

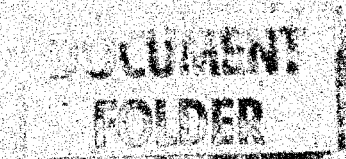
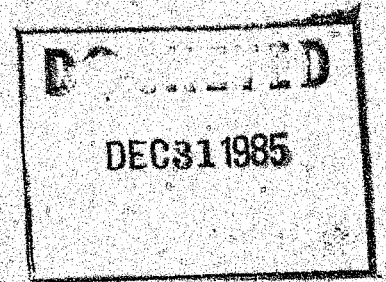
DEC 26 1985

COMMISSIONER'S OFFICE
PENNSYLVANIA PUBLIC UTILITY COMMISSION
PECO STATEMENT NO. 10

JK 12/20/85 Hbg
R-850152

PENNSYLVANIA PUBLIC UTILITY COMMISSION V.
PHILADELPHIA ELECTRIC COMPANY,
Docket No. R-850152

DIRECT TESTIMONY OF
WILLIAM A. ABRAMS



LIMERICK 1 AND COMMON PLANT
FINANCIAL MANAGEMENT

SEPTEMBER 27, 1985

PHILADELPHIA ELECTRIC COMPANY

DIRECT TESTIMONY OF WILLIAM A. ABRAMS

1 Q. Please state your name and business address.

2 A. My name is William A. Abrams. I am Group Vice President of Duff &
3 Phelps Inc., 55 East Monroe Street, Chicago, Illinois.

4 Q. Describe briefly your educational background and business experience.

5 A. I received a Bachelor of Science of Commerce degree from Loyola
6 University (Chicago, Illinois) in 1951, majoring in business
7 administration.

8 From 1951 through 1957, I worked for several firms in industry.
9 I was responsible for various phases of credit analysis and approval
10 for Walter E. Heller Company and Steel Products Engineering Company,
11 Inc. In 1953, I joined Uniroyal, Inc., where I was involved in sales
12 administration, contract cancellation negotiations, production
13 coordination, forecasting and accounting.

14 In 1958 and 1959, as a principal of Curran, Bayliss & Glasgow,
15 Inc., a management consulting firm, I performed analyses of and made
16 recommendations for improvement of client internal operational
17 systems, evaluated merger-acquisition situations, and consulted on
18 financial planning. From 1960 until 1967, I was engaged in corporate
19 finance, initially as Assistant to the President of Hyman-Michaels
20 Company and subsequently with Benjamin Lewis & Company, investment
21 bankers. I was responsible for negotiating large railroad and other
22 types of equipment lease transactions financed by private placement
23 with institutions, merger-acquisitions, private corporate financing
24 and municipal bond underwriting.

25 I joined Duff & Phelps in 1967 as a senior financial analyst to

1 perform special company valuation studies and to analyze the
2 securities of companies principally in the electric equipment
3 industry. From 1969 to the present, I have been in our Utility
4 Research Division. Until 1980, my primary responsibilities had been
5 to analyze a group of individual utility companies particularly in
6 California, the Mid-West and the East Coast. My work included
7 analysis of the earnings potential of these companies, their financing
8 requirements, coverage ratios of interest and preferred dividends, and
9 the cash coverage of the common dividend. From 1974, I was also
10 Chairman of our Utility Fixed Income Rating Committee. I regularly
11 consulted with and advised our clients on public utility fixed income
12 and common stock investment and was a member of the Senior Officer
13 Committee, which reviews and finalizes the Duff & Phelps' Regulatory
14 Rankings.

15 Since 1980 my responsibilities have been entirely with the Duff
16 & Phelps' Fixed Income Rating Service. I am Vice Chairman of the Duff
17 & Phelps' Fixed Income Rating Committee. As a member of this
18 Committee, I participate in interviewing and analyzing companies and
19 assigning ratings to their fixed income securities.

20 Q. Have you testified in other regulatory proceedings?

21 A. I have testified before the California, Michigan, Minnesota, New York,
22 North Carolina, Maine, Mississippi, Nevada, Kansas and Indiana
23 Commissions, the Georgia Legislative Committee on Utility Regulation,
24 and before FERC on the subjects of rate of return, financing, and
25 factors affecting credit ratings.

26 I have lectured on rate regulation, utility financing, and the
27 analysis of public utility companies and their securities to classes

1 of graduate students at Northwestern University and as guest faculty
2 member for the Executive Development Center seminars sponsored by the
3 University of Illinois and the University of Notre Dame. I have given
4 speeches and served on panels on utility matters before investor,
5 utility, and expert witness groups; the PUR Financial Conference;
6 Edison Electric Institute conferences; the Iowa State University
7 Regulatory Conference; Merrill Lynch Capital Markets seminars; and the
8 Society of Rate of Return Witnesses. I write articles on utility
9 related subjects for publication in "Credit Decisions," a weekly
10 credit review published by Duff & Phelps.

11 Q. Are you a chartered financial analyst?

12 A. Yes. On the basis of my experience and a series of written
13 examinations, I was awarded the professional designation of Chartered
14 Financial Analyst by the Institute of Chartered Financial Analysts in
15 1971.

16 Q. Are you a member of any professional organizations?

17 A. Yes. I am a member of the Investment Analysts Society of Chicago; the
18 Fixed Income Group of the Chicago Society; and the Utility and
19 Telecommunications Securities Club.

20 Q. Please describe the business of Duff & Phelps.

21 A. Duff & Phelps is a large independent investment research organization.
22 The utility division of Duff & Phelps is retained in a professional
23 advisory capacity for advice and consultation on investments in public
24 utilities' securities by more than 250 financial organizations. Our
25 clients include the following types of investors: insurance
26 companies, banks, trust companies, mutual funds, universities, and
27 pension and retirement funds. In addition, we have as clients a

1 number of investment counseling and securities firms. Thus, directly
2 and indirectly, Duff & Phelps provides independent, objective,
3 professional investment research to a very large cross section of
4 investors of all types. For the purpose of providing our clients with
5 information concerning investment risks, we have for many years rated
6 the fixed income securities of utility, industrial and financial
7 companies. Since 1980, our ratings have been public. In developing
8 these ratings and the factors which influence them, it is our purpose
9 to focus on those factors we consider to be related to risk. Duff &
10 Phelps does not act as broker, dealer, or underwriter of securities.

