decommissioning portion of the instant case, beginning with the first allocation of assignments. Identify the employees involved in the preparation.

A.134. There was no specific preparation of a "decommissioning portion" of this case. Various Company personnel used existing data, primarily from Docket No. R-00943271, for any calculations used in this case.

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- Q.137. To what extent have any of the owners of Susquehanna collected funds for decommissioning that were not placed into an external trust fund (e.g., that were "collected" prior to the external funding requirement and not subsequently "moved" into an external fund)? If so, please identify the companies and the amounts.
- A.137. There are two owners of Susquehanna--PP&L and Allegheny Electric Cooperative Inc. PP&L has contributed all after-tax decommissioning amounts collected through rates into its external decommissioning trust, including those amounts that were collected from customers and deposited into escrow accounts prior to the establishment of PP&L's decommissioning trust on August 24, 1987. The Company does not know if Allegheny Electric Cooperative Inc. has collected funds for decommissioning which were not placed into an external trust fund.

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Q.138. Please first identify and then provide each calculation, workpaper and other documentation supporting the Company's annual decommissioning funding contributions booked to date, including amounts held for transfer to the appropriate fund.

A.138. Attachment 1 provides the requested data.

ATTACHMENT 1

Attachment 1

**PP&L CONTRIBUTIONS TO THE
DECOMMISSIONING TRUST
THROUGH DECEMBER 31, 1996
(millions of dollars)**

Decommissioning Revenues Collected from All Customers

1983 through 1996	\$ 87.6
December 1996 Revenue Deposited in January 1997	<u>(1.0)</u>
Total	<u>\$ 86.6</u>
Contributions to the Trust from Escrow Account	\$ 8.8
Cash	<u>76.0</u>
	84.8
Deferred Income Tax Asset	<u>1.8</u>
Total	<u>\$ 86.6</u>

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Q.140. Please first identify and then provide complete documentation of the projected 1998 decommissioning fund balances for Susquehanna.

A.140. Attachment 1 sets forth the projected balances at December 31, 1998 for each unit at Susquehanna. Added to the trust assets at December 31, 1996 are projected contributions to be made by the Company in 1997 and 1998 and projected net earnings of the trust in 1997 and 1998.

ESTIMATED TRUST ASSETS

(thousands of dollars)

	<u>Balance</u> <u>12/31/96</u>	1997		<u>Balance</u> <u>12/31/97</u>	1998		<u>Balance</u> <u>12/31/98</u>
		<u>Contributions</u>	<u>Earnings</u>		<u>Contributions</u>	<u>Earnings</u>	
Susquehanna #1	\$ 71,061	\$ 4,850	\$ 5,512	\$ 81,423	\$ 4,850	\$ 6,289	\$ 92,562
Susquehanna #2	56,396	6,831	4,486	67,713	6,831	5,335	79,879
	<u>\$ 127,457</u>	<u>\$ 11,681</u>	<u>\$ 9,998</u>	<u>\$ 149,136</u>	<u>\$ 11,681</u>	<u>\$ 11,624</u>	<u>\$ 172,441</u>

M. J. Berish
J. M. Kleha

**Pennsylvania Power & Light Company
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- Q.141. Please first identify and then provide all documentation of the Company's contemplated treatment of proceeds from the proposed stranded cost recovery, and, in particular, the extent to which the Company proposes to place funds in the external decommissioning trust funds, and on what schedule.
- A.141. The Company proposes to continue its existing approach of contributing to the trust on a monthly basis the after-tax funds that will be collected from ratepayers and specifically identified as applicable to nuclear decommissioning.

M. J. Berish
J. M. Kleha

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- Q.142. What commitment has the Company made, or will it make, with regard to placing proceeds from the proposed stranded cost recovery into the external decommissioning trust funds? Please explain. Please identify and then provide each of those documents that addresses the Company's intention.
- A.142. See the response to Question 141 of Interrogatories of the Environmentalists, Set 3, Dated May 19, 1997.

M. J. Berish
J. M. Kleha

**Pennsylvania Power & Light Company
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Q.143. It is often said that one cannot "paint dollars" from revenues collected under a rate order's authorization to expenditures made out of a utility's general fund. Please explain in detail how the proceeds from the requested nuclear decommissioning stranded cost recovery would flow. Please provide a chart or other graphic to illustrate your description.

A.143. The process is similar to that being used currently for nuclear decommissioning costs recovered through rates from customers. PP&L's total allowed jurisdictional revenue requirements include an amount associated with the recovery of nuclear decommissioning costs. As revenues are collected from customers, an amount equal to the nuclear decommissioning costs allowed in the Company's most recent base rate case is deposited on an after-tax basis into the trust. PP&L does not envision that this process would change for the revenue applicable to nuclear decommissioning recovered as stranded costs.

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- Q.144. Do the Company's decommissioning fund requirements and balances show deficiencies in funding? If so, what are the reasons that there is a deficiency? Please explain.
- A.144. See Attachment 1 to the response to Question 139 of Interrogatories of the Environmentalists, Set 3, Dated May 19, 1997.

Not Identified

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- Q.146. Do the decommissioning cost estimates of the consultant's most recent study assume that the units are operated to the end of their license periods, that they are shut down in 1998, or something else? Please explain.
- A.146. The respective decommissioning study assumes that the two units operate to the end of their license periods.

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Q.147. Please state the Company's presently anticipated shut-down dates and decommissioning periods for each of its nuclear units.

A.147. PP&L expects to run both units to the end of their 40-year license.

- Unit 1 July 2022
- Unit 2 March 2024

Decommissioning of the site is expected to be complete in the year 2033.

M. J. Berish
J. M. Kleha

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Q.148. How will the funds for decommissioning that are not covered by the current fund balance plus the requested stranded cost recovery be collected (i.e., from whom and on what schedule) and handled (i.e., placed in the external funds)?

A.148. The Company is ultimately responsible to provide the necessary funds to decommission Susquehanna. The Company expects that it would be allowed to recover such funds from ratepayers as a prudent cost of doing business.

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- Q.149. Please explain the Company's position on the appropriate treatment for covering decommissioning costs in the event that Susquehanna were to shut down prior to the end of its operating license and/or in the event that the actual decommissioning cost is higher than anticipated in the Company's last estimate.
- a. Please explain in a narrative.
 - b. As between the Company and its customers, who pays for these costs?
 - c. How does the Company raise the cash necessary for decommissioning if the fund is short? Sell securities?
 - d. First identify and then provide each memorandum, study, analysis and/or other writing that addresses the matters in this request/question and/or its subparts.
- A.149. a.-d. See the response to Question 36 of Interrogatories of the Office of Small Business Advocate, Set 1, Dated May 23, 1997.

M. J. Berish
J. M. Kleha

**Pennsylvania Power & Light Company
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- Q.150. If decommissioning cost estimates were to increase after this case is concluded:
- a. How would those increases be handled with respect to authorization for additional charges, if any, for collection and for placement in the external funds?
 - b. What regulatory activity, if any, would the Company initiate? A case(s) for adjustment of the CTC?
- A.150.
- a. See the response to Question 148 of Interrogatories of the Environmentalists, Set 3, Dated May 19, 1997.
 - b. The Company cannot respond to this question at this time because it does not contain sufficient information and is too speculative.

M. J. Berish
J. R. Schadt

**Pennsylvania Power & Light Company
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Q.152. To what extent would there be a funding shortfall for each of the nuclear units shut down prior to the end of its "estimated service life?" Please identify and then provide the supporting workpapers or other written analysis.

A.152. See the response to Question 36 of Interrogatories of the Office of Small Business Advocate, Set 1, Dated May 22, 1997.

M. J. Berish
J. R. Schadt

**Pennsylvania Power & Light Company
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- Q.153. To what extent, if at all, has the Company addressed collecting required funds for decommissioning after a unit's shutdown prior to the end of its estimated service life? Provide each document discussing the issue.
- A.153. See the response to Question 36 of Interrogatories of the Office of Small Business Advocate, Set 1, Dated May 22, 1997.

**Pennsylvania Power & Light Company
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- Q.154. Do all of the dollars received by the Company to fund decommissioning expense qualify for tax deductibility? If not, please identify the amounts of money and explain why they do not qualify.
- A.154. All amounts collected by the Company through PUC rates for nuclear decommissioning costs are currently tax-deductible. Those amounts collected by the Company through FERC rates are not currently tax-deductible. The tax deduction for contributions to qualified nuclear decommissioning funds is limited to the lesser of a ruling amount issued by the Internal Revenue Service or the amounts included in cost-of-service based customer rates. Currently, about \$69,000 for Unit 1 and \$137,000 for Unit 2 are collected annually through FERC rates and are not tax-deductible because they are in excess of the respective ruling amounts.

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Q.163. To what extent would the Company be willing to commit to dedicating its post-stranded-cost-recovery nuclear facilities to generating for its retail load? Please state your position with specificity, and please identify and then provide the documents embodying the policy, if any.

A.163. Upon advise of counsel, Mr. Geneczko understands that Section 2807 of the Electricity Generation Customer Choice and Competition Act provides that in the post-stranded-cost-recovery time period, the electric distribution utility will be required, as "provider of last resort," to obtain electricity from the market. Accordingly, PP&L could not dedicate its nuclear facilities to generating for its retail load.

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- Q.165. Please explain the options examined for the licensee of the Company's Susquehanna entitlements fitting into the Company's affiliated corporate structure after stranded cost recovery. Please provide a flow chart showing ownership, debtor-creditor, supplier, and/or contractor relationships.
- A.165. The Company did not examine any options for transfer of the license for Susquehanna within its corporate structure.

M. J. Berish
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**Pennsylvania Power & Light Company
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Q.139. Please first identify and then provide complete documentation of the most recently calculated, and projected, decommissioning fund balances for Susquehanna.

A.139. See Attachment 1 for the annual report on decommissioning funding filed with the PUC. Page 2 of Attachment B to that report provides the most recent projections of the decommissioning fund balances for Susquehanna.

