

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY  
COMMISSION, ET. AL.

V.

DUQUESNE LIGHT COMPANY  
FOR APPROVAL OF ITS  
RESTRUCTURING PLAN UNDER  
SECTION 2806 OF THE  
PUBLIC UTILITY CODE

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) DOCKET NO. R-00974104  
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DIRECT TESTIMONY  
AND EXHIBITS  
OF  
STEPHEN J. BARON

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ON BEHALF OF THE

DUQUESNE INDUSTRIAL INTERVENORS

BOC Gases  
General Motors Corp.  
J&L Specialty Steel, Inc.  
LTV Steel Company, Inc.

Nabisco Inc.  
Nova Chemicals, Inc.  
USX Corporation - US Steel Group

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J. KENNEDY AND ASSOCIATES, INC.  
ATLANTA, GEORGIA

NOVEMBER 1997

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**DIRECT TESTIMONY OF STEPHEN J. BARON**

**I. QUALIFICATIONS AND SUMMARY**

1

2 **Q. Please state your name and business address.**

3

4 **A.** My name is Stephen J. Baron. My business address is J. Kennedy and Associates,  
5 Inc. ("Kennedy and Associates"), 35 Glenlake Parkway, Suite 475, Atlanta, Georgia  
6 30328.

7

8 **Q. What is your occupation and by whom are you employed?**

9

10 **A.** I am the President and a Principal of Kennedy and Associates, a firm of utility rate,  
11 planning, and economic consultants in Atlanta, Georgia.

1 Q. Please describe briefly the nature of the consulting services provided by Kennedy  
2 and Associates.

3  
4 A. Kennedy and Associates provides consulting services in the electric and gas utility  
5 industries. Our clients include state agencies and industrial electricity consumers.  
6 The firm provides expertise in system planning, load forecasting, financial analysis,  
7 cost-of-service, and rate design. Current clients include the Georgia and Louisiana  
8 Public Service Commissions, and industrial consumer groups throughout the United  
9 States.

10  
11 Q. Please state your educational background.

12  
13 A. I graduated from the University of Florida in 1972 with a B.A. degree with high  
14 honors in Political Science and significant coursework in Mathematics and Computer  
15 Science. In 1974, I received a Master of Arts Degree in Economics, also from the  
16 University of Florida. My areas of specialization were econometrics, statistics, and  
17 public utility economics. My thesis concerned the development of an econometric  
18 model to forecast electricity sales in the State of Florida, for which I received a grant  
19 from the Public Utility Research Center of the University of Florida. In addition, I  
20 have advanced study and coursework in time series analysis and dynamic model  
21 building.

1 **Q. Please describe your professional experience.**

2

3 A. I have more than twenty-two years of experience in the electric utility industry in the  
4 areas of cost and rate analysis, forecasting, planning, and economic analysis.

5

6 Following the completion of my graduate work in economics, I joined the staff of the  
7 Florida Public Service Commission in August of 1974 as a Rate Economist. My  
8 responsibilities included the analysis of rate cases for electric, telephone, and gas  
9 utilities, as well as the preparation of cross-examination material and the preparation  
10 of staff recommendations.

11

12 In December 1975, I joined the Utility Rate Consulting Division of Ebasco Services,  
13 Inc. as an Associate Consultant. In the seven years I worked for Ebasco, I received  
14 successive promotions, ultimately to the position of Vice President of Energy  
15 Management Services of Ebasco Business Consulting Company. My responsibilities  
16 included the management of a staff of consultants engaged in providing services in  
17 the areas of econometric modeling, load and energy forecasting, production cost  
18 modeling, planning, cost-of-service analysis, cogeneration, and load management.

19

20 I joined the public accounting firm of Coopers & Lybrand in 1982 as a Manager of  
21 the Atlanta Office of the Utility Regulatory and Advisory Services Group. In this

1 capacity I was responsible for the operation and management of the Atlanta office.  
2 My duties included the technical and administrative supervision of the staff,  
3 budgeting, recruiting, and marketing as well as project management on client  
4 engagements. At Coopers & Lybrand, I specialized in utility cost analysis,  
5 forecasting, load analysis, economic analysis, and planning.