11 Q. What is the purpose of your testimony in this proceeding?

12 A. My testimony presents my views and those of Duff & Phelps respecting
13 the financial condition of the electric utility industry in the 1970s,
14 the causes of the degrading of the industry's financial condition and
15 the similar experience of Philadelphia Electric Company (PECO) during
16 that period. Further, against the background of the previously
17 presented financial data, I will present my and Duff & Phelps' views
18 about the reasonableness and necessity of the Company's 1976 and 1978
19 decisions to reduce its capital expenditures from the point of view of
20 the effect of those decisions upon its financial condition and risk.
21 I also will present my judgment as to whether the Company could have
22 raised in excess of \$1.0 billion additional capital during the period
23 1976 to 1981, that amount of capital being the amount which I am
24 advised by the Company would have been required to permit advanced
25 Limerick Project completion absent substantial additional rate relief.

26 Q. How have you organized your testimony?

27 A. I begin with a description of how Duff & Phelps evaluates the

1 financial integrity of electric utilities and then describe the
2 factors which control our assignment of credit ratings. As part of
3 this discussion, I explain the effect which regulation and its
4 decisions respecting specific issues of importance to the investment
5 community has upon those evaluations.

6 Next, I describe the financial condition of PECO and the
7 electric industry in the 1970s, the substantial forces which changed
8 that condition adversely and the effect of those changes upon
9 investors' perception of the industry.

10 Finally, I present my and Duff & Phelps' evaluation of PECO's
11 decisions in 1976 and 1978 to reduce its capital expenditures and of
12 whether the Company could have raised the additional capital needed to
13 permit an earlier plant completion.

14 Q. How do you define financial integrity?

15 A. Financial integrity refers to the soundness or stability of the
16 enterprise. This means the ability of the business to resist downward
17 financial pressures and the existence of sufficient buffers from
18 unexpected adverse developments so that any distortions can be quickly
19 remedied without impairing either the orderly conduct of the business
20 or the credit quality of the outstanding and future fixed income
21 securities. In other words, we examine the stability and protection
22 of the income stream. It also means the assurance of confidence in
23 the earnings return potential of the enterprise so that capital --
24 both debt and equity -- can be attracted on a reasonable basis.

25 Q. What analysis is made to ascertain the financial integrity of a
26 utility company?

27 A. There are two parts to any analysis of a utility company to determine

1 its financial integrity. The analysis is both qualitative and
2 quantitative.

3 Qualitative aspects for an electric utility (on both a current
4 and prospective basis) include the viability of the service area
5 (jobs, industrial diversification, sales outlook, state and local
6 government policies); power supply (reserve margins, age of units,
7 purchase power sources); fuel supply (diversity, cost, availability);
8 regulatory principles (extent of recognition of operating costs,
9 capital costs and cash flow needs, and consistency); management
10 (recognition of problems and development/implementation of solutions,
11 depth); quality of earnings (cash generation), and quality of balance
12 sheet (capital structure, off balance sheet financing, liquidity).

13 To quantify the financial protection, certain measures are used.
14 For example, we look for coverages, principally excluding AFC, to be
15 steady within a range appropriately reflecting other risks to which
16 the business is exposed. The capital structure must contain
17 sufficient equity support to protect the senior securities. The
18 forward construction program and other funds needs relative to the
19 size of the company are examined to ascertain whether the required
20 capital growth rate will be a strain. Returns allowed and earned must
21 be sufficient to attract capital for the ongoing needs of the company.

22 Q. Are credit ratings based just on historical data, or are ratings also
23 determined on the basis of anticipated results?

24 A. The historical financial record of a company and its current status
25 are certainly important to demonstrate how a company has been run, how
26 it has been regulated, and how its problems have been solved. A
27 company with a long record of poor financial performance generally

1 must demonstrate a long period of sustained improvement before it will
2 be upgraded. This is in contrast to a company with good financial
3 stability that experiences a temporary dip in performance which is
4 quickly corrected.

5 Business characteristics interact with financial standards, and
6 where there are unfavorable business characteristics, there must be
7 offsetting financial protection. Conditions external to the company
8 can add to risks.

9 The history of the company is studied to give some perspective
10 to the future. The past record gives credibility to future
11 assumptions. That future view must recognize to what extent ongoing
12 conditions are apt to be different from the past. Naturally, the
13 longer the future period the less clear is the picture. The rating
14 agency attempts to forecast the safety or absence of major problems of
15 quality deterioration over the next year, the next three years, the
16 next five years, etc. It calculates, for example, whether a company
17 can attract from the market the money it will need to finance its
18 construction commitments, or to meet other funding requirements such
19 as debt maturities while achieving or maintaining coverages and other
20 financial ratios satisfactory for its particular quality rating.

21 Q. What is the role of regulation in the financial integrity of a
22 utility?

23 A. Investors, investment advisors, and rating agencies such as Duff &
24 Phelps regard regulation as a key factor in assessing a utility
25 company. A utility's financial condition is assessed on many bases
26 all of which are related to the ability of the company to earn a
27 realistic rate of return, the cash quality of those earnings, the

1 stability of earnings trends, and moderation of the company's need to
2 finance externally. Important considerations are the allowed rates of
3 return; proper recognition of test year sales, expenses, and rate
4 base; the relationship of the test year and timing of the rate
5 increase to the period when those rates will be in effect; and, the
6 recovery of capital. Built into these considerations are the
7 mechanisms in place which enable rates to be adjusted to recognize
8 swings in major costs which might not be capable of accurate
9 forecasting. An example is the fuel clause and the timeliness of its
10 operation. To the extent that rising fuel costs are not offset in
11 their entirety or in a timely manner, business risk is increased and
12 financial risk must be decreased. This requires a stronger capital
13 structure (higher common equity support), and a higher level of
14 interest and preferred stock coverage to maintain the financial
15 integrity of the company. All of these items must be considered in
16 rating a company.

17 Q. Why is the recognition of rate base considered important by investors?

18 A. Unlike most other industries, the utility company is required by its
19 franchise to meet the demand of its territory. The plant it builds is
20 highly capital intensive relative to the revenue it can generate.
21 Construction lead time for generating plant is long. The plant is not
22 multi-use, and cannot itself be sold or transported into different
23 markets, although its energy output may be sold. Plant is built
24 under these long lead times based on projections of customer demand
25 growth. Projections of growth are based on past trends and best
26 intelligence of future outlook. Plant also may be started (or built)
27 to diversify fuel sources (e.g., away from oil/gas) and, of course, to

1 replace aging units. Further, in many cases, the plant must be
2 designed of a size that results in extra capacity when the unit goes
3 into service. Substantial funds must be expended for preliminary
4 engineering, environmental studies and various regulatory approvals
5 before ground is even broken.