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DOCUMENT

ATTACHMENT 1

PENNSYLVANIA POWER & LIGHT COMPANY
Decommissioning Funding
For the Susquehanna Steam Electric Station

BACKGROUND

On August 22, 1983, at Docket No. R-822169, the Pennsylvania Public Utility Commission (PUC) entered an order approving a proposal by Pennsylvania Power & Light Company (PP&L) to establish a fund to deposit amounts included in electric rates for the cost of decommissioning Susquehanna Unit No. 1. On April 26, 1985, at Docket No. R-842651, the PUC entered an order approving PP&L's proposal to establish a fund to deposit amounts included in electric rates for the cost of decommissioning Susquehanna Unit No. 2. In accordance with these PUC orders, PP&L entered into an escrow agreement with First Pennsylvania Bank, N.A. to establish an escrow account to receive funds for the future decommissioning of the two nuclear-fueled generating units at the Company's Susquehanna Steam Electric Station.

From October 1983 through August 1987, PP&L deposited into the escrow account the after-tax amount of decommissioning monies collected from customers. Such monies were invested in tax-exempt securities. Prior to 1984, the Internal Revenue Service (IRS) would not permit a current tax deduction for decommissioning costs recognized in rates and utilities were required to pay income taxes on the funds collected from customers for decommissioning purposes.

The Deficit Reduction Tax Act of 1984 added Section 468A to the Internal Revenue Code (Code). That section provides that a utility will be permitted a tax deduction for payments made to a qualified nuclear decommissioning reserve fund. Section 468A of the Code further provides that payments into the fund - and the associated tax deduction - will be limited to the lesser of the nuclear decommissioning costs allowed for ratemaking purposes or a "ruling amount." Section 468A of the Code further provides that no deduction will be allowed unless the utility requests, and receives, a schedule of ruling amounts from the IRS.

In July 1986, the IRS issued regulations to implement Section 468A of the Code. Those regulations provide that a nuclear decommissioning fund must be a trust and that to the extent assets of the fund are not required to pay decommissioning costs of the nuclear plant or administrative costs of the fund, they may be invested in specific types of securities. These securities are: (1) public debt securities of the United States; (2) obligations of a State or local government that are not in default as to principal or interest; or (3) time or demand deposits in a bank or an insured credit union located in the United States.

In November 1985, PP&L filed with the IRS for a schedule of ruling amounts. In October 1986, PP&L made a supplemental filing to bring its original filing into compliance with the IRS regulations issued in July 1986.

In July 1987, the IRS issued a schedule of ruling amounts for Susquehanna Unit No. 1 and in August 1987, the IRS issued a schedule of ruling amounts for Susquehanna Unit No. 2.

On August 20, 1987, the PUC entered an order at Docket No. P-870231: (1) authorizing PP&L to establish a trust fund for the receipt of contributions for future nuclear decommissioning costs; (2) directing PP&L to deposit in that trust account the

full pre-tax amounts permitted by the IRS for both past and future years and additional funds (past or future) on an after-tax basis; and (3) authorizing PP&L to cause funds in the trust account to be invested in the types of investments specified by IRS regulations.

On August 24, 1987, PP&L entered into the Pennsylvania Power & Light Company Master Decommissioning Trust Agreement for the Susquehanna Steam Electric Station with Corestates Bank, N.A. (formerly First Pennsylvania Bank, N.A.) Under the agreement, the Master Trust is divided into four funds as follows:

- (a) Susquehanna Steam Electric Station Unit No. 1 Qualified Fund;
- (b) Susquehanna Steam Electric Station Unit No. 2 Qualified Fund;
- (c) Susquehanna Steam Electric Station Unit No. 1 Nonqualified Fund; and
- (d) Susquehanna Steam Electric Station Unit No. 2 Nonqualified Fund.

Contributions are made to the two qualified funds in amounts equal to the lesser of the nuclear decommissioning costs allowed for ratemaking purposes or the schedule of ruling amounts issued by the IRS. Contributions are made to the two non-qualified funds in amounts equal to the balance of decommissioning costs included in electric rates, if any, on a net-of-tax basis.

On December 1, 1992 Mellon Bank N.A. replaced Corestates Bank, N.A. as Trustee.

Section 1917 of the Energy Policy Act of 1992 repealed a portion of Section 468A of the Code which imposed the "Black Lung" restrictions on the investments which a nuclear decommissioning reserve fund could make and still qualify for tax benefits. In September 1995, the PUC eliminated the "Black Lung" restrictions on PP&L's fund investments and granted PP&L permission to follow prudent "expert" investment rules similar to those set forth in the Employee Retirement Income Security Act of 1974 (ERISA). As a result of this decision, PP&L, in December 1995, began investing trust fund assets in equity securities as an asset category. At December 31, 1996 equities amounted to about 33% of trust fund assets and we expect that equities will approach 50% of trust fund assets by December 31, 1997.

In December 1995, PP&L filed with the IRS for a new schedule of ruling amounts as a result of the increase in nuclear decommissioning costs included in PUC jurisdictional rates effective September 28, 1995. In March 1996, the IRS issued the requested new schedule of ruling amounts for Susquehanna Units No. 1 and No. 2.

SUMMARY OF ACTIVITY AND ASSETS

Presented below is a summary of the activity in the four funds of the PP&L Decommissioning Trust for the year ended December 31, 1996 and assets of the Trust at December 31, 1996:

**SUMMARY OF ACTIVITY
Year Ended December 31, 1996**

	<u>Trust- Total</u>	<u>Unit No. 1 Qualified Fund</u>	<u>Unit No. 2 Qualified Fund</u>	<u>Unit No. 1 Nonqualified Fund</u>	<u>Unit No. 2 Nonqualified Fund</u>
Balance December 31, 1995	\$109,503,145	\$59,569,341	\$45,424,086	\$3,060,767	\$1,448,951
Cash Transferred To Qualified Funds (a)	0	157,844	349,465	(157,844)	(349,465)
Cash Contributions from PP&L	11,795,669	4,764,396	6,432,650	166,683	431,940
Income and Net Appreciation of Investments	7,874,076	3,759,365	3,033,381	722,304	359,026
Expenses	<u>(1,715,805)</u>	<u>(971,053)</u>	<u>(729,909)</u>	<u>(10,462)</u>	<u>(4,381)</u>
Balance December 31, 1996	<u>\$127,457,085</u>	<u>\$67,279,893</u>	<u>\$54,509,673</u>	<u>\$3,781,448</u>	<u>\$1,886,071</u>

(a) Cash transferred in 1996 from the non-qualified funds to the qualified funds as a result of the receipt in March 1996 of a new schedule of ruling amounts for the year 1995 and subsequent years for Susquehanna Units No. 1 and No. 2.

ASSETS AT DECEMBER 31, 1996

As reported by Mellon Bank N.A., Trustee; the individual assets held by the Trust as of December 31, 1996 are listed in Attachment A. Those assets are summarized as follows:

United States Government Obligations	\$60,663,041
Municipal Bonds	20,974,495
Corporate Obligations	548,122
Equities - NDT Stock Index Fund	41,931,844
NDT Enhanced Temporary Investment Fund	1,752,660
Accrued Interest Income	1,510,942
Cash	<u>75,981</u>
TOTAL ASSETS	<u>\$127,457,085</u>

DECOMMISSIONING ESTIMATE AND PROJECTED TRUST FUND BALANCE

In 1993, TLG Engineering Inc., of Bridgewater, Connecticut, completed a site-specific study of decommissioning the two generating units at the Company's Susquehanna Steam Electric Station based on the immediate dismantlement of both the radiological and non-radiological portions of the facility. The Decon

decommissioning method was used for the radiological portion of the facility. Decon is defined by the Nuclear Regulatory Commission as "the alternative in which the equipment, structures, and portions of a facility and site containing radioactive contaminants are removed or decontaminated to a level that permits the property to be released for unrestricted use shortly after cessation of operations". The study assumed decommissioning commenced for Unit No. 1 in 2022 and for Unit No. 2 in 2024 which is the current expiration date of their respective operating licenses. The total estimated site-specific decommissioning cost for the two generating units is \$804,259,000 in 1993 dollars.

Allegheny Electric Cooperative, Inc. owns 10% of the Susquehanna plant; therefore, only 90% of the total cost, or \$723,833,000 is applicable to PP&L. The decommissioning cost of \$723,833,000 in 1993 dollars was escalated at an assumed general annual inflation rate of 4% to project the cost of decommissioning Unit No. 1 in the year 2022 and Unit No. 2 in the year 2024 to be about \$2,361,000,000. See Attachment B, page 1.

At December 31, 1996, the decommissioning trust assets aggregated \$127,457,085. The projected value of those assets in the year 2022 for Unit No. 1 and in the year 2024 for Unit No. 2 was estimated assuming that the trust would realize a 7.5% annual after-tax rate of return. To this value was added the annual amounts to be placed in the trust from 1997 through the year 2022 for Unit No. 1 and 2024 for Unit No. 2, based on the amount currently reflected in customer rates and assuming these amounts also realize a 7.5% annual after-tax rate of return. The total projected value of the trust in the year 2022 for Unit No. 1 and 2024 for Unit No. 2 based on these assumptions is estimated to be about \$1,849,000,000. See Attachment B, page 2.

The 4% annual inflation rate and the 7.5% annual after-tax rate of return utilized in the Company's calculations were adopted by the PUC in its final order entered on September 27, 1995 at Docket No. R-00943271.

The projected value of the trust in the year 2022 for Unit No. 1 and 2024 for Unit No. 2 is deducted from the estimated cost of decommissioning in 2022 dollars for Unit No. 1 and 2024 dollars for Unit No. 2 to determine the amount by which the cost of decommissioning would exceed the value of the trust in those years. See Attachment B, page 3.

A similar comparison also is shown for the year 1996. The actual value of the decommissioning trust fund at December 31, 1996 is deducted from the estimated cost of decommissioning in 1996 dollars to determine the amount by which the cost of decommissioning exceeded the value of the trust at December 31, 1996. See Attachment B, page 4.

Based on the calculations shown in Attachment B, the estimated cost of decommissioning the Susquehanna plant exceeds the projected value of the trust fund in the year 2022 for Unit No. 1 and 2024 for Unit No. 2 by about \$512 million. The principal reasons for this difference are:

1. The estimated cost of decommissioning Susquehanna includes a number of engineering contingency factors; the PUC-allowed contributions to the trust do not include these contingencies.
2. The projected value of the trust fund assets is based upon an estimate of earnings on the trust fund to the expiration date of each unit's

operating license; the PUC-allowed contributions to the trust fund are based upon earnings on the trust fund for several years beyond the expiration date of each unit's operating license.