6  
7 In January 1984, I joined the consulting firm of Kennedy and Associates as a Vice  
8 President and Principal. I became President of the firm in January 1991.

9  
10 During the course of my career, I have provided consulting services to more than  
11 thirty utility, industrial, and Public Service Commission clients, including three  
12 international utility clients.

13  
14 I have presented numerous papers and published an article entitled "How to Rate  
15 Load Management Programs" in the March 1979 edition of "Electrical World." My  
16 article on "Standby Electric Rates" was published in the November 8, 1984 issue of  
17 entitled "Load Data Transfer Techniques" on behalf of the Electric Power Research  
18 Institute, which published the study.

19  
20 I have presented testimony as an expert witness in Arizona, Arkansas, Colorado,  
21 Connecticut, Florida, Georgia, Indiana, Kentucky, Louisiana, Maine, Michigan,

1 Minnesota, Maryland, Missouri, New Jersey, New Mexico, New York, North  
2 Carolina, Ohio, Pennsylvania, Texas and West Virginia, as well as the Federal Energy  
3 Regulatory Commission and the United States Bankruptcy Court. A list of my  
4 specific regulatory appearances can be found in Baron Exhibit \_\_\_\_ (SJB-1)  
5

6 **Q. On whose behalf are you testifying in this proceeding?**  
7

8 A. I am testifying on behalf of the Duquesne Industrial Intervenors ("DII"), a group of  
9 large industrial customers taking service on the Duquesne Light Company ("DLC"  
10 or "the Company") system.  
11

12 **Q. What is the purpose of your testimony?**  
13

14 A. I will be presenting testimony on three areas in this proceeding. The first group of  
15 issues concerns a summary of DII's stranded cost analysis, as prepared by DII  
16 witnesses Randall J. Falkenberg and Lane Kollen. Mr. Falkenberg has prepared DII's  
17 market value analysis and has calculated the stranded costs associated with DLC's  
18 generation assets. Mr. Kollen is presenting DII's analysis of DLC's claim for  
19 regulatory assets. In my testimony, I will present DII's overall stranded cost revenue  
20 requirements, relying on the individual calculations prepared by Mr. Falkenberg and  
21 Mr. Kollen.

1 The second area of my testimony addresses a number of regulatory policy issues  
2 associated with the calculation of stranded costs and the recovery of stranded costs  
3 from ratepayers through the Competitive Transition Charge ("CTC"). Among the  
4 issues that I will be addressing is the just, reasonable and appropriate level of  
5 quantifiable stranded costs that are recoverable from ratepayers. As I will discuss,  
6 DII is proposing a form of common equity disallowance on the calculation of the  
7 revenue requirement associated with the Commission-approved stranded generation  
8 cost.

9  
10 The next major policy issue that I will discuss concerns the Company's plan for the  
11 recovery of stranded costs and its proposal to determine CTC charges annually, based  
12 on "revealed" market prices, determined annually. As I will discuss, DII strongly  
13 opposes this plan. Both the level of stranded cost and future CTC charges should be  
14 definitively determined in this proceeding.

15  
16 The next policy issue that I will discuss concerns DII's recommended mechanism for  
17 tracking revenues produced by the CTC component of each unbundled rate. I will  
18 also be addressing DII's proposal to extend the generation rate cap provision of the  
19 Electricity Generation Customer Choice and Competition Act ("the Competition  
20 Act"), if it is necessary to extend the period of CTC recovery beyond seven years.  
21 Although DII does not believe that DLC should automatically be able to recover the  
22 CTC once the seven year period defined in the Competition Act is concluded, we do

1 believe that it is reasonable to give DLC an opportunity to request and seek (through  
2 a formal filing) such an extension beyond seven years, as long as the rate cap is  
3 extended concurrently.

4  
5 The last policy issue that I will discuss regards the implications of DLC's proposed  
6 rate design on the development of a competitive market and the appropriateness of  
7 DLC's general approach to calculating the CTC as a residual for each unbundled rate.

8  
9 The third area of my testimony addresses DLC's proposed rate design methodology,  
10 with particular emphasis on Rate Schedules L and HVPS. In this portion of my  
11 testimony, I will discuss issues related to DLC's proposed unbundling analysis and  
12 present an alternative rate design that directly employs the market prices developed  
13 on behalf of DII by Mr. Falkenberg. In addition, I will also address various rate  
14 design policy issues associated with the Company's filing that DII believes should be  
15 clarified or modified in the Commission's order in this proceeding.