6 A radical decrease in demand patterns can occur during the
7 construction phase. Also, other outside changes can alter the
8 economic feasibility or even prevent the completion of the unit. For
9 example, inflation, rapidly rising capital costs and mandated design
10 changes of the past half-dozen years have raised the cost of nuclear
11 plants far beyond initial estimates. Political opposition may also
12 develop to oppose a construction project on environmental grounds.

13 If recovery of cost and a return on capital investment in a
14 plant is not permitted, investors will be loath to put new money into
15 utilities in that state. Ratings will reflect the added risk and any
16 funds which may be available for future service of the ratepayer will
17 be at higher cost. Given the importance of the rate base issue in
18 today's investment environment and typical utility involvement with
19 large construction work in progress balances, unfavorable Commission
20 action on this issue alone can precipitate downgrades which cannot be
21 reversed for many years.

22 Q. Are the investor and the rating agency concerned with utility cash
23 flow and regulatory position on issues which could enhance cash flow
24 in their appraisal of the financial integrity of a utility company?

25 A. Yes. For example, a current cash return on CWIP is very important.
26 The debt holder is concerned about the protection (coverage) of the
27 company's interest obligation. As mentioned above, interest must be

1 paid in cash, not AFC which is a non-cash credit. Therefore, to what
2 extent CWIP is included in rate base or some other form of current
3 rate support for construction is provided became, in the early 1970's,
4 one of the key factors considered by Duff & Phelps.

5 If no current "cash" rate support is provided, increased CWIP
6 balances cause a wider spread between coverages including AFC and
7 coverages excluding AFC. When this happens, investors realize that a
8 large proportion of their utility investment is not earning a cash
9 return and the cash protection of interest payments is less. The
10 financial integrity of a utility company becomes weaker as its non-
11 earning assets become larger unless a compensably higher return is
12 achieved on the earning assets. Investors recognize that where
13 regulatory bodies permit no cash earnings on investment under
14 construction, the financial integrity is in jeopardy and, for that
15 reason, tend to regard such companies as having more risk than would
16 otherwise be the case.

17 To the extent plant under construction is not in the rate base
18 with a revenue return, the total cost of the plant increases, and
19 higher rates must be charged when the plant goes into service.

20 Q. You earlier mentioned that debt holders are concerned with the
21 protection of interest obligations as measured by coverages. How does
22 Duff & Phelps assess coverages?

23 A. Coverages can be calculated on a pre-tax or on an after-tax basis.
24 These are also considered including or excluding AFC. Duff & Phelps
25 uses pre-tax coverages excluding AFC as the primary indicator. Major
26 non-cash earnings effects from accrued revenues and/or expense
27 deferrals are also considered.

1 Q. Can you explain why this is so?

2 A. Yes, I would like to explain why we consider coverages excluding AFC
3 as the primary indicator. AFC is an accounting method which
4 recognizes that the capital costs of debt and equity used during
5 construction are part of the total cost of building plant to serve the
6 utility's customers. Thus, these costs have to be added to the
7 construction work in progress asset which ultimately becomes rate
8 base. To accomplish this, reported earnings are credited (increased)
9 by AFC based on a formula designed to compensate for the equity and
10 debt funds used each year for construction. For each accounting
11 period, the amount of AFC increases retained earnings on one side of
12 the balance sheet and the CWIP account on the other side of the
13 balance sheet. The AFC is also compounded. By this, I mean that AFC
14 builds upon AFC as well as on labor and hardware costs during the
15 construction period. The expectation is that the company will earn a
16 future return on the accumulated AFC when the construction project is
17 completed, put into rate base, and is allowed a revenue return. AFC
18 is then depreciated as part of the total plant account.

19 I said above that AFC is an accounting treatment. There are
20 accounting treatments to record all of a company's transactions. The
21 fact that an accounting treatment is correct from a recording
22 standpoint does not mean that the event or business condition it is
23 recording is desirable. An example I have used is that there is an
24 accounting treatment to record uncollectible accounts receivable.
25 While uncollectible receivables are a fact of business and they must
26 be accounted for, they are not desirable. The larger they are, the
27 less desirable the condition of the company. My point in this example

1 is that the financial condition which underlies the accounting
2 treatment is what must be analyzed in determining a company's
3 financial integrity.

4 Until recent years, it was never thought that non-cash earnings
5 would reach the proportion of reported earnings that it has today nor
6 that it would continue as a major part of earnings for such an
7 extended period of time. This condition has been brought about by
8 several factors:

- 9 1. the inflation rate (actual and anticipated) which has raised the
10 cost of all capital;
- 11 2. the inflation rate and government regulations which have
12 increased the cost and extended the completion time of plant;
13 and,
- 14 3. the inadequate levels of earned returns on operations.

15 The real world expects to be paid in cash. No company can
16 operate for long without impairing its financial integrity when major
17 and ever-increasing portions of its reported earnings are composed of
18 non-cash, bookkeeping entries. The utility company must pay dividends
19 and interest in cash. It has to pay its contractors on a construction
20 project in cash. So, too, it must have cash to pay its suppliers of
21 fuel, its labor, and its taxes. It takes cash to carry the company's
22 accounts receivable. When that cash is not earned, the company has to
23 enter the capital markets for the cash to pay its bills and honor its
24 construction commitments. This process increases capital costs,
25 increases AFC, and reduces real earnings.

26 Recognizing that interest has to be paid in cash, we use the
27 pre-tax coverage of interest excluding AFC to measure the protection

1 which cash earnings provide to the debt holder. In our assessment of
2 reported coverages, we also consider deviations caused by major non-
3 cash earnings produced by various revenue accruals, expense deferrals,
4 and off balance sheet obligations.

5 Q. What were the investor views of the Electric Utility industry during
6 the 1970's when Philadelphia Electric elected to delay the Limerick
7 Nuclear station?

8 A. Investors were concerned with a number of basic fundamental changes
9 which had and were continuing to affect the electric utility industry.

- 10 1. Rapidly rising operating and capital costs.
- 11 2. Regulatory changes.
- 12 3. The economy and electric utility sales prospects.
- 13 4. Financial deterioration.