Rates charged to PP&L's small FERC wholesale customers reflect the estimated cost of decommissioning contained in the 1993 study. In January 1996, PP&L filed with the FERC to increase its decommissioning cost recovery rate charged to its bulk power capacity and energy sales customers to reflect the current projected cost of decommissioning the Susquehanna station. FERC Docket Nos. ER96-930, ER96-931, ER96-932 and ER96-933. A settlement agreement resolving all issues in those cases now is pending before the FERC.

The 7.5% annual after-tax return projection was adopted by the PA PUC in the company's last base rate case. The Company's best projection of the long term after-tax rate of return is 6.5%. If the Company's 6.5% annual after-tax rate of return assumption were used in these calculations, the estimated cost of decommissioning the Susquehanna plant would exceed the projected value of the trust fund in the year 2022 for Unit No. 1 and 2024 for Unit No. 2 by about \$852 million.

PP&L expects to include a new estimate of decommissioning costs and a new claim for annual decommissioning in future regulatory filings with the PUC and the FERC.

PENNSYLVANIA POWER & LIGHT COMPANY

MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			MTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
UNITED STATES GOVERNMENT OBLIGATIONS								
	USA TREAS BDS DTD 11-15-79	10.375			123.547			
3,020,000	MATURITY DATE 11-15-09 PP&L-ARK-QUAL		118.830	3,588,669.41		3,731,119.40	313,325	40,680.32
	LOT ACQ DATE FACE		UNIT COST					
	3 10/15/96 670,000		122.660	821,823.12		827,764.90		
	2 4/20/95 1,000,000		119.060	1,190,607.45		1,235,470.00		
	1 3/08/95 1,350,000		116.758	1,576,238.84		1,667,884.50		
	USA TREAS BDS DTD 4-2-85	12.000			135.781			
1,100,000	MATURITY DATE 05-15-05 PP&L-ARK-QUAL		125.569	1,381,259.58		1,493,591.00	132,000	17,138.12
	LOT ACQ DATE FACE		UNIT COST					
	3 10/04/94 826,610.28		125.829	1,040,121.63		1,122,379.70		
	2 12/28/94 72999.349		125.280	91,454.12		99,119.24		
	1 10/05/94 200390.371		124.598	249,683.83		272,092.04		
6,135,000	PP&L-NISA-QUAL		125.484	7,698,499.37		8,330,164.35	736,200	95,583.98
	LOT ACQ DATE FACE		UNIT COST					
	10 10/04/94 4,498,389.72		125.623	5,651,043.85		6,107,958.54		
	4 10/05/94 1199609.629		125.111	1,500,845.32		1,628,841.95		
	5 12/28/94 437000.651		125.082	546,610.20		593,363.85		
7,235,000	***TOTAL ALL ACCOUNTS*****		125.497	9,079,758.95		9,823,755.35	868,200	112,722.10
	USA TREAS BDS DTD 1-15-86	9.375			120.344			
2,000,000	MATURITY DATE 02-15-06 PP&L-NISA-QUAL		104.059	2,081,185.01		2,406,880.00	187,500	70,822.01
	LOT ACQ DATE FACE		UNIT COST					
	5 8/08/91 500,000		107.828	539,141.52		601,720.00		
	8 8/09/90 1,250,000		102.895	1,286,199.73		1,504,300.00		
	7 8/17/90 125,000		102.437	128,046.44		150,430.00		
	6 8/31/90 125,000		102.237	127,797.32		150,430.00		
	USA TREAS NTS DTD 4-15-91	7.875			102.609			
	MATURITY DATE 04-15-98							

* TRADED POSITION

PENNSYLVANIA POWER & LIGHT COMPANY
 MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			MTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
2,000,000	USA TREAS NTS DTD 4-15-91 PP&L-ARK-QUAL		100.125	2,002,502.84		2,052,180.00	157,500	33,750.00
LOT	ACQ DATE	FACE	UNIT COST					
1	12/15/94	2,000,000	100.125	2,002,502.84		2,052,180.00		
2,000,000	U-S A TREAS NTS DTD 8-15-91 Maturity Date 08-15-01 PP&L-ARK-QUAL	7.875			106.594			
LOT	ACQ DATE	FACE	UNIT COST					
2	5/12/95	1,000,000	103.679	2,073,592.25		2,131,880.00	157,500	59,490.49
1	3/08/95	1,000,000	104.996	1,049,962.53		1,065,940.00		
			102.362	1,023,629.72		1,065,940.00		
1,000,000	USA TREAS NTS DTD 8-15-92 Maturity Date 08-15-02 PP&L-ARK-QUAL	6.375			100.656			
LOT	ACQ DATE	FACE	UNIT COST					
1	11/13/95	1,000,000	102.619	1,026,196.41		1,006,560.00	63,750	24,079.48
5,200,000	PP&L-NISA-QUAL		93.618	4,868,169.03		5,234,112.00	331,500	125,213.31
LOT	ACQ DATE	FACE	UNIT COST					
5	10/17/94	1,500,000	94.732	1,420,986.26		1,509,840.00		
8	1/10/95	1,000,000	93.263	932,637.08		1,006,560.00		
7	1/06/95	1,400,000	93.246	1,305,449.64		1,409,184.00		
6	11/08/94	1,300,000	93.007	1,209,096.05		1,308,528.00		
6,200,000	***TOTAL ALL ACCOUNTS*****		95.070	5,894,365.44		6,240,672.00	395,250	149,292.79
1,600,000	USA TREAS NTS DTD 11-2-92 Maturity Date 10-31-97 PP&L-NISA-QUAL	5.750			100.141			
LOT	ACQ DATE	FACE	UNIT COST					
1	1/24/95	1,600,000	98.447	1,575,166.65		1,602,256.00	92,000	15,756.91
			98.447	1,575,166.65		1,602,256.00		
1,400,000	USA TREAS NTS DTD 8-15-93 Maturity Date 08-15-03 PP&L-NISA-QUAL	5.750			97.000			
LOT	ACQ DATE	FACE	UNIT COST					
1	11/29/96	1,400,000	98.997	1,385,970.02		1,358,000.00	80,500	30,406.25
			98.997	1,385,970.02		1,358,000.00		
	USA TREAS NTS DTD 11-1-93 Maturity Date 10-31-98	4.750			98.094			

* TRADED POSITION

PENNSYLVANIA POWER & LIGHT COMPANY
 MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			HTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
3,100,000	USA TREAS NTS DTD 11-1-93 PP&L-NISA-QUAL		95.674	2,965,911.73		3,040,914.00	147,250	25,219.61
LOT	ACQ DATE	FACE	UNIT COST					
3	10/04/94	2,000,000	95.756	1,915,135.31		1,961,880.00		
4	10/26/94	1,100,000	95.525	1,050,776.42		1,079,034.00		
900,000	USA TREAS NTS DTD 5-2-94 Maturity Date 04-30-99 PP&L-ARK-QUAL	6.500			101.219			
LOT	ACQ DATE	FACE	UNIT COST					
1	6/26/96	900,000	100.051	900,460.62		910,971.00	58,500	10,019.34
			100.051	900,460.62		910,971.00		
2,580,000	USA TREAS NTS DTD 8-1-94 Maturity Date 07-31-99 PP&L-ARK-QUAL	6.875			102.031			
LOT	ACQ DATE	FACE	UNIT COST					
1	10/15/96	2,580,000	101.819	2,626,955.56		2,632,399.80	177,375	74,227.58
			101.819	2,626,955.56		2,632,399.80		
4,575,000	USA TREAS NTS DTD 8-15-94 Maturity Date 08-15-04 PP&L-NISA-QUAL	7.250			105.250			
LOT	ACQ DATE	FACE	UNIT COST					
1	6/12/96	4,575,000	101.232	4,631,376.11		4,815,187.50	331,687	125,284.13
			101.232	4,631,376.11		4,815,187.50		
1,740,000	USA TREAS NTS DTD 11-15-94 Maturity Date 11-15-04 PP&L-ARK-QUAL	7.875			109.125			
LOT	ACQ DATE	FACE	UNIT COST					
1	10/11/96	1,740,000	108.193	1,882,570.36		1,898,775.00	137,025	17,790.54
			108.193	1,882,570.36		1,898,775.00		
1,000,000	UNITED STATES TREAS NTS DTD 5-15-95 Maturity Date 05-15-98 PP&L-ARK-QUAL	6.125			100.484			
LOT	ACQ DATE	FACE	UNIT COST					
1	6/23/95	1,000,000	100.527	1,005,276.37		1,004,840.00	61,250	7,952.35
			100.527	1,005,276.37		1,004,840.00		
	USA TREAS NTS DTD 11-15-89 Maturity Date 11-15-99	7.875			104.766			

* TRADED POSITION

PENNSYLVANIA POWER & LIGHT COMPANY
 MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			MTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
700,000	USA TREAS NTS DTD 11-15-89 PP&L-NISA-QUAL		100.553	703,873.33		733,362.00	55,125	7,157.11
	LOT ACQ DATE FACE		UNIT COST					
	4 11/02/94 200,000		100.568	201,136.55		209,532.00		
	2 11/02/94 500,000		100.547	502,736.78		523,830.00		
	UNITED STATES TREAS NYS DTD 7-15-96 MATURITY DATE 07-15-06	7.000			103.891			
2,400,000	PP&L-ARK-QUAL		102.981	2,471,554.48		2,493,384.00	168,000	77,608.70
	LOT ACQ DATE FACE		UNIT COST					
	1 10/11/96 1,480,000		102.983	1,524,155.15		1,537,586.80		
	2 10/15/96 920,000		102.978	947,399.33		955,797.20		
1,650,000	PP&L-NISA-QUAL		104.352	1,721,808.30		1,714,201.50	115,500	53,355.98
	LOT ACQ DATE FACE		UNIT COST					
	1 10/31/96 1,650,000		104.352	1,721,808.30		1,714,201.50		
4,050,000	***TOTAL ALL ACCOUNTS*****		103.539	4,193,362.78		4,207,585.50	283,500	130,964.68
	USA TREAS NTS DTD 2-15-91 MATURITY DATE 02-15-01	7.750			105.672			
8,250,000	PP&L-NISA-QUAL		100.471	8,288,895.83		8,717,940.00	639,375	241,503.05
	LOT ACQ DATE FACE		UNIT COST					
	5 6/11/96 900,000		103.629	932,669.98		951,048.00		
	3 10/04/94 2,350,000		100.904	2,371,244.26		2,483,292.00		
	4 1/11/95 5,000,000		99.699	4,984,981.59		5,283,600.00		
	U S TREAS STRIPPED SECURITY GENERIC TINT MATURITY DATE 02-15-10				41.988			
3,400,000	PP&L-NISA-QUAL		37.500	1,275,020.86		1,427,592.00		0.00
	LOT ACQ DATE FACE		UNIT COST					
	2 5/01/95 1,750,000		37.868	662,698.92		734,790.00		
	1 3/01/95 1,650,000		37.110	612,321.94		692,802.00		
	US TREAS STRIPPED SECURITY GENERIC TINT MATURITY DATE 05-15-08				47.564			
3,000,000	PP&L-NISA-QUAL		44.944	1,348,328.49		1,426,920.00		0.00
	LOT ACQ DATE FACE		UNIT COST					
	5 5/31/96 1,000,000		45.037	450,370.71		475,640.00		
	4 5/09/96 2,000,000		44.897	897,957.78		951,280.00		