1 Summary

2  
3 Q. Would you please summarize your testimony in this proceeding?

4 A. • DII recommends a total stranded cost quantification for DLC of \$1.390  
5 billion. This includes \$763 million of stranded generation costs and \$627  
6 million of regulatory assets.

7  
8 • DII recommends that DLC's generation stranded costs be reduced by  
9 \$232 million to reflect a partial sharing of these costs by the Company's  
10 shareholders. This reduction has been factored into our recommended  
11 level of \$763 million of generation stranded costs.

12  
13 • DLC should be permitted to accrue a fully grossed-up rate of return on  
14 the unamortized balance of stranded costs during the period of time (up  
15 to seven years) in which the Company is collecting CTC revenues from  
16 its customers. However, if the Company securitizes its stranded costs, the  
17 appropriate return would be the return on the transition bonds.

18  
19 • The appropriate basis for unbundling DLC's rates is to utilize expected  
20 market rates for each year of the seven year transition period, while  
21 computing the CTC as a residual in the analysis. These expected market  
22 rates should be determined for all future years in this proceeding and not  
23 be subject to future change.

24  
25 • DLC's proposal to recalculate the market generation component and the  
26 CTC component of its unbundled rates each year should be rejected. All  
27 unbundled rates and rate components should be established in this  
28 proceeding, together with a quantification of stranded cost. DLC's  
29 proposal to defer the quantification of stranded cost until 2003 should be  
30 rejected.

31  
32 • DLC's proposal to establish "customer-specific" CTC charges should be  
33 rejected. The Company's proposal assigns a substantial portion of the  
34 CTC charge to customers on a take-or-pay basis, thus inappropriately  
35 shifting risk from the Company to its customers.

36  
37 • DLC's proposed distribution and transmission rates are overstated and  
38 should be reduced to reflect cost of service.

1           **II. STRANDED COST ANALYSIS -- SUMMARY OF DII RESULTS**

2  
3   **Q.    Would you please discuss DII's recommendation for stranded cost recovery by**  
4   **DLC in this proceeding?**

5  
6   A.    DII is recommending that DLC be permitted to recover approximately \$1.390 billion  
7   of stranded costs from ratepayers. This \$1.390 billion stranded cost value includes  
8   generation related stranded costs and regulatory assets (including nuclear  
9   decommissioning) on a present value revenue requirement basis. In essence, DII's  
10   recommendation is that ratepayers should compensate DLC for stranded costs by an  
11   amount of \$1.390 billion (present value) for a period not to exceed seven years.

12  
13   **Q.    Would you please explain the basis for DII's stranded cost revenue requirement?**

14  
15   A.    Baron Exhibit \_\_\_\_ (SJB-2) shows a summary (top portion of exhibit) of the analysis  
16   used to develop the stranded cost recommended by DII. This analysis reflects both  
17   the calculation of the cost associated with stranded generation plant as well as  
18   incorporating the present value of regulatory asset revenue requirements prepared by  
19   Mr. Kollen in his testimony. It also reflects our proposed sharing adjustment for a  
20   portion of the generation related stranded costs. Finally, the stranded costs associated  
21   with DLC's NUG contracts are included.

1 The first portion of the analysis compares DLC's net generating plant and CWIP  
2 balance at December 31, 1998 of \$979.130 million to DII's market value for DLC  
3 generating units of negative \$16.742 million. The resulting difference represents the  
4 stranded cost directly associated with generating plant of \$995.9 million. On a retail  
5 jurisdiction basis, stranded generation cost is \$995.0 million.

6  
7 The next step in the analysis is to arrive at a just and reasonable level of recovery  
8 from ratepayers. That level can be reached by reducing the stranded generation plant  
9 value by an equity return disallowance, and effectively, requiring a sharing of a  
10 portion of the generation related stranded cost by DLC shareholders. That shared  
11 amount is \$232.3 million out of a total retail generation stranded cost of \$995.0  
12 million. Finally, the stranded cost associated with regulatory assets of \$627.409  
13 million is added to produce an overall stranded cost value for DLC of \$1.390089  
14 billion.