14 Q. Could you describe the trend in operating and capital costs?

15 A. Yes. Through the mid-1960's, the electric utilities were a declining
16 cost industry. New technology and economies of scale enabled the
17 industry to effect unit price reductions. Of course, this had the
18 effect of contributing to sales growth which, in turn, lowered capital
19 costs per unit of Kwh. From 1960 to about 1965, the industry "rode
20 down the reserve" as sales grew rapidly into available capacity.

21 In the mid-1960's a new building program was initiated by the
22 industry. This was done in response to the outlook for continued
23 rapid sales increases and the national concern for low reserve margins
24 which was highlighted by the New York City blackout of 1963. Remember
25 that, in the 1960's, the industry still had in service many "tea
26 kettles", generating units from the 1920-1940's that were small,
27 relatively inefficient, and aging.

1 As this new building program got underway, the national economic
2 conditions began to change. Inflation accelerated, and interest rates
3 responded to actual and anticipated inflation, to the rising trend of
4 government and corporate borrowings, and to the surge of electric
5 utility company financings.

6 In the second half of the 1960's, there developed a national and
7 local concern for the environment. The utility companies, encouraged
8 by price and need to reduce coal emissions, converted older coal units
9 to oil and built large, new oil units. However, by the late 1960's,
10 low sulphur oil was mandated in many areas. This type of oil was in
11 shorter supply, and the higher price drove up fuel costs in the late
12 1960's and early 1970's. The 1973 Arab oil embargo was a major shock
13 to operating expenses. The quantum oil price increase in 1973-74 was
14 followed by a complete revamping of fuel pricing. Thus, gas and coal
15 followed oil in the upward spiral through 1980. Through this same
16 period, the use of low sulphur coal or scrubbers was mandated, further
17 driving up operating and capital costs.

18 Of the 95 major U.S. electric utility companies, about 70 became
19 involved in nuclear power plant construction. The capital costs of
20 these units were large relative to imbedded capacity, and grew rapidly
21 with NRC changes and licensing delays.

22 Q. What regulatory changes affected the electric utilities through the
23 1965-80 period?

24 A. The principal regulatory changes occurred in three areas of
25 regulation.

26 1. Environmental

27 2. NRC

1 3. State regulation and FERC

2 These areas are not entirely separable because the costs imposed
3 by environmental agencies and the NRC must be faced by the state
4 regulatory commissions and the FERC.

5 In the late 1960's, the national, state, and local concerns for
6 the environment exploded. As mentioned above, SO₂ restrictions
7 locally mandated higher cost fuels and, in many cases, scrubbers.
8 This required higher cost fuel (and/or fuel transport costs) and also
9 reduced the utilities' ability to bargain as successfully in
10 negotiating for fuel supplies. Scrubbers added to capital costs and
11 reduced plant efficiency. So too did environmental impact studies and
12 plant siting requirements. In 1978, the Power Plant and Fuel Use Act
13 moved to set priorities for so-called premium fuels with the electric
14 utilities the lowest priority.

15 At the same time, nuclear concerns (indeed, anti-nuclear
16 sentiment) surfaced. This led to more and more stringent NRC safety
17 requirements, plant retrofit, redesign and construction delays. Of
18 course, the 1979 TMI incident served to multiply NRC changes for
19 plants nationwide.

20 These environmental and NRC changes were made with no concern to
21 capital cost or economies of operation. Of course, the bread basket
22 of higher expenses (environmental, NRC, rate base additions, operating
23 and capital) came home to the regulatory commissions in the form of
24 rate requests.

25 My perception of the state regulatory bodies is that they were
26 ill prepared to handle the surge of rate increase requests that began
27 in the late 1960's. Most important initially were rate lag and

1 recognition of inflation and cost of capital. Schedule 1 shows the
2 rise in rate cases filed and decided from 1970-80.

3 Rate cases took one to several years to decide. Most test
4 periods adopted were historic and did not reflect the ongoing rate of
5 inflation. The regulators generally took the position that, even
6 though inflation existed in the test year, it would stop. Similarly,
7 although the cost of money was demonstrably higher in the test year
8 and at the time of the order, regulators tended to look backward.
9 Thus, allowed rates of return were lower than the true cost of
10 capital.

11 Similarly, the regulators refused to recognize the burgeoning
12 cash needs of the electric utility industry. The quality of earnings
13 became an ever more important issue as the industry struggled to raise
14 depreciation rates, utilize deferred accounting for income tax
15 benefits, and obtain a revenue return on construction work in
16 progress.

17 Investors had come to realize that the utility companies could
18 not pay their bills with ever mounting AFC credits. These concerns
19 were evident in the drop of the industry's P/E multiple which peaked
20 at 24.7x's in 1961, slipped to 22.7x's in 1964, then dropped to
21 18.8x's in 1966, and trended downward from 16.3x's in 1967 to 11.9x's
22 in 1972. When Consolidated Edison of New York passed its dividend in
23 March 1974, the investor focus on cash intensified and solidified.
24 The industry P/E multiple dropped to 6.4x's. The industry decline
25 resulting from the Con Ed dividend action was exacerbated by the 1973
26 oil embargo and the ensuing quantum jump in fuel prices. Investors
27 and their advisors began to calculate interest coverages and dividend

1 coverages excluding AFC. These data are shown in my Schedule 2.

2 Rate hikes to cover fuel cost increases (even though some states
3 deferred increases thereby exacerbating the cash problems of the
4 companies) focused greater public and media attention on the
5 utilities. Investors became increasingly concerned whether rate
6 treatment would be adequately responsive. At the same time, various
7 interest groups pushed conservation, alternate energy, no growth
8 scenarios casting a public pall on the concept of new central station
9 generating plants. Regulation in some states reacted by delaying rate
10 cases, switching to elected commissions, abandoning fair value
11 principles, and generally opening hearings to more intervenor groups.
12 Rate design was changed to promote conservation, minimize residential
13 price increases, and often to reduce sales.

14 It took until the late 1970's for regulation in general to gear
15 up to the press of a far larger number of rate case filings (annually
16 for many companies), to recognize more nearly the cost of money, to
17 update test years, and to provide measures to help halt the erosion in
18 earnings quality.

19 Q. Did the economic conditions from 1965-80 affect investors' concerns
20 about the electric utilities?

21 A. Yes. Certainly the persistence of inflationary trends was recognized
22 as having an adverse impact on the capital intensive electric utility
23 industry. Many major investors got out of utility equities. Lower
24 quality securities became more difficult to sell. Some companies
25 avoided (by recourse to banks, for example) selling debt which might
26 lead to a debt rating downgrade.

27 Q. What was the electric utility industry's performance during this

1 period of turmoil?