* TRADED POSITION

PENNSYLVANIA POWER & LIGHT COMPANY

MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			HTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
	U S TREAS SECURITY STRIPPED GENERIC TINT MATURITY DATE 05-15-11				38.447			
1,300,000	PP&L-NISA-QUAL		36.752	477,779.40		499,811.00		0.00
	LOT ACQ DATE FACE		UNIT COST					
	2 8/15/96 500,000		37.160	185,803.62		192,235.00		
	1 7/31/96 800,000		36.496	291,975.78		307,576.00		
60,050,000				57,981,022.01*		60,663,040.55*	4,142,862	1,153,039.26
60,050,000	TOTAL U. S. GOVERNMENT OBLIGATIONS			57,981,022.01*		60,663,040.55*	4,142,862	1,153,039.26
TAX-EXEMPT OBLIGATIONS								
GENERAL OBLIGATIONS IN PA.								

	BUCKS CO PA	6.000			105.985			
	SER A DTD 3-15-92 5M REG MATURITY DATE 03-01-01							
500,000	PP&L-ARK-QUAL		101.086	505,430.21		529,925.00	30,000	10,000.00
	LOT ACQ DATE FACE		UNIT COST					
	2 11/04/92 500,000		101.086	505,430.21		529,925.00		
	PENNA COMMONHEALTH	6.600			106.956			
	1ST SER A DTD 6-1-89 OPT 1999 5M REG MATURITY DATE 06-01-02							
1,100,000	PP&L-ARK-QUAL		100.933	1,110,270.10		1,176,516.00	72,600	6,050.00
	LOT ACQ DATE FACE		UNIT COST					
	1 12/06/90 1,100,000		100.933	1,110,270.10		1,176,516.00		
1,600,000				1,615,700.31*		1,706,441.00*	102,600	16,050.00
GENERAL OBLIGATIONS OUTSIDE PA.								

	ANNE ARUNDEL CO MARYLAND	5.000			100.532			
	DTD 8-1-93 OPT 2003 5M REG REF-CONS WTR & SHR MATURITY DATE 04-15-07							

* TRADED POSITION

PENNSYLVANIA POWER & LIGHT COMPANY

MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			HTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
1,200,000	ANNE ARUNDEL CO MARYLAND DTD 8-1-93 OPT 2003 5M REG REF-CONS WTR & SHR PP&L-ARK-QUAL	100.784		1,209,409.62		1,206,384.00	60,000	12,666.67
LOT	ACQ DATE	FACE	UNIT COST					
2	12/14/93	1,200,000	100.784	1,209,409.62		1,206,384.00		
500,000	CALIFORNIA STATE VAR PURP DTD 9-1-85 5M REG Maturity DATE 09-01-04 PP&L-ARK-QUAL	8.500		566,737.09	123.888	619,440.00	42,500	14,166.67
LOT	ACQ DATE	FACE	UNIT COST					
2	9/26/91	500,000	113.347	566,737.09		619,440.00		
500,000	DENVER CITY & CO COLORADO SER A DTD 6-1-92 5M REG Maturity DATE 08-01-00 PP&L-ARK-QUAL	5.600		498,555.76	104.406	522,030.00	28,000	11,666.67
LOT	ACQ DATE	FACE	UNIT COST					
2	6/04/92	500,000	99.711	498,555.76		522,030.00		
1,000,000	DISTRICT COLUMBIA REF SER B DTD 3-1-88 OPT 1998 5M REG MBIA Maturity DATE 06-01-03 PP&L-ARK-QUAL	7.650		991,506.01	107.042	1,070,420.00	76,500	6,375.00
LOT	ACQ DATE	FACE	UNIT COST					
2	4/04/88	1,000,000	99.150	991,506.01		1,070,420.00		
500,000	DISTRICT COLUMBIA SER A DTD 5-1-89 OPT 1999 5M REG AMBAC INSD Maturity DATE 06-01-00 PP&L-ARK-QUAL	7.300		500,000.00	107.800	539,000.00	36,500	3,041.67
LOT	ACQ DATE	FACE	UNIT COST					
1	5/03/89	500,000	100.000	500,000.00		539,000.00		
	FAIRFAX CO VIRGINIA PUB IMPT SER A DTD 4-1-92 OPT 1999 5M REG Maturity DATE 04-01-02	5.875			104.324			

* TRADED POSITION

MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			MTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
1,500,000	FAIRFAX CO VIRGINIA PUB IMPT SER A DTD 4-1-92 OPT 1999 5M REG							
LOT	PP&L-ARK-QUAL		100.119	1,501,790.15		1,564,860.00	88,125	22,031.25
1	ACQ DATE FACE		UNIT COST					
	4/02/92 1,500,000		100.119	1,501,790.15		1,564,860.00		
660,000	GEORGIA STATE SER B DTD 3-1-92 5M REG MATURITY DATE 03-01-07	6.250			110.954			
LOT	PP&L-ARK-QUAL		103.141	680,733.21		732,296.40	41,250	13,750.00
2	ACQ DATE FACE		UNIT COST					
	11/18/92 660,000		103.141	680,733.21		732,296.40		
1,000,000	MARYLAND STATE REF DTD 10-15-93 OPT 2003 5M REG ST & LOC FACS LN-THIRD SER MATURITY DATE 07-15-04	4.400			98.548			
LOT	PP&L-ARK-QUAL		90.155	901,552.45		985,480.00	44,000	20,288.89
2	ACQ DATE FACE		UNIT COST					
	10/06/94 1,000,000		90.155	901,552.45		985,480.00		
500,000	MASSACHUSETTS COMMONWEALTH CONS LN SER C DTD 6-1-89 OPT 1999 5M REG ANBAC INSD MATURITY DATE 06-01-02	7.000			108.368			
LOT	PP&L-ARK-QUAL		99.702	498,512.98		541,840.00	35,000	2,916.67
2	ACQ DATE FACE		UNIT COST					
	6/23/89 500,000		99.702	498,512.98		541,840.00		
1,500,000	MASSACHUSETTS COMMONWEALTH REF SER B DTD 5-1-93 5M REG MATURITY DATE 11-01-07	5.500			103.712			
LOT	PP&L-ARK-QUAL		101.520	1,522,801.62		1,555,680.00	82,500	13,750.00
2	ACQ DATE FACE		UNIT COST					
	7/08/93 1,500,000		101.520	1,522,801.62		1,555,680.00		
	MINNESOTA STATE DTD 7-1-90 5M REG MATURITY DATE 08-01-99	6.600			106.120			

* TRADED POSITION

STATEMENT OF INVESTMENTS - ACCRUED
DECEMBER 31, 1996

PENNSYLVANIA POWER & LIGHT COMPANY
 MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			MTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
1,500,000	MINNESOTA STATE DTD 7-1-90 5M REG PP&L-ARK-QUAL		99.878	1,498,170.95		1,591,800.00	99,000	41,250.00
LOT 2	ACQ DATE FACE 6/20/90 1,500,000		UNIT COST 99.878	1,498,170.95		1,591,800.00		
1,000,000	MISSISSIPPI STATE REF SER B DTD 1-1-93 5M REG Maturity Date 11-15-07 PP&L-ARK-QUAL	5.800	105.773	1,057,737.61	107.196	1,071,960.00	58,000	7,411.11
LOT 2	ACQ DATE FACE 7/09/93 1,000,000		UNIT COST 105.773	1,057,737.61		1,071,960.00		
430,000	NEW YORK CITY NEW YORK SER C-SUBSER C-1 DTD 1-7-92 5M REG ESCROWED MBIA Maturity Date 08-01-00 PP&L-ARK-QUAL	5.900	100.000	430,000.00	105.257	452,605.10	25,370	10,570.83
LOT 1	ACQ DATE FACE 12/19/91 430,000		UNIT COST 100.000	430,000.00		452,605.10		
70,000	NEW YORK CITY NEW YORK SER C SUBSER C-1 DTD 1-7-92 5M REG MBIA Maturity Date 08-01-00 PP&L-ARK-QUAL	5.900	100.000	70,000.00	104.783	73,348.10	4,130	1,720.83
LOT 1	ACQ DATE FACE 12/19/91 70,000		UNIT COST 100.000	70,000.00		73,348.10		
1,000,000	NEW YORK CITY NEW YORK SER B DTD 2-18-88 5M REG ESCROWED FGIC INSO TCRS CUSTDL RCPTS/CTFS Maturity Date 08-01-03 PP&L-ARK-QUAL	7.625	100.172	1,001,729.65	117.617	1,176,170.00	76,250	31,770.83
LOT 1	ACQ DATE FACE 4/11/89 1,000,000		UNIT COST 100.172	1,001,729.65		1,176,170.00		
	NORTH CAROLINA STATE CAP IMPT-SER A DTD 2-1-94 OPT 2004 5M REG Maturity Date 02-01-07	4.700			98.498			