15  
16 This amount, which reflects a present value, is the appropriate level of stranded cost  
17 recovery for DLC, if it is assumed that ratepayers would pay the entire amount on  
18 January 1, 1999.

19  
20 **Q. Please describe the approach that DII is proposing to develop the CTC for each**  
21 **rate schedule and recover your recommended \$1.390 billion of stranded cost?**

1 A. DII supports the basic DLC proposed unbundling methodology that develops the CTC  
2 component of each unbundled rate as a residual, after removing transmission,  
3 distribution and expected market prices from current bundled rates. As a result, there  
4 is no need to calculate an annual, levelized stranded cost revenue requirement in  
5 order to allocate CTC costs to rate classes. Since the CTC for each class is computed  
6 as a residual, it is only necessary to develop an accrual methodology to accumulate  
7 CTC revenues from each rate class and, effectively amortize the stranded cost balance  
8 during the seven (or fewer) year transition period.

9  
10 **Q. Would you please discuss the specific methodology that you have utilized to**  
11 **produce a just and reasonable level of quantifiable stranded costs that can be**  
12 **recovered from ratepayers?**

13  
14 A. DII is recommending an equity disallowance on the recovery of stranded generation  
15 costs, assuming a seven year recovery period. This equity return disallowance is  
16 calculated by comparing the present value of the revenue requirements associated  
17 with stranded generation costs, calculated at a fully grossed-up return level, and a  
18 similar calculation that excludes the equity return component. This analysis is shown  
19 on Baron Exhibit \_\_\_\_ (SJB-3), pages 1 and 2.

1 On page 1 of Baron Exhibit \_\_\_\_ (SJB-3), the present value of stranded generation  
2 plant revenue requirements is calculated using a debt only return of 5.51% on the  
3 unamortized balance. The annual revenue requirements, amortized over the full seven  
4 year CTC recovery period are present valued at an after-tax rate of return of 7.84%.  
5 The resulting present value revenue requirements associated with stranded generation  
6 cost of \$995.872 million is \$927.125 million. To develop the equity return  
7 disallowance, a similar calculation is performed under the assumption of a fully  
8 grossed-up rate of return on the unamortized stranded generation cost balance,  
9 assuming amortization over seven years. The resulting present value of revenue  
10 requirements, including an equity return component is shown on page 2 of 2 of the  
11 exhibit to be \$1.159625 billion.

12  
13 The equity return revenue requirement, which is the difference between the two  
14 present value calculations is \$232.5 million on a total Company basis. This is the  
15 amount of stranded generation cost that should be disallowed and effectively  
16 represents a sharing of stranded generation cost by shareholders. DII believes that  
17 this approach produces a just, reasonable and appropriate level of quantifiable  
18 stranded generation costs that can be recoverable from DLC's ratepayers, and  
19 effectively leads to a sharing of the stranded costs associated with DLC's generation  
20 plant.<sup>1</sup>

---

<sup>1</sup> DII's proposed adjustment is only applicable to stranded generation costs, not regulatory assets.

1 Q. How have you developed the return on the unamortized stranded generation  
2 costs in this proceeding?

3  
4 A. Baron Exhibit \_\_\_\_ (SJB-4) shows the development of the rate of return utilized to  
5 calculate revenue requirements. The capital structure shown in Baron Exhibit  
6 \_\_\_\_ (SJB-4) reflects the cost of debt and preferred assumed by DLC in this  
7 proceeding, without any common equity return. Since the common equity return is  
8 eliminated, the tax gross-up associated with the common equity return is also  
9 eliminated in the analysis. As can be seen in the exhibit, the resulting rate of return  
10 appropriate for calculating stranded generation cost revenue requirements during the  
11 seven year transition period is 13.39%, unless the stranded cost is securitized, in  
12 which case the appropriate return would be the transition bond interest rate. Also  
13 shown on the exhibit is the full rate of return calculation.