2 A. The table of selected financial data (Schedule 3) shows the following:
3 Debt ratios slowly began to retreat from the 1970 peak level of 57.1%,
4 reaching the 52% to 53% range by 1978-80 which was the approximate
5 ratio during the early 1960's. Annual capital growth expanded rapidly
6 from 12% in 1970 to 14.2% in 1974. This measure eased in 1975-78 as
7 the industry completed, cancelled, or delayed plant construction.

8 Average debt interest costs increased steadily with steady
9 borrowings at new debt rates above imbedded rates. Thus, this measure
10 increased from 5.3% in 1970 to 9% by 1980. Returns earned on common
11 equity held near 12% until 1974 when fuel prices and far higher
12 capital costs drove the return down to 10.4%. This measure partially
13 recovered in 1975 and fluctuated upward to 12% again in 1980.

14 AFC steadily rose, reaching 53% of balance for common by 1980.
15 The income tax rate, a composite measure of earnings quality, declined
16 steadily in 1970-74 as AFC rose. This measure improved for several
17 years through 1978 with increased provisions for income tax deferrals;
18 the subsequent decline reflected the big increases in AFC relative to
19 earnings.

20 In this environment, coverages excluding AFC declined steadily
21 from 3.1x's in 1970 to 2.2x's in 1974. A four-year partial recovery
22 was reversed in 1979 and coverages returned to 2.2x's in 1980.

23 The performance of the industry common stock capsulized the
24 attitude of the investor during this period. Thus, the market to book
25 ratios (which were 200 to 280 from 1960-68) had declined to 163 in
26 1970. The drop to 102 in 1973, as a result of the oil embargo in the
27 fall of that year, was shortly followed by Consolidated Edison of NY

1 passing its dividend. This action crystalized in the investors' minds
2 the underlying cash strain problems of the industry and the market to
3 book ratio fell to 70. Except for several years again near unity,
4 this ratio retreated in the late 1970's as inflation and interest
5 rates expanded, with the sharp fuel price hikes again in 1979 and (for
6 nuclear companies) the 1979 TMI nuclear accident.

7 Q. Can you describe Philadelphia Electric Company as it existed in 1970?

8 A. Yes. Philadelphia Electric entered the 1970's with low reserve
9 margins and sales and peak load growth which, though below the
10 industry average, was high for a mature territory. In 1970, 51% of
11 generating capacity was oil fired. In that year, 56% of the energy
12 generated was by oil.

13 Q. What was the financial position of Philadelphia Electric Company from
14 1970 through 1980?

15 A. The financial position of Philadelphia Electric Company can be quickly
16 ascertained by reviewing certain financial ratios shown in my Schedule
17 4. Comparison of these data with similar data discussed earlier for
18 the Industry (Schedule 3) gives a perspective of how Philadelphia
19 Electric compared with the Industry in those years.

20 As with many companies in those years, Philadelphia Electric was
21 pressured to build for unexpectedly rapid growth and for fuel
22 diversification. As noted above, Philadelphia Electric in 1970
23 derived 56% of its generation from oil.

24 This building program accelerated rapidly in the late 1960's so
25 that capital growth by 1970 was very heavy at 16 1/2%, more than one-
26 third greater than the Industry average of 12%. Capital growth for
27 the company remained far higher than the Industry through 1973 and was

1 comparable to the Industry peak in 1974. In the years 1975-80, the
2 Company's capital growth rate was below the Industry average. Average
3 interest cost approximated the Industry through 1973, but gradually
4 increased faster than the Industry so that the Company's debt interest
5 cost in the late 1970's was 50 to 70 basis points higher than the
6 Industry average.

7 With the strain of construction financing and sub-par returns,
8 Philadelphia Electric's coverages excluding AFC deteriorated rapidly.
9 Thus, they fell from a respectable 4.3x's in 1967 to a very sub-
10 average 2.2x's level by 1970. After a brief and small upturn in
11 1971-72, coverages resumed their downturn reaching 1.5 times in 1980.
12 Adjustment for non-cash deferred fuel cost accounting showed even more
13 serious deterioration in 1974 and 1979 to 1.6 and 1.2x's,
14 respectively.

15 Rate relief granted through this period was inadequate to
16 sustain returns near industry levels. In part because of the
17 Company's large oil dependence, fuel cost increases commanded 2.63¢ of
18 the total 1970-80 increase in revenue granted per Kwh. Capital costs
19 including return and all other expenses accounted for only 1.91¢ of
20 the total 4.54¢ increase. With regulatory lag and rate case delays,
21 the earned returns for Philadelphia Electric were low throughout the
22 period. In 1970 and each year 1973 through 1979 (a total of eight
23 years), the return was under 10%. In only one year did the return
24 exceed 11% (1967 @ 12.2%).

25 Q. Please now present your and Duff & Phelps' evaluation of the
26 reasonableness and necessity of PECO's decisions in 1976 and 1978 to
27 reduce its capital expenditures?

1 A. In 1976, PECO announced a delay in the completion of the Limerick
2 station by 2 years. The 5-year, 1975-1979, construction forecast was
3 lowered by \$504 million to \$2.080 billion. Similarly, the 1978 delay
4 announcement again lowered the 3-year 1978-80 forecast by \$88 million
5 to \$1.278 billion.

6 It was not uncommon for utilities to reduce construction
7 expenditures during the 1970's. This was especially true of companies
8 that were financially strained and/or where load growth forecast
9 changes suggested later need for the plant. Examples of utilities
10 which adopted this course of action are provided in Schedule 5.

11 As I explain further below, it is my and Duff & Phelps' opinion
12 that the investor climate for utilities and the financial fundamentals
13 of PECO during the 1974 to 1980 period necessitated this action.

14 Q. What was Philadelphia Electric's construction program through the
15 1970's?

16 A. Schedule 6 shows the 1970-80 Sources & Uses of Funds Statements for
17 Philadelphia Electric. Major projects through the early 1970's were
18 the Peach Bottom units, the Salem units, and the Eddystone units.
19 Internal cash generation was low and annual external financings ranged
20 from \$300 million to \$500 million in 1970-75. These were large sums
21 for a company with 1970 capitalization under \$2 billion, especially
22 when there is no respite. The Company's 1975 forecast showed the same
23 pattern in 1975-79 when \$320 to \$523 million in annual financings were
24 forecast. This is shown on Schedule 7.