* TRADED POSITION

PENNSYLVANIA POWER & LIGHT COMPANY
 MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			HTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
475,000	NORTH CAROLINA STATE CAP IMPT-SER A DTD 2-1-94 OPT 2004 5M REG PP&L-ARK-QUAL		94.986	451,185.27		467,865.50	22,325	9,302.08
LOT	ACQ DATE	FACE	UNIT COST					
2	6/09/94	475,000	94.986	451,185.27		467,865.50		
	NORTHSIDE INDPT SCH DIST TEXAS DTD 4-1-89 OPT 1999 5M REG Maturity DATE 04-01-02 PP&L-ARK-QUAL	7.500			107.228			
1,000,000			99.766	997,667.51		1,072,280.00	75,000	18,750.00
LOT	ACQ DATE	FACE	UNIT COST					
2	4/10/89	1,000,000	99.766	997,667.51		1,072,280.00		
	SOUTH CAROLINA STATE CAP IMPT SER V DTD 3-1-90 OPT 1999 5M REG Maturity DATE 02-01-02 PP&L-ARK-QUAL	6.600			106.800			
1,000,000			101.056	1,010,561.80		1,068,000.00	66,000	27,500.00
LOT	ACQ DATE	FACE	UNIT COST					
1	3/07/90	1,000,000	101.056	1,010,561.80		1,068,000.00		
	SOUTH CAROLINA STATE REF-CAP IMPT DTD 10-15-93 OPT 2003 5M REG Maturity DATE 04-01-07 PP&L-ARK-QUAL	4.200			92.908			
1,500,000			96.046	1,440,703.48		1,393,620.00	63,000	15,750.00
LOT	ACQ DATE	FACE	UNIT COST					
2	1/10/94	1,500,000	96.046	1,440,703.48		1,393,620.00		
16,835,000				16,829,355.16*		17,705,079.10*	1,023,450	284,679.17
----- SPECIAL REVENUES OUTSIDE PA. -----								
	ALBUQUERQUE NEW MEXICO ARPT REV DTD 4-15-89 OPT 1997 5M REG AMBAC INSD REF Maturity DATE 07-01-04	7.500			103.413			

* TRADED POSITION

PENNSYLVANIA POWER & LIGHT COMPANY
 MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			HTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
500,000	ALBUQUERQUE NEW MEXICO ARPT REV DTD 4-15-89 OPT 1997 SM REG AMBAC INSD REF PP&L-ARK-QUAL		100.000	500,000.00		517,065.00	37,500	18,750.00
LOT	ACQ DATE	FACE	UNIT COST					
1	4/18/89	500,000	100.000	500,000.00		517,065.00		
	KENTUCKY STATE TPK AUTH ECONOMIC DEV RD REV DTD 4-1-93 SM REG AMBAC INSD REF-REVITALIZATION MATURITY DATE 07-01-06 PP&L-ARK-QUAL	5.500			104.591			
1,000,000			104.292	1,042,924.33		1,045,910.00	55,000	27,500.00
LOT	ACQ DATE	FACE	UNIT COST					
2	12/27/93	1,000,000	104.292	1,042,924.33		1,045,910.00		
1,500,000				1,542,924.33*		1,562,975.00*	92,500	46,250.00
19,935,000	TOTAL TAX-EXEMPT OBLIGATIONS			19,987,979.80*		20,974,495.10*	1,218,550	346,979.17
CORPORATE OBLIGATIONS								
FINANCIAL								

	DRESDNER BK A G SUB NTS DTD 09/22/1995 REG MATURITY DATE 09-15-05 PP&L-NISA-QUAL	6.625			97.879			
560,000			98.547	551,863.20		548,122.40	37,100	10,923.89
LOT	ACQ DATE	FACE	UNIT COST					
1	12/20/96	560,000	98.547	551,863.20		548,122.40*	37,100	10,923.89
560,000				551,863.20*		548,122.40*	37,100	10,923.89
560,000	TOTAL CORPORATE OBLIGATIONS			551,863.20*		548,122.40*	37,100	10,923.89
80,545,000	TOTAL FIXED INTEREST OBLIGATIONS			78,520,865.01*		82,185,658.05*	5,398,512	1,510,942.32

* TRADED POSITION

PENNSYLVANIA POWER & LIGHT COMPANY
MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			WTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
COMMON STOCKS								
OTHER INDUSTRIES								

	NDT STOCK INDEX FUND		3.312			167.116		
216,968	PP&L-MCM-QUAL		149.421	32,419,723.82		36,258,910.50	718,770	0.00
LOT	ACQ DATE	FACE	UNIT COST					
52	12/02/96	176	170.857	30,070.93		29,412.48		
51	11/02/96	164	170.656	27,987.60		27,407.08		
49	11/18/96	5	166.424	832.12		835.58		
50	11/18/96	246	166.151	40,873.15		41,110.63		
53	12/16/96	5,883	164.644	968,604.25		983,145.76		
54	12/16/96	191	164.217	31,365.56		31,919.23		
48	11/01/96	6,084	159.155	968,303.12		1,016,736.16		
47	11/01/96	153	158.885	24,309.50		25,568.80		
45	10/16/96	86	158.278	13,611.96		14,372.01		
46	10/16/96	82,066	158.067	12,971,946.41		13,714,574.26		
43	10/01/96	94	154.771	14,548.53		15,708.94		
41	9/16/96	6	154.035	924.21		1,002.69		
42	9/16/96	132	153.234	20,226.92		22,059.36		
31	7/01/96	6,393	151.360	967,645.86		1,068,375.12		
32	7/01/96	46	150.688	6,931.65		7,687.35		
28	6/03/96	116	150.325	17,437.76		19,385.50		
27	6/03/96	6,454	149.926	967,626.73		1,078,569.22		
37	8/16/96	5	149.690	748.45		835.58		
30	6/17/96	18	149.657	2,693.83		3,008.09		
29	6/17/96	102	149.637	15,263.01		17,045.87		
26	5/16/96	6,309	149.584	943,730.63		1,054,337.35		
25	5/16/96	137	149.411	20,469.32		22,894.94		
38	8/16/96	147	148.996	21,902.49		24,566.11		
13	2/16/96	24	148.509	3,564.22		4,010.79		
24	5/01/96	45	146.925	6,611.63		7,520.23		
21	4/01/96	12,084	146.806	1,774,005.21		2,019,434.54		
40	9/03/96	107	146.757	15,703.01		17,881.45		
39	9/03/96	6,617	146.267	967,853.42		1,105,809.20		
14	2/16/96	102	146.134	14,905.68		17,045.87		
19	3/18/96	14	145.219	2,033.07		2,339.62		
35	8/01/96	6,656	145.017	965,235.65		1,112,326.74		

* TRADED POSITION

PENNSYLVANIA POWER & LIGHT COMPANY
 MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			HTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
NDT STOCK INDEX FUND								
LOT	ACQ DATE	FACE	UNIT COST					
22	4/16/96	1	144.940	144.94		167.11		
20	4/01/96	36	144.919	5,217.11		6,016.19		
11	3/01/96	3,942	144.411	569,270.91		658,772.83		
23	4/16/96	73	144.350	10,537.56		12,199.49		
36	8/01/96	82	144.041	11,811.42		13,703.54		
14	3/18/96	88	143.979	12,670.20		14,706.24		
12	3/01/96	63	143.717	9,054.20		10,528.33		
15	2/01/96	22,057	142.702	3,147,586.57		3,686,086.37		
6	2/01/96	35	142.673	4,993.58		5,849.07		
34	7/16/96	109	141.634	15,438.12		18,215.68		
3	1/02/96	33	138.202	4,560.69		5,514.84		
2	12/16/95	42,465	136.774	5,808,139.63		7,096,597.81		
4	1/16/96	7,294	135.529	988,551.78		1,218,947.00		
5	1/16/96	28	135.043	3,781.23		4,679.25		
33,946	PP&L-MCM-NQ		137.944	4,682,664.68		5,672,933.22	112,456	0.00
LOT	ACQ DATE	FACE	UNIT COST					
46	11/02/96	26	170.656	4,437.06		4,345.02		
45	11/18/96	39	166.151	6,479.89		6,517.53		
47	12/16/96	64	164.644	10,537.26		10,695.44		
48	12/16/96	30	164.217	4,926.53		5,013.49		
44	11/01/96	66	159.155	10,504.27		11,029.68		
43	11/01/96	25	158.885	3,972.13		4,177.90		
41	10/16/96	23	158.279	3,640.42		3,843.67		
42	10/16/96	69	158.067	10,906.64		11,531.03		
39	10/01/96	25	154.770	3,869.27		4,177.90		
37	9/16/96	2	154.045	308.09		334.23		
38	9/16/96	36	153.234	5,516.45		6,016.19		
28	7/01/96	56	151.360	8,476.18		9,358.51		
29	7/01/96	15	150.688	2,260.32		2,506.74		
25	6/03/96	40	150.325	6,013.03		6,684.65		
13	2/16/96	1	150.090	150.09		167.11		
24	6/03/96	67	149.926	10,045.08		11,196.79		
33	8/16/96	3	149.686	449.06		501.34		
27	6/17/96	16	149.658	2,394.53		2,673.86		
26	6/17/96	33	149.637	4,938.03		5,514.84		
23	5/16/96	61	149.585	9,124.69		10,194.10		
22	5/16/96	51	149.410	7,619.96		8,522.93		

* TRADED POSITION

STATEMENT OF INVESTMENTS - ACCRUED
 DEC. 31, 1996

PENNSYLVANIA POWER & LIGHT COMPANY
MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES		NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
				HTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
NDT STOCK INDEX FUND									
LOT	ACQ DATE	FACE	UNIT COST						
34	8/16/96	42	148.996	6,257.85		7,018.88			
21	5/01/96	17	146.925	2,497.73		2,840.97			
36	9/03/96	31	146.757	4,549.47		5,180.60			
35	9/03/96	71	146.267	10,385.02		11,865.26			
14	2/16/96	49	146.134	7,160.61		8,188.70			
18	3/18/96	3	145.210	435.63		501.34			
31	8/01/96	63	145.017	9,136.10		10,528.33			
19	4/01/96	17	144.919	2,463.63		2,840.97			
11	3/01/96	1,666	144.411	240,589.89		278,415.91			
20	4/16/96	27	144.350	3,897.45		4,512.14			
32	8/01/96	25	144.041	3,601.03		4,177.90			
16	3/18/96	41	143.979	5,903.15		6,851.77			
12	3/01/96	30	143.717	4,311.53		5,013.49			
15	2/01/96	1,509	142.702	215,337.87		252,178.64			
6	2/01/96	23	142.673	3,281.50		3,843.67			
30	7/16/96	33	141.633	4,673.92		5,514.84			
3	1/02/96	25	138.202	3,455.07		4,177.90			
2	12/16/95	29,299	136.776	4,007,403.26		4,896,343.32			
4	1/16/96	206	135.529	27,919.05		34,425.97			
5	1/16/96	21	135.044	2,835.94		3,509.44			
250,914	***TOTAL ALL ACCOUNTS*****		147.868	37,102,388.50		41,931,843.72	831,226		0.00
250,914				37,102,388.50*		41,931,843.72*	831,226		0.00
250,914	TOTAL COMMON STOCKS			37,102,388.50*		41,931,843.72*	831,226		0.00
80,795,914	TOTAL INVESTMENTS			115,623,253.51*		124,117,501.77*	6,229,738		1,510,942.32
TEMPORARY INVESTMENTS AND DEPOSITS									