1 III. REGULATORY POLICY ISSUES

2  
3 Adjustment to Generation Stranded Costs

4  
5 Q. Would you please discuss your recommended position regarding the  
6 appropriateness of reducing stranded generation costs (if the Commission finds  
7 that there are stranded generation costs), in order to arrive at a just and  
8 reasonable level to recover from DLC's ratepayers?

9  
10 A. The Competition Act clearly defines a series of steps that a utility must follow before  
11 recovering stranded costs from ratepayers. The Act does permit a full, 100%  
12 recovery of stranded costs (after mitigation and netting of liabilities), associated with  
13 regulatory assets and NUG purchased power contracts. However, with respect to the  
14 largest component of stranded costs, those related to generation assets, the Act  
15 requires the Commission first to consider whether the utility has undertaken  
16 reasonable efforts in mitigation and whether the asset is a properly claimable stranded  
17 cost; then, the Commission must: 1) quantify the properly claimed stranded costs and  
18 2) identify a just and reasonable level of those quantified costs for recovery from  
19 ratepayers. This is consistent with Commissioner Hanger's statement released on  
20 May 8, 1997 in the PECO QRO proceeding polling session (Docket No. R-

1 00973877), as well as various sections of the Competition Act, including §2802(15)  
2 and §2804(13).

3  
4 **Q. Have you evaluated DLC's efforts at mitigating stranded costs?**

5  
6 A. I have reviewed the testimony filed by DLC witnesses regarding the Company's  
7 efforts to mitigate stranded costs. Although I have not analyzed each of these efforts  
8 in detail, I am not challenging DLC's mitigation efforts in this proceeding.

9  
10 **Q. As you indicated in a previous answer, the Competition Act requires the**  
11 **Commission to determine a just and reasonable level of stranded generation**  
12 **costs that should be borne by ratepayers. How do you believe the Commission**  
13 **should determine a just and reasonable level of generation related costs**  
14 **associated with DLC's fossil facilities?**

15  
16 A. The determination of an appropriate adjustment to apply to the recovery of generation  
17 related stranded costs from ratepayers, using a just and reasonable standard, should  
18 be based, to the extent possible, on previous Commission precedent with respect to  
19 similar costs. In particular, the stranded generation costs at issue in this proceeding  
20 are associated with costs that are no longer used and useful (from an economic  
21 perspective) in a competitive market environment. There would appear to be no

1           dispute in this regard. Although the legislation implementing retail competition in  
2           Pennsylvania envisions that utilities will experience such stranded generation costs,  
3           and that recovery of those costs (after mitigation) should be considered by the  
4           Commission, the clear implication of the legislation is that these costs are no longer  
5           used and useful in providing electric service. It is also clear that stranded costs  
6           (representing intangible costs) do not provide electric utility service in and of  
7           themselves. Rather, they represent a transition from a regulated to a competitive  
8           environment.

9  
10          Given the nature of stranded generation costs and their relative comparability to  
11          generating costs that have previously been considered by the Commission as being  
12          not used and useful (for example, excess capacity), I believe it is appropriate to  
13          consider a discount factor based on prior Commission remedies associated with the  
14          treatment of generating costs that have been found to be not used and useful. One  
15          such remedy that has been used by the Pennsylvania Public Utility Commission and  
16          other state commissions is the disallowance of an equity return on the investment  
17          associated with facilities that are found to be not used and useful. I believe that an  
18          equity return disallowance is an appropriate mechanism to adjust stranded generation  
19          costs for recovery from ratepayers through a CTC.

1 Q. Would you please provide specific citations in the Competition Act that support  
2 your recommendation that the Commission should only consider a just and  
3 reasonable level of generation stranded costs to be recovered from ratepayers  
4 through a CTC?

5

6 A. The first reference in the Act occurs in §2802(15), wherein the legislation states:

7

8 **"The Commission is empowered under this chapter to determine**  
9 **the level of transition or stranded costs for each electric utility and**  
10 **to provide a mechanism, the competitive transition charge, for**  
11 **recovery of an appropriate amount of such costs in accordance**  
12 **with the standards established in this chapter."**

13

14 The Act requires the Commission to establish a CTC for stranded cost recovery based  
15 on the standards established subsequently in the Act. In particular, the standard that  
16 the Commission must use in approving a competitive transition charge is a just and  
17 reasonable standard. These standards are discussed in §2804 of the Act. Specifically,  
18 at §2804(13), the Act states as follows:

19

20 **"The Commission has the power and duty to approve a**  
21 **competitive transition charge for the recovery of transition or**  
22 **stranded costs it determines to be just and reasonable to recover**  
23 **from ratepayers." (emphasis added)**

1 Clearly, the Commission has a duty to utilize a just and reasonable standard in  
2 determining the amount of stranded costs to be recovered from ratepayers. Since  
3 other sections of the Act require the Commission to permit full recovery of stranded  
4 regulatory assets and non-utility generating project costs, the generation-related  
5 transition or stranded costs are the "costs" that must be adjusted in order to meet the  
6 just and reasonable recovery standard. In fact, the Act states at §2808(c) (3) that the  
7 Commission shall determine the level of generation-related transition stranded costs  
8 that may be recovered through competitive transition charge.

9  
10 **Q. Based on your understanding of the provisions of the Competition Act and the**  
11 **Commission's application of that Act in the PECO QRO proceeding, does the**  
12 **Commission have a responsibility to apply the just and reasonable standard in**  
13 **the determination of the amount of generation-related stranded costs that may**  
14 **be recovered from ratepayers?**

15  
16 **A.** Yes. I believe that some adjustment or discount from the total calculated level of  
17 stranded generation costs (if they are found to be a positive value) should be made  
18 prior to the calculation of the recovery of such costs through a CTC. The  
19 methodology that I am recommending in this proceeding is a reasonable approach to  
20 making such a stranded generation cost adjustment to arrive at a just and reasonable  
21 level to recover from customers.

1 Q. How do you propose to incorporate an equity return disallowance into the  
2 development of an adjustment factor to be applied to generation related  
3 stranded costs?

4  
5 A. A fair and reasonable methodology would eliminate the equity component of return  
6 on the unamortized balance of stranded generation costs, during the seven year  
7 transition period in which the CTC is recovered. As shown in Baron Exhibit  
8 \_\_\_\_ (SJB-3), the methodology that I am proposing would use a rate of return, absent  
9 the equity component and corresponding income tax effects, applied to the total  
10 generation related stranded cost balance at the beginning of the CTC recovery period.  
11 Essentially, under the proposal that I am making, the adjustment to stranded cost (i.e.,  
12 the removal of the equity return component), would only apply during the transition  
13 recovery period. It would not penalize DLC for revenue requirements associated with  
14 the equity return component of rates over the entire remaining life of its generation  
15 assets. Such an adjustment would result in a substantially greater adjustment to  
16 recoverable stranded generation costs.

17  
18 Q. You mentioned in your previous answer that you are not proposing to disallow  
19 the equity return over the entire remaining life of DLC's generating assets, but  
20 only during the seven year transition period. Would you please explain this  
21 distinction in more detail?

1 A. As discussed by DII witness Falkenberg, we have adopted an asset value framework  
2 for computing stranded generation costs in this proceeding. Briefly, this methodology  
3 computes the present value of the margin associated with selling the kWh output of  
4 DLC's generating units over their remaining lives at market prices, compared to  
5 variable operating expenses. The present value of this margin for each generating  
6 unit equates to an estimate of the market value of DLC's generating units. In this  
7 respect, our approach is essentially the same as the methodology proposed by PECO  
8 in its restructuring filing.

9  
10 The present value calculation that is equated to market value is compared to the book  
11 value of the generating units. The difference is the loss that DLC would incur if it  
12 sold its generating assets at market prices.

13  
14 Implicit in this methodology is an assumption that the book value of generating assets  
15 is representative of the present value of the future stream of revenue requirements  
16 under regulation that DLC would otherwise recover from ratepayers. In this sense,  
17 our proposed methodology is an alternative way of performing a stranded cost  
18 analysis (and a preferred method in our view) from the methodology of comparing  
19 the full annual revenue requirements associated with each generating unit to revenues  
20 that could be achieved under market based pricing. Under the "annual revenue  
21 requirement versus market price" comparative methodology, an equity return and

1 associated taxes is included in the computation of the annual revenue requirements  
2 associated with each generating unit. This equity return (and corresponding tax  
3 gross-up) would be included in the stranded cost calculation under this comparative  
4 revenue requirement methodology for each year of the remaining life of DLC's  
5 generating units. If this equity return (and tax gross-up) were excluded, the reduction  
6 in stranded costs would be many times greater than the proposed adjustment that I  
7 am recommending in this proceeding. This is not the type of equity return  
8 disallowance that I am recommending.