25 By contrast, with the cuts in construction requirements, actual
26 financings in 1975-79 ranged from \$235 million to \$370 million. This
27 was shown earlier in my Schedule 6. The level of the reduction of

1 construction expenditures is set forth on my Schedule 7 and varied
2 from approximately \$50 million to \$270 million annually.

3 Q. What was Duff & Phelps' opinion of Philadelphia Electric's
4 construction burden through the 1970's?

5 A. We were concerned. In our reports on the Company from 1970 through
6 1980, we noted the large construction budgets, high early 1970's
7 capital growth, the late 1970's changes in this pattern, and the
8 Limerick deferral announcements in 1976 and 1978. Excerpts from these
9 reports are included as Schedule 8.

10 Q. Referencing these Reports, please provide a further description of
11 Duff & Phelps' evaluation of PECO's financial integrity and assignment
12 of security ratings in the mid to late 1970s, pointing out
13 specifically the effect, if any, which the Company's construction
14 expenditure cuts had upon those evaluations?

15 A. In these Reports, in explaining the basis of our evaluation of PECO
16 securities, we emphasized pre-tax coverage excluding AFUDC, the size
17 of the Company's construction and external financing program and the
18 responsiveness of Pennsylvania regulation to its rate requests. For
19 example, in our September 30, 1976 Fixed Income Summary, we
20 specifically noted that "Construction forecasts have been revised
21 downward" and that internal funds were expected to provide a greater
22 percentage of future construction requirements. We further noted, as
23 a significant basis of our rating assignment, that "a moderating trend
24 in capitalization growth and in external financing", along with annual
25 sales of common and adequate rate relief, would produce "satisfactory"
26 earnings protection for senior securities in the future.

27 In our September 27, 1977 Fixed Income Summary, we further

1 noted:

2 "Our ratings reflect the easing of pressures
3 associated with financing of the construction program over
4 the near term. Capitalization growth is expected to be
5 well below the D&P Average through 1979. However, with
6 below-average kwh sales growth forecast for the territory
7 combined with limited growth prospects in the gas area, the
8 Company will still be dependent on periodic rate relief."

9 Throughout the remainder of 1977 and early 1978, our Summaries
10 continued to refer to the Company's "manageable" and "below average"
11 construction program as a major basis for maintaining the Company's
12 assigned security ratings, i.e. our categories 7 and 8. However, in
13 September 1978, we reduced the Company's ratings for reasons I will
14 describe below.

15 As noted above, in each of our Fixed Income Summaries and in our
16 Basic and New Financing Reports, we noted, as a major factor in our
17 ratings assignment, our evaluation of Pennsylvania regulation and the
18 results of recent Company rate decisions. During the 1974 to 1980
19 period, our evaluation of Pennsylvania regulation was average to
20 slightly below average, with the latter evaluation applying in 1976
21 and 1978. In our September 21, 1978 Basic Report, we reduced the
22 Company's common stock security ratings and stated the following
23 reason:

24 "We are lowering our qualitative rating of the
25 Company from D&P-II to D&P-III because of the deteriorating
26 Pennsylvania regulation and the diminished financial
27 flexibility of the Company."

28 At that time, we noted that:

29 "Further generating additions have been rescheduled
30 to 1985 and 1987, thus easing financing pressures in the
31 early 1980s. Combined with adequate rate relief, this
32 could allow for some restoration in per share earnings and
33 returns in the intervening years."

1 However, we concluded that a downgrading was necessary for the
2 following reasons:

3 "We currently rate Pennsylvania regulation in our
4 Group IV category. Recent Commission actions point to a
5 deteriorating atmosphere and this ranking will be carefully
6 reviewed upon receipt of several expected forthcoming
7 orders...

8 ...Overall, we concluded the Company has been unable
9 to secure rate relief in sufficient amounts on a timely
10 basis...

11 Earnings for the 12 months ended July 31, 1978 were
12 \$1.65 which compared with \$2.08 for the prior similar
13 period on 8% additional average shares. The decline
14 principally reflected a full year's operation of the Salem
15 nuclear Unit No. 1 with little offsetting rate relief. As
16 mentioned earlier, the Commission permitted an \$11.9
17 million interim increase amounting to less than 1% of
18 revenues, to become effective April 4, 1978, subject to
19 refund. We anticipate the final order by year-end 1978...

20 Our expectations for the balance of 1978 are for
21 continued earnings attrition until significant rate relief
22 becomes effective.... Thus, we estimate 1978 earnings at
23 \$1.55 per share. The Company has announced deferment of
24 the Common stock offering previously planned for fall of
25 1978. Based on 7% additional average outstanding shares, a
26 return of around 8.2% on average Common equity is
27 indicated.

28 The most important factor affecting the level of
29 earnings in 1979 will be the amount of rate relief
30 obtained. The Company will be burdened by costs associated
31 with the installation of the second Salem nuclear unit
32 which is anticipated to be placed in commercial operation
33 at mid-year.... Assuming \$90 million of rate relief
34 initially reflected during the year, 5% more average
35 shares, and higher financing costs not offset by AFC, we
36 estimate 1979 earnings at \$1.80 per share. This estimate
37 would produce a return of about 9.5% on average Common
38 equity."

39 In our prior ratings of the Company, as reflected in our New
40 Financing Report of September 27, 1977, we had maintained the
41 Company's higher rating in light of our ranking of Pennsylvania
42 regulation as Group III (i.e. average), our perception of the easing
43 of financing pressures due to the 1976 capital expenditure reductions
44 and our expectation of receipt by the Company of adequate and timely

1 rate relief. We expressed our basis for this expectation in the New
2 Financing report as follows:

3 "Per share earnings for the 12 months ended July 31,
4 1977 were reported at \$2.08 versus \$1.84 for the similar
5 prior period and \$1.91 for calendar 1976. Earnings for the
6 12 months ended July 1977 benefited principally from an
7 increase in AFC of \$10 million since year-end 1976 and rate
8 relief. A slowdown in financing cost increases was also a
9 positive factor. However, as a result of commercial
10 operation of the Salem nuclear unit at June 30, 1977, AFC
11 will begin to decline \$2 million monthly and depreciation
12 will rise \$900,000 monthly; other fixed charges relating to
13 this generating addition will increase. Less rate relief
14 will also be effective for the balance of 1977. A small
15 offset will be the nuclear fuel savings. Overall, we
16 expect some attrition in per share earnings for the balance
17 of 1977 and until rate relief is received. Thus, we are
18 maintaining our 1977 earnings estimate of \$2.00 per share
19 on 8% additional average outstanding shares which equates
20 to a 10.3% return on average equity.