NDT ENHANCED TEMPORARY INVESTMENT FUND									
1,784,495	PP&L-ARK-QUAL		.052	.982	1,752,686.37	.982	1,752,659.69	94,333	0.00
1,784,495					1,752,686.37*		1,752,659.69*	94,333	0.00
1,784,495	NET TOTAL OTHER ASSETS				1,752,686.37*		1,752,659.69*	94,333	0.00

* TRADED POSITION

STATEMENT OF INVESTMENTS - ACCRUED
DECEMBER 31, 1996

PENNSYLVANIA POWER & LIGHT COMPANY
 MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			MTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
RECEIVABLES								

INCOME								
	PP&L-ARK-QUAL			709,716.09		709,716.09		709,716.09
	PP&L-NISA-QUAL			801,226.23		801,226.23		801,226.23
	TOTAL ALL ACCOUNTS**			1,510,942.32		1,510,942.32		1,510,942.32
				1,510,942.32*		1,510,942.32*		1,510,942.32
	TOTAL RECEIVABLES			1,510,942.32*		1,510,942.32*		1,510,942.32
INCOME DEPOSITED AT INTEREST								
	PP&L-ARK-QUAL			1,079,961.10		1,079,961.10		
	PP&L-ARK-NQUAL			0.00		0.00		
	PP&L-NISA-QUAL			629,399.12		629,399.12		
	PP&L-MCM-QUAL			1,423.38		1,423.38		
	PP&L-MCM-NQ			1.42		1.42		
	TOTAL INCOME CASH			1,710,785.02		1,710,785.02		
PRINCIPAL DEPOSITED AT INTEREST								
	PP&L-ARK-QUAL			1,067,431.69-		1,067,431.69-		
	PP&L-ARK-NQUAL			0.00		0.00		
	PP&L-NISA-QUAL			549,956.21-		549,956.21-		
	PP&L-MCM-QUAL			11,999.62-		11,999.62-		
	PP&L-MCM-NQ			5,416.26-		5,416.26-		
	TOTAL PRINCIPAL CASH DEFICIT			1,634,803.78-		1,634,803.78-		
	*** TOTAL ALL CASH ***			75,981.24		75,981.24		

* TRADED POSITION

PENNSYLVANIA POWER & LIGHT COMPANY
 MASTER DECOMMISSIONING TRUST FUND

FACE VALUE OR NO. OF SHARES	NAME OF SECURITY	RATE	TAX COST		MARKET		INCOME	
			MTD UNIT	VALUE	PRICE	VALUE	EST. ANNUAL	ACCRUED
82,580,409	TOTAL FUND			118,962,863.44*		127,457,085.02*		6,324,071
	SETTLED TAX COST			117,451,921.12*				

MARKET PRICES AND INCOME ARE FROM SOURCES WE BELIEVE ARE RELIABLE BUT ARE NOT GUARANTEED.

* TRADED POSITION

**PENNSYLVANIA POWER & LIGHT COMPANY
ESTIMATED COST TO DECOMMISSION SUSQUEHANNA**

<u>Line</u>	<u>Total</u>	<u>Unit No.1</u>	<u>Unit No. 2</u>
1 Estimated cost of decommissioning Susquehanna in 1993 dollars	\$723,833,000	\$315,472,000	\$408,361,000
2 Assumed annual rate of inflation		4%	4%
3 Years to retirement			
Unit No. 1 (1993 to 2022)		29	
Unit No. 2 (1993 to 2024)			31
4 Estimated cost of decommissioning			
Unit No. 1 in 2022 [line 1 for Unit No. 1 x 3.118651(a)]		\$984,000,000	
Unit No. 2 in 2024 [line 1 for Unit No. 2 x 3.373113(b)]			\$1,377,000,000
Total	\$2,361,000,000		

- (a) Future value of \$1 compounded @ 4% for 29 years.
(b) Future value of \$1 compounded @ 4% for 31 years.

**PENNSYLVANIA POWER & LIGHT COMPANY
PROJECTED VALUE OF DECOMMISSIONING TRUST FUND
YEAR 2022 FOR UNIT NO. 1 AND YEAR 2024 FOR UNIT NO. 2**

<u>Line</u>	<u>Total</u>	<u>Unit No. 1</u>	<u>Unit No. 2</u>
1 Annual decommissioning expense in rates ^(a)	\$ 11,685,471	\$ 4,852,455	\$ 6,833,016
2 Less Tax Deductible Contributions	<u>11,616,921</u>	<u>4,850,608</u>	<u>6,766,313</u>
3 Annual taxable income from decommissioning expense in rates	68,550	1,847	66,703
4 Tax @ 41.4935% ^(b)	<u>28,443</u>	<u>766</u>	<u>27,677</u>
5 After-tax contributions	40,107	1,081	39,026
6 Tax deductible contributions	<u>11,616,921</u>	<u>4,850,608</u>	<u>6,766,313</u>
7 Annual amount contributed to trust fund (line 5 + line 6)	<u>11,657,028</u>	<u>4,851,689</u>	<u>6,805,339</u>
8 Projected value of annual contributions to trust in 2022 for Unit No. 1 [line 7 x 74.076201 ^(c)] and in 2024 for Unit No. 2 [line 7 x 87.679309 ^(d)]	956,000,000	359,000,000	597,000,000
9 Projected value of 12/31/96 trust balance for Unit No. 1 in 2022 and Unit No. 2 in 2024 Unit No. 1 [\$71,061,341 x 6.555715 ^(e)] Unit No. 2 [\$56,395,744 x 7.575948 ^(f)]	<u>893,000,000</u>	<u>466,000,000</u>	<u>427,000,000</u>
10 Projected trust fund balance for decommissioning (lines 8 + 9)	<u>\$1,849,000,000</u>	<u>\$825,000,000</u>	<u>\$1,024,000,000</u>

- (a) Represents amounts allowed in PUC and FERC jurisdictional rates.
(b) Federal @ 35%; State @ 9.99%; effective 41.4935%
(c) Future value of \$1 deposited periodically compounded @ 7.5% for 26 years.
(d) Future value of \$1 deposited periodically compounded @ 7.5% for 28 years.
(e) Future value of \$1 compounded @ 7.5% for 26 years.
(f) Future value of \$1 compounded @ 7.5% for 28 years.

**PENNSYLVANIA POWER & LIGHT COMPANY
COMPARISON OF ESTIMATED COST OF DECOMMISSIONING SUSQUEHANNA
AND PROJECTED VALUE OF DECOMMISSIONING
TRUST FUND
YEAR 2022 FOR UNIT NO. 1 AND YEAR 2024 FOR UNIT NO. 2**

	<u>Total</u>	<u>Unit No. 1</u>	<u>Unit No. 2</u>
Estimated Cost of Decommissioning Susquehanna (page 1)	\$2,361,000,000	\$984,000,000	\$1,377,000,000
Projected Value of Trust Fund (page 2)	<u>1,849,000,000</u>	<u>825,000,000</u>	<u>1,024,000,000</u>
Decommissioning Cost Estimate in Excess of Projected Trust Fund Value	<u>\$ 512,000,000</u>	<u>\$159,000,000</u>	<u>\$ 353,000,000</u>

Note: The yearly tax of \$766 for Unit No. 1 and \$27,677 for Unit No. 2 (Attachment B, page 2, line 4) for 26 years and 28 years, respectively, or \$794,872 when added to the accumulated deferred taxes applicable to decommissioning at December 31, 1996, of \$1,865,495 results in an asset of \$2,660,367 which represents tax savings which the Company expects to realize when actual expenditures for decommissioning are incurred.

PENNSYLVANIA POWER & LIGHT COMPANY
COMPARISON OF ESCALATED COST OF DECOMMISSIONING
SUSQUEHANNA AND CURRENT VALUE OF DECOMMISSIONING
TRUST FUND
AS OF DECEMBER 31, 1996

<u>Line</u>	<u>Total</u>	<u>Unit No. 1</u>	<u>Unit No. 2</u>
1 Estimated cost of decommissioning Susquehanna in 1996 dollars (a)	\$814,214,000	\$354,863,000	\$459,351,000
2 Value of decommissioning trust fund at 12/31/96	<u>127,457,085</u>	<u>71,061,341</u>	<u>56,395,744</u>
3 Decommissioning cost in excess of current value of trust fund	<u>\$686,756,915</u>	<u>\$283,801,659</u>	<u>\$402,955,256</u>

(a) Escalated to 1996 dollars assuming an annual rate of inflation of 4%. Future value of \$1 compounded @ 4% for 3 years - 1.124864.