21 For 1978 our estimate is \$2.05 per share. The
22 decision of the Pennsylvania Commission on the Company's
23 recent petition regarding proposed changes in the fuel
24 clause and request for \$119 million of annual rate relief--
25 which has been suspended to April 1978--will be the
26 primary determinant of the level of earnings for the year.
27 Assuming reasonable treatment by the Commission, on 7%
28 additional shares, our \$2.05 estimate indicates a 10.6%
29 return on average equity. Longer term, with capitalization
30 growth slowing and financing pressures easing, we envision
31 modest earnings progress, assuming rate relief is received
32 on a timely basis....

33 Previous rate decisions by the Pennsylvania Public
34 Utilities Commission have been based on fair value, end-
35 of-period historical rate bases and the adjusted book
36 Common equity returns have been 14% - 14 1/2%. Interim
37 rate relief has been granted and normalization of
38 accelerated depreciation tax deferrals on post-1969
39 property was allowed."

40 Thus, as shown in both our Reports and our Fixed Income
41 Summaries, our downgrading of the Company's securities in 1978 was
42 attributable to the disappointment of our expectations respecting its
43 1978 and likely future earnings levels, due principally to its failure
44 to obtain interim rate relief and the resulting attrition experienced
45 as it awaited rate base recognition of a major generating plant

1 addition. Further, we noted the prospect that this process would be
2 repeated in 1979 when a second major unit entered service with
3 additional negative effects to earnings. We were particularly
4 concerned at this time that the Company would in the next several
5 years be unable to meet its mortgage bond coverage test, thus being
6 foreclosed from issuance of mortgage bonds, and with the fact that its
7 earnings per share were not at that time and quite possibly would not
8 in the future support its dividend thus raising concern about the
9 maintainability of that dividend. These concerns were further
10 summarized in our March 11, 1980 Fixed Income Summary (see Schedule 8,
11 first and third paragraphs). By contrast, our decision to maintain
12 the Company's ratings in 1977 and early 1978 reflected our more
13 positive view at that time of Pennsylvania regulation and our
14 expectation of adequate financial performance by the Company in
15 substantial part due to its 1976 and 1978 capital expenditure
16 reductions.

17 Q. Did the D&P Credit Rating Committee downgrade the Company's securities
18 in 1976?

19 A. Yes. In late April 1976, the D&P Committee reassessed PECO's credit
20 risks. We lowered the bond rating to D&P-7 (Low Single A) from our
21 previous 2-Medium in our prior rating scale.

22 Q. How did the 2-Medium in your former rating scale compare with the new
23 scale adopted in 1976?

24 A. A 2-Medium was the fifth rating category in our former scale.
25 However, in terms of risk comparability, it was equivalent to a strong
26 D&P-6 (Medium Single A) in the revised scale.

27 Q. What was the reason for the late April 1976 rating reduction of PECO's

1 securities by D&P?

2 A. The D&P Rating Committee was concerned about PECO's ability to
3 maintain and improve its financial ratios. Coverages for 1976 were
4 forecast to retreat to the 1974 level, near the bottom for the D&P 5
5 to 7 (Single A) rated companies. Construction remained very large
6 with the forecast at \$437 million in 1976 and totaling almost \$2
7 billion for the four years 1976-79. The Committee was concerned about
8 whether rate increases would be adequate and about the level of
9 external financing which would be necessary to finance PECO's capital
10 program. This downgrading was in advance of the 1976 Limerick delay
11 announcement.

12 Q. What are the types of reports published by D&P?

13 A. D&P publishes reports on common stock and on the fixed income
14 securities of companies it rates. The Basic Report discusses the
15 company in depth and addresses especially the common stock. The
16 Common Stock Summary is a periodic update to that report. The Fixed
17 Income Rating Analysis is an indepth report on the credit aspects of
18 the company. The Fixed Income Summary is a synopsis of our credit
19 rating opinion. At the time of each fixed income offering, we publish
20 a New Financing Report describing the proposed issue and the company's
21 credit fundamentals.

22 Q. You mentioned that Duff & Phelps rates securities. What has been your
23 history of ratings for Philadelphia Electric's senior debt?

24 A. We currently rate the Company's debt D&P-9 (Medium Triple B). We
25 assigned this rating in April 1980. Our history of rating changes as
26 well as those of Moody's and Standard & Poor's are shown in Schedule
27 9.

1 Q. What is your belief as to D&P's rating action had the Limerick
2 schedule not been changed in 1976 and 1978?

3 A. As Chairman of our Utility Rating Committee from 1974 to 1980, I
4 recall my own and our committee's concern about the Company's large
5 capital spending and low level of coverage and internal cash
6 generation. This was the subject of our quarterly rating review with
7 our analyst following Philadelphia Electric. I recall the
8 construction expenditure reductions and the Company's efforts to
9 reduce its debt ratio as key factors in tempering our reductions in
10 the securities ratings.

11 The rating reductions we made were primarily because of the
12 continued low earned returns, the Pennsylvania regulatory climate, the
13 declining coverages, and in 1980 the cost effects anticipated on
14 nuclear plants largely as a result of the TMI accident and the PUC
15 denial of CWIP. Had the construction program been on its more
16 ambitious 1975 forecast, the Company's financial ratios would have
17 been lower. Under these circumstances, I believe the D&P ratings
18 would have been lowered earlier and further.

19 Q. Could you describe your rating system?

20 A. Yes. Schedule 10 sets forth our numerical rating system and gives
21 generic definitions for each category. We use 17 ratings. D&P-10 is
22 the lowest in the investment grade category. Philadelphia Electric's
23 Bonds are only one level away from that level.

24 Q. In your opinion, could PECO have raised the needed capital for the
25 pre-1976 construction schedule?

26 A. It would have required tremendous regulatory support. Coverages were
27 very low. The Mortgage Indenture earnings test limited bonding

1 capacity. Each new offering would have raised interest expense and
2 pressed coverages down further. In my opinion, the only way this
3 might have been possible is if the PUC had allowed a cash return on
4 substantial construction work in progress. This option was rejected
5 several times by the PUC. For example, this treatment was denied in
6 cases RID 129 and R-811626. Similarly, provisions to enable
7 additional cash generation were denied in case R-80061225.

8 Q. What bond rating was necessary for utility companies in the 1970's?

9 A. In the 1970's, a Triple B electric utility was regarded with extreme
10 caution. Those companies which had sunk to that level were often shut
11 out of the market although the Triple B category is regarded as
12 investment grade. There were two reasons for this. First, many
13 institutions are prohibited by law or policy from investing in
14 securities rated below Single A. Second, during a period of concern
15 about the industry such as existed in the 1970's, investors attempted
16 to upgrade their holdings and at times would only buy higher (Double
17 A) quality securities fearing that downgrades of even Single A credits
18 would result in a Triple B holding. There was no utility "junk" bond
19 market such as developed in 1983-84 when companies such as Long Island
20 Lighting or PS New Hampshire were able, by paying a very high price,
21 to sell their debt instruments.

22 Therefore, utility companies which had to have ready and
23 frequent access to the markets strived to maintain Double A or at
24 least strong Single A ratings. PECO's actions in reducing its
25 construction expenditures, as well as the similar action of numerous
26 other utilities, greatly facilitated this purpose. In my opinion,
27 this was a reasonable and proper action by PECO management, and was

1 necessary to permit maintenance of an adequate and ultimately
2 marginally adequate financial position by the Company.

3 Q. Could you summarize your testimony?

4 A. Yes. I believe that the Limerick schedule deferrals of 1976 and 1978
5 were financially necessary for the Company at that time. Had they
6 continued full force, the stress of far larger annual financings would
7 likely have resulted in further credit deterioration and reduced
8 ability to handle the increased funding in the 1980's. This would
9 have been damaging to the investors and not in the best interest of
10 the rate payers.

11 Q. Does this conclude your testimony?

12 A. Yes, it does.

PHILADELPHIA ELECTRIC COMPANYInvestor Owned Utilities
Annual Electric Rate Actions
1970-1980

	<u>Cases Filed</u>	<u>Cases Decided</u>
1970	87	97
1971	115	111
1972	110	136
1973	139	131
1974	212	206
1975	192	237
1976	173	217
1977	164	210
1978	155	205
1979	181	219
1980	256	258

Source: Edison Electric Institute - Financial Information Tabulation Dated
4/8/85.

PHILADELPHIA ELECTRIC COMPANYInvestor Owned Utilities
Price/Earnings Multiples
1960-1980

<u>Year</u>	<u>X's</u>
1960	22.9
1961	24.7
1962	21.8
1963	22.3
1964	22.7
1965	21.1
1966	18.8
1967	16.3
1968	16.5
1969	12.8
1970	13.5
1971	12.6
1972	11.9
1973	8.8
1974	6.4
1975	8.4
1976	9.4
1977	8.9
1978	7.6
1979	6.9
1980	6.1

Source: Duff & Phelps Twenty Company Average. (Twenty companies of the major power regions on the basis of total generating capacity and plant investment. The companies are: AEP, C&SW, Com Ed, DE, Dom R., Duke, FPL, IPALCO, MSU, NEES, NMP, NSP, PacifCorp., PS&E, PECO, PSCOLO, PSE&G, SoCo, TU, Union Elec).

PHILADELPHIA ELECTRIC COMPANYInvestor Owned Utilities
Selected Ratios
1970-1980

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Debt Ratio	57.1	56.9	56.0	54.7	56.8	54.7	53.4	53.2	52.2	52.9	53.0
% Incr. Avg. Cap.	12.0	13.0	13.1	12.7	14.2	11.2	8.5	9.3	8.8	11.7	10.3
Avg. Debt Int. Cost	5.3	5.5	5.7	6.0	6.7	6.9	7.1	7.3	7.5	8.0	9.0
ROE	12.2	12.0	12.2	11.8	10.4	11.5	11.6	11.5	11.8	11.4	12.0
AFC as % Bal. for Common	22	29	35	36	46	36	34	37	44	52	53
Income Tax Rate	29	25	23	23	20	29	31	32	32	26	27
Debt Int. Cvg. Ex AFC	3.1	2.7	2.6	2.6	2.2	2.4	2.6	2.6	2.6	2.3	2.2
Mkt. to Book-Common Stock	163	150	145	102	70	96	106	100	87	77	74
Yield-Common Stock	5.28	5.47	5.61	7.70	12.15	8.42	7.71	8.16	9.85	11.49	12.51

Source: D&P Twenty Company Average

PHILADELPHIA ELECTRIC COMPANY
Selected PECO Financial Ratios
1970-1980

<u>Year</u>	<u>Int. Cvg.</u>		<u>Cap. Incr.</u> %	<u>Debt Ratio</u> %	<u>Avg. Int. Cost</u> %	<u>ROE</u> %
	<u>Ex AFC</u>	<u>Ex AFC & Def. Fuel</u>				
1967	4.3	4.3	8.3	55.5	4.1	12.2
1968	3.5	3.5	9.2	58.2	4.5	10.9
1969	3.0	3.0	11.9	56.7	5.0	10.3
1970	2.2	2.2	16.5	56.8	5.6	9.4
1971	2.4	2.4	16.1	54.0	5.7	10.8
1972	2.4	2.4	15.2	53.3	5.9	10.3
1973	2.2	2.2	14.9	51.0	6.2	9.8
1974	1.8	1.6	14.1	54.4	7.1	8.9
1975	2.0	2.0	10.1	53.2	7.6	9.4
1976	2.1	2.1	5.8	51.6	7.7	9.9
1977	2.0	2.0	5.9	51.8	8.0	9.6
1978	1.9	2.0	5.8	52.1	8.2	9.7
1979	1.6	1.2	7.3	53.2	8.5	9.8
1980	1.5	1.8	7.0	51.8	9.5	10.6
		<u>Avg. Realization Per Kwh</u>		<u>Fuel & Net</u>		<u>All Other</u>
1970 ¢/Kwh		1.78		.44		1.34
1980 ¢/Kwh		6.32		3.07		3.25
1970-80 % Incr.		255		597		142

Source: Company Reports

PHILADELPHIA ELECTRIC COMPANYDelayed Generating Plants

<u>Company</u>	<u>Plant</u>
Long Island Lighting	Shoreham
Detroit Edison	Fermi
	Belle River
Public Serv. E&G	Hope Creek
Consumer Power	Midland
Ohio Edison)	Beaver Valley No. 2
Cleveland Electric)	
Toledo Edison)	
Duquesne Light)	
Niagara Mohawk	Nine Mile Point
Georgia Power	Plant Vogtle
	Sherer 1
Pacific P&L	Wyodok 1

Source: Annual Electric Power Survey Report of the Electric Power Survey Committee of the Edison Electric Institute