**PENNSYLVANIA POWER & LIGHT COMPANY
DECOMMISSIONING TRUST FUND**

SCHEDULE 1

Page 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
Unit/Date	Commercial	Yr.	Begin Balance	Amount Funded	Amount Growth Int/Div	Ending Balance (Current)	Decom Date	Yrs. Remain	Est. Decom. Expense (Current)	Current Shortfall (9-6)	Current Shortfall (10/9)	Est. Fut. Fund Balance	Est. Fut. Expense	Est. Fut. Shortfall (13-12)	Est. Yrly. Shortfall (14xa.f.)
			(000)	(000)	(000)	(000)			(000)	(000)	(%)	(000)	(000)	(000)	(000)
Susquehanna Unit No. 1															
R-822169 6/83															
		1988	12,550	3,643	1,334	17,527									
		1989	17,527	3,441	1,677	22,645	2022	33	174,805	152,160	87.0%	565,000	918,500	353,500	3,297
		1990	22,645	3,567	1,713	27,925	2022	32	174,805	146,880	84.0%	566,000	918,500	352,500	3,527
		1991	27,925	3,558	3,386	34,869	2022	31	174,805	139,936	80.1%	576,000	918,500	342,500	3,683
		1992	34,869	3,550	1,877	40,296	2022	30	174,805	134,509	76.9%	585,000	918,500	333,500	3,861
		1993	40,296	3,808	4,058	48,163	2022	29	315,472	267,309	84.7%	482,000 (b)	984,000	502,000	7,414
		1994	48,163	3,739	(1,365)	50,536	2022	28	315,472	264,935	84.0%	463,000	984,000 (f)	521,000	8,239
		1995 (c)	50,536	3,966 (c)	8,128	62,630	2022	27	315,472	252,842	80.1%	680,000 (d)	984,000 (f)	304,000	4,415
		1996	62,630	4,931	3,500	71,061	2022	26	315,472	244,411	77.5%	825,000 (e)	984,000	159,000	2,148
Susquehanna Unit No. 2															
R-842651 2/85															
		1989	10,897	2,816	1,079	14,792	2022	33	174,805	160,013	91.5%	437,000	918,500	481,500	4,478
		1990	14,792	2,965	1,150	18,907	2022	32	174,805	155,898	89.2%	439,000	918,500	479,500	4,793
		1991	18,907	2,957	2,330	24,194	2022	31	174,805	150,611	86.2%	446,000	918,500	472,500	5,081
		1992	24,194	2,964	1,331	28,489	2022	30	174,805	146,316	83.7%	460,000	918,500	458,500	5,308
		1993	28,489	3,322	2,886	34,697	2024 (a)	31	408,361	373,664	91.5%	435,000 (b)	1,377,000	942,000	12,167
		1994	34,697	3,248	(991)	36,954	2024	30	408,361	371,407	91.0%	421,000	1,377,000 (f)	956,000	13,198
		1995 (c)	36,954	3,906 (c)	6,012	46,872	2024	29	408,361	361,489	88.5%	840,000 (d)	1,377,000 (f)	537,000	6,699
		1996	46,872	6,865	2,659	56,396	2024	28	408,361	351,965	86.2%	1,024,000 (e)	1,377,000	353,000	4,500

- (a) The projected decommissioning date for Unit 2 was changed to 2024 from 2022.
- (b) The projected annual after-tax return decreased in 1993 from 6.5% to 5.5%.
- (c) Based on amounts allowed in the PUC's Final Order at Docket No. R-00943271, effective September 28, 1995.
- (d) The projected annual after tax return increased to 6.5% in 1995.
- (e) The projected annual after tax rate of return was increased to 7.5% in 1996.
- (f) Estimated future expense originally reported for 1994 and 1995 was in error and is being corrected in this report.

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MEM

MEM

June 6, 1997

Paul E. Russell, Esquire
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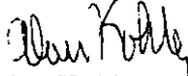
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RE: Application of Pennsylvania Power & Light Company
for Approval of its Restructuring Plan Under Section 2806
of the Public Utility Code. Docket No. R-00973954

Dear Paul:

Enclosed please find Enron's third set of interrogatories to Pennsylvania Power & Light Company in the above-captioned matter.

Very truly yours,



Alan Kohler

For WOLF, BLOCK, SCHORR and SOLIS-COHEN

ACK/cln
Enclosures

cc: James McNulty, Acting Prothonotary (Cert. of Service only)

Parties of Record

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of the foregoing documents upon the participants, listed below, in accordance with the requirements of §1:54 (relating to service by a participant):

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Alan Kohler

Alan Kohler

Dated: June 6, 1997

HANGLEY ARONCHICK SEGAL & PUDLIN

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June 9, 1997

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E-mail Address:
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00930

Office of the Prothonotary
Pennsylvania Public Utility Commission
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P.O. Box 3265
Harrisburg, PA 17105-3265

ORIGINAL

Re: Pennsylvania Power & Light Company
Restructuring Plan Filing
Docket No. R-00973954

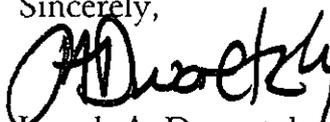
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Dear Sir or Madam:

Kindly accept for filing the original plus three copies of New Energy
Venture's Petition to Intervene.

A copy of this document has been served on all known parties in this
proceeding. A Certificate of Service to that effect is enclosed.

Sincerely,


Joseph A. Dworetzky

JAD:kbs

encl.

cc: Parties of Record

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Power & Light Company :
Restructuring Plan Filing : Docket No. R-00973954

NEW ENERGY VENTURE'S
PETITION TO INTERVENE

ORIGINAL

New Energy Ventures, Inc. ("NEV"), by its counsel, Hangley Aronchick Segal & Pudlin, hereby petitions to intervene in the above-captioned proceeding in which Pennsylvania Power & Light Company ("PP&L") seeks to obtain approval of its Restructuring Plan (the "Plan"), and, in support of its petition, NEV states as follows:

Identification of Intervenor

1. The name and address of the entity seeking intervention is

New Energy Ventures, Inc.
Attn: David M. Boonin
200 S. Broad Street
Suite 800
Philadelphia, PA 19102
(215) 545-5058
(215) 545-5811 (fax)

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2. The names and the addresses of counsel for NEV are

Joseph A. Dworetzky
John P. Lavelle, Jr.
HANGLEY ARONCHICK SEGAL & PUDLIN
One Logan Square
12th Floor
Philadelphia, PA 19103
(215) 496-7014
(215) 568-0300 (fax)

3. NEV is a California corporation headquartered at 1000 Wilshire Boulevard, Suite 500, Los Angeles, CA 90017 and appears in this proceeding through its Mid-Atlantic regional offices.

4. NEV is a national leader in the organization and management of energy buyers' groups.

Background

5. On December 3, 1996, Governor Ridge signed the Electricity Generation Customer Choice and Competition Act, 66 Pa. C.S. §2801 et seq., into law. The Customer Choice Act requires the restructuring of Pennsylvania's electric industry to implement the transition from monopoly provision of electricity supply to a competitive market.

6. Retail competition, once implemented in Pennsylvania, has the potential to provide far-reaching benefits to both residential, commercial and industrial

customers throughout the Commonwealth through reduced prices and improved services.

7. In accordance with Section 2806(E) of the Customer Choice Act, the Commission, by order entered on February 13, 1997 at Docket No. M-00960890F0003 and by order entered on January 24, 1997 at Docket No. M-00970902, required certain electric utilities including PP&L to file Restructuring Plans by April 1, 1997.

8. On April 1, 1997 PP&L filed its Plan at the above-captioned docket.

9. PP&L requests the Commission, inter alia, to authorize: (a) the recovery of \$4.210 billion of Transition and Stranded Costs; (b) the establishment of unbundled rates for generation, transmission and distribution services, Competitive Transition Charges ("CTCs"), a universal service and energy conservation cost recovery mechanism, and certain specific tariff provisions attached as exhibits to the testimony presented by PP&L's witnesses; (c) the imposition of procedures which purport to ensure direct access; (d) the implementation of the Customer Choice Education Program described therein; and (e) the implementation of PP&L's initial plan to meet its universal service and energy conservation obligations.

10. Commission review of the Plan is an important step in the development of retail choice for consumers in PP&L's service territory. The Commission's decision will have a lasting impact on the extent and pace of the

development of competition, the types of services offered and the prices charged by electric generation suppliers offering service to present customers of PP&L.

NEV's Interests In This Proceeding

11. NEV seeks intervention in this proceeding to identify certain deficiencies in PP&L's restructuring plan and to oppose Commission approval thereof.

12. NEV has a unique perspective on this issues in this case. NEV is a national leader in the formation of retail energy power purchasers groups. NEV negotiates with energy suppliers nationwide to get the lowest electricity prices through the collective purchasing strength of its buyers' group members. The members, in turn, maximize savings and receive the individual energy supply options which they need. NEV also acts as an advocate on its members' behalf in the development of electric restructuring policies at regulatory agencies and state legislatures. Membership in NEV is completely open and members pay nothing to join NEV. Members only pay NEV when they realize energy cost savings; other marketers, brokers and suppliers of electricity tack a mark-up on all customer purchases.

13. NEV intends to buy electric power on behalf of members in PP&L's service territory. NEV is keenly interested in the specific terms and procedures for the purchase, sale and delivery of electric power in Central and Northeastern Pennsylvania. These terms and procedures will directly impact NEV's ability to compete in this marketplace.

14. NEV is particularly capable of providing insight into the issues before the Commission.

15. NEV has experience in retail electric power restructuring in the states of California, Massachusetts and New York and has participated -- or is participating -- in proceedings similar to this one in each of those states. NEV is recognized as a qualified energy marketer by FERC and in California and Rhode Island. NEV has participated extensively in the Pennsylvania proceedings, having filed comments in the "Working Group" efforts and rulemakings and commenting on the utility pilot program proposals.

16. NEV has been granted active intervenor status in the restructuring proceeding before this Commission relating to PECO Energy Company, Docket No. R-00973953.

17. The president of New Energy Ventures Mid-Atlantic is David Boonin. Mr. Boonin has extensive energy industry experience. He most recently had his own energy and utilities industry consulting practice, and also served as a senior advisor to Hagler Bailly Consulting, a national energy consultant. Before that, he was executive director of the Philadelphia Gas Commission, the regulatory body that oversees the Philadelphia Gas Works, the largest municipal natural gas utility in the U.S. Earlier, he was director of utility and regulatory affairs for the City of Philadelphia, and a member of the Philadelphia Gas Commission. Boonin's experience also includes

service as a corporate economist and Supervisor of Energy and Economic Forecasts for United Illuminating Co., a New Haven, CT electric utility. Prior to 1983 Boonin also served as Chief Economist for the Pennsylvania Public Utilities Commission.

18. As an entity that will be closely involved in the process of purchasing power competitively on behalf of its members, NEV is extremely concerned about various portions of PP&L's proposed Plan that will restrict consumer choice, limit consumer information and negatively impact the energy savings that would otherwise be available to consumers in a competitive marketplace.

19. While NEV's review of PP&L's plan and related filings is continuing and NEV reserves the right to challenge any aspects thereof, at this stage in its review (and subject to other intervention petitions), NEV expects to present testimony with respect to two general areas:

(a) NEV expects to set forth appropriate methodology for unbundling generating costs based on "prevailing market prices" and full recovery of "all reasonable costs". In that regard, NEV expects to explore the appropriate relationship among the unbundled generation price, the price cap and the determination of Competitive Transition Charges. NEV expects to present Mr. Boonin as an expert witness with respect to these matters.

(b) NEV expects to support the opportunity for alternative energy suppliers to provide full billing and metering services to their customers; to advocate for

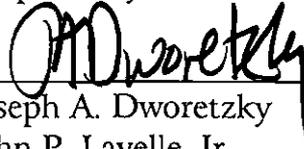
the necessity for unbundling metering and billing charges; and to identify the potential of billing aggregation for single entity users with multiple sites. NEV expects to present Nancy I. Day, Vice President - Customer Service of NEV, as an expert witness with respect to these matters.

20. NEV has an interest which will be directly affected and which is not adequately represented by existing participants, and as to which NEV may be bound by the Commission's action. NEV is in the process of preparing an application for an electric supplier license and intends to purchase for its members competitive retail electric services in PP&L's service territory. The basis on which such purchases will be made will be directly affected by the Commission's decision in this proceeding, and, thus, NEV has standing to participate as an active party in this proceeding. NEV has a direct and substantial interest in the subject matter of the proceeding.

21. Participation by NEV is in the public interest.

WHEREFORE, for all the foregoing reasons, NEV respectfully requests the Commission to grant this Petition and approve NEV's intervention as an active party of record in this proceeding.

Respectfully submitted,



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John P. Lavelle, Jr.

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Attorneys for New Energy Ventures, Inc.

Dated: June 9, 1997

CERTIFICATE OF SERVICE

I hereby certify that on June 9, 1997, I caused a true and correct copy of New Energy Venture's Petition to Intervene, to be served in the manner indicated, upon the following counsel by regular mail upon the following parties:

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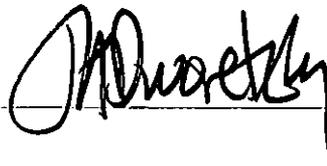
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June 10, 1997

VIA FEDERAL EXPRESS

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Pennsylvania Public Utility Commission
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**Re: Pennsylvania Power & Light Company
Restructuring Plan
Docket No. R-00973954**

Dear Mr. McNulty:

Attached for filing, pursuant to the Commission's regulations, 52 Pa. Code § 5.342(d), is a Certificate of Service identifying answers to interrogatories that Pennsylvania Power & Light Company served today on the active participants in this proceeding.

If you have any questions regarding this matter, please call.

Very truly yours,

Paul E. Russell/dlr

Paul E. Russell

Attachment

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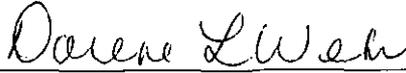
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Dated this 10th day of June, 1997.



Dorene L. Wehr



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June 10, 1997

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JUN 10 1997

PA PUBLIC UTILITY COMMISSION
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**Re: Pennsylvania Power & Light Company
Restructuring Plan
Docket No. R-00973954**

Dear Mr. McNulty:

Attached for filing, pursuant to the Commission's regulations, 52 Pa. Code § 5.342(d), is a Certificate of Service identifying answers to interrogatories that Pennsylvania Power & Light Company served today on the active participants in this proceeding.

If you have any questions regarding this matter, please call.

Very truly yours,

Paul E. Russell/dlw

Paul E. Russell

Attachment

DOCUMENT
FOLDER

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

ORIGINAL

Pennsylvania Power & Light Company :
Restructuring Plan Filing : Docket No. R-00973954

CERTIFICATION OF SERVICE

I hereby certify that I have this day served a true copy of Pennsylvania Power & Light Company's answers to the Environmentalists' Interrogatories, Set 1, Questions 56-60, and Set 3, Questions 148, 164, 168, 170-172, 175-179, 181, 183-188 upon the active participants listed below, in accordance with the requirements of §1.54 (relating to service by a participant):

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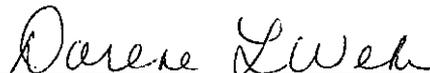
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Dated this 10th day of June, 1997.



Dorene L. Wehr



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JUN 10 1997

PA PUBLIC UTILITY COMMISSION
PROTHONOTARY'S OFFICE

**Re: Pennsylvania Power & Light Company
Restructuring Plan
Docket No. R-00973954**

Dear Mr. McNulty:

Attached for filing, pursuant to the Commission's regulations, 52 Pa. Code § 5.342(d), is a Certificate of Service identifying answers to interrogatories that Pennsylvania Power & Light Company served today on the active participants in this proceeding.

If you have any questions regarding this matter, please call.

Very truly yours,

Paul E. Russell/dew

Paul E. Russell

Attachment

DOCUMENT
FOLDER

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

ORIGINAL

Pennsylvania Power & Light Company :
Restructuring Plan Filing : Docket No. R-00973954

CERTIFICATION OF SERVICE

I hereby certify that I have this day served a true copy of Pennsylvania Power & Light Company's answers to the PP&L Industrial Customer Alliance Interrogatories, Set V, Question 6 upon the active participants listed below, in accordance with the requirements of §1.54 (relating to service by a participant):

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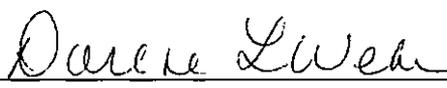
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Dated this 10th day of June, 1997.



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June 10, 1997

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97 JUN 12 AM 10:31

Re: Pennsylvania Public Utility Commission v. Pennsylvania Power & Light Company - Docket No. R-00973954

Dear Mr. Russell:

Enclosed are two copies of the Pennsylvania Petroleum Association's Interrogatories and Document Requests to Pennsylvania Power & Light Company, Set A, numbered 1 - 21. A Certificate of Service is attached.

Very truly yours,

Usher Fogel
Usher Fogel

DOCUMENT
FOLDER

UF/mac

Enclosures

cc: Active parties *(by first class mail)*

James J. McNulty, Deputy Prothonotary - *Certificate of Service only*

John P. Zinkand

CERTIFICATE OF SERVICE

Re: Pennsylvania Public Utility Commission
v.
Pennsylvania Power & Light Company
(Application for Approval of a Restructuring Plan)
Docket No. R-00973954

I hereby certify that I have this day served the foregoing document,
"Interrogatories and Document Requests of the Pennsylvania Petroleum Association, Set
A", by first class mail, postage prepaid, upon the parties of record in this proceeding.

Dated at Albany, New York, this 10th day of June, 1997.

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97 JUN 13 AM 9:44

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SHELBY L. PROVENCHER

June 10, 1997

TELEPHONE
202/429-8800

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DOCKETED
JUN 16 1997

Via Overnight

Pennsylvania Public Utilities Commission
Office of Prothonotary
P.O. Box 3265
Harrisburg, PA 17105-3265

KJR

Re: *PP&L's Restructuring Plan*, Docket No. R-00973954

Dear Sir or Madam:

Please add my name as an interested party to the service list in Docket No. R-00973954, *PP&L's Restructuring Plan*. Thank you for your cooperation.

Joelle Ogg
John & Hengerer
1200 17th Street, NW
Suite 600
Washington, D.C. 20036

(202) 429-8812 (phone)
(202) 429-8805 (fax)

If you have any questions, please do not hesitate to call me at (202) 429-8812.

Sincerely,


Joelle Ogg

MEM

COMMONWEALTH OF PENNSYLVANIA

DATE: June 11, 1997

SUBJECT: R-00973954

TO: Office of Administrative Law Judge

FROM: *WJB* John G. Alford, Secretary

APPLICATION OF PENNSYLVANIA POWER & LIGHT COMPANY
FOR APPROVAL OF ITS RESTRUCTURING PLAN

Attached is copy of a Petition to Intervene of the American Association of Retired Persons (AARP) filed in connection with the above docketed proceeding.

This matter is assigned to your Office for appropriate action.

Attachment

cc: OTS

wjz

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Pennsylvania Power & Light Company

Two North Ninth Street • Allentown, PA 18101-1179 • 610/774-5151

ORIGINAL

Paul E. Russell
Associate General Counsel
610/774-4254

FAX: 610/774-6726

June 11, 1997

001113

VIA FEDERAL EXPRESS

James J. McNulty, Esquire
Prothonotary
Pennsylvania Public Utility Commission
North and Commonwealth Streets
Harrisburg, Pennsylvania 17120

KJR

Re: Pennsylvania Power & Light Company
Restructuring Plan
Docket No. R-00973954

RECEIVED
PROTHONOTARY'S OFFICE

97 JUN 11 PM 12:22

Dear Prothonotary McNulty:

Enclosed are Pennsylvania Power & Light Company's (PP&L) answers to the Office of Small Business Advocate's Interrogatories identified in the attached Certificate of Service. As indicated in that Certificate of Service, copies of PP&L's answers have been served on all active participants in this proceeding.

If you have any questions regarding these answers, please call.

Very truly yours,

Paul E. Russell/dlw

Paul E. Russell

Enclosures

cc: Certificate of Service

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

ORIGINAL

Pennsylvania Power & Light Company :
Restructuring Plan Filing : Docket No. R-00973954

CERTIFICATION OF SERVICE

I hereby certify that I have this day served a true copy of Pennsylvania Power & Light Company's answers to the Office of Consumer Advocate's Interrogatories, Set X, Questions 7 and 8 upon the active participants listed below, in accordance with the requirements of §1.54 (relating to service by a participant)

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Dated this 11th day of June, 1997.



Dorene L. Wehr

COMMONWEALTH OF PENNSYLVANIA

DATE: June 12, 1997

SUBJECT: R-00973954

MEM

TO: Office of Administrative Law Judge

FROM: *WGP* John G. Alford, Secretary

APPLICATION OF PENNSYLVANIA POWER & LIGHT COMPANY
FOR APPROVAL OF ITS RESTRUCTURING PLAN

Attached is copy of a Petition to Intervene of New Energy Venture's filed in connection with the above docketed proceeding.

This matter is assigned to your Office for appropriate action.

DOCKETED

JUN 13 1997

Attachment

cc: OTS

wjz

**DOCUMENT
FOLDER**