9  
10 In summary, I believe that the proposal to employ a rate of return, exclusive of the  
11 equity return and associated tax gross-up, is an appropriate revenue requirement  
12 adjustment to reflect a just and reasonable level of generation stranded costs for  
13 recovery from ratepayers through the CTC mechanism.

1 The Appropriateness of Fixing the Level of Stranded Cost and Market Prices in this  
2 Proceeding

3  
4 **Q. DLC has proposed a restructuring approach in this proceeding that purportedly**  
5 **is designed to utilize estimates, on a year-by-year basis, of actual prices through**  
6 **the year 2005 to recover stranded cost from ratepayers. In addition, DLC is not**  
7 **proposing to establish a stranded cost level until mid 2003, calculated as of**  
8 **January 1, 2006. Do you have any comments regarding the Company's proposal**  
9 **in this regard?**

10  
11 **A. Yes. The Company has spent a considerable amount of time in the testimony of its**  
12 **witnesses David Marshall and Michael Schitzer discussing its position that stranded**  
13 **cost should not actually be calculated in this proceeding, using projected market**  
14 **prices. The Company strongly objects to the concept that market prices can be**  
15 **projected and thus objects to the concept that stranded cost can actually be estimated**  
16 **at this point in time.**

17  
18 The Company's primary proposal is to calculate CTC charges on an annual basis  
19 using estimates of market prices obtained from Duquesne Light Company's expected  
20 annual RFP for sales of energy and capacity. Apparently, under the Company's  
21 proposal, this would provide an interim collection of revenues that could be used to

1           offset the Company's stranded cost liability, although of course under the Company's  
2           proposal, there is no definitive stranded cost liability determined at this point in time.  
3           In the year 2003, an arbitration panel would be convened in which these issues would  
4           be determined.

5  
6           **Q.   Based on your understanding of the Company's proposal, during the five year**  
7           **period in which CTC revenues will be collected from ratepayers, is there any**  
8           **mechanism in place to determine whether such revenues will over- or under-**  
9           **collect stranded cost for DLC?**

10  
11          A.   No. Since the Company does not believe that stranded cost can actually be calculated  
12          in this proceeding, it is impossible, based on the Company's proposal, to know  
13          whether the CTC revenue that is being collected during this five year period will  
14          actually recover in excess of the Company's stranded cost liability that might exist,  
15          had the Commission had an opportunity to approve such a value.

16  
17          **Q.   Do you believe the Company's proposal for stranded cost recovery should be**  
18          **approved by the Commission?**

19  
20          A.   No. For a number of reasons that I will discuss, I believe that the Commission  
21          should reject the Company's proposal for recovering CTC revenues, without a

1 definitive stranded cost target that has been approved by the Commission. The  
2 Company's proposal is primarily one in which risks associated with stranded cost are  
3 shifted to the Company's customers and away from the Company's stockholders.  
4 Failing to fix a stranded cost recovery level at the beginning of the recovery period  
5 leads to substantial uncertainty on the part of the Company's customers, who will be  
6 facing unknown CTC charges in future transition period years, as well an uncertain  
7 length of time over which such charges will actually be collected. This would result,  
8 in my opinion, in an inappropriate regulatory framework for transitioning to retail  
9 competition. The DLC proposed framework is designed to provide the Company  
10 with a risk-free future with respect to stranded cost recovery while exposing its  
11 customers to the maximum risk associated with uncertainty regarding future market  
12 prices. This is clearly inappropriate and unfair to customers.

13  
14 **Q. Would you please elaborate on some of the other concerns that you have with**  
15 **the Company's proposal?**

16  
17 **A.** DLC's proposal should be rejected primarily because it does not definitively address  
18 the issue of the amount of stranded cost recovery from ratepayers. It represents a  
19 continuation of the current environment, at least through 2003. During that period  
20 of time, the Company would essentially collect revenues in the same manner that it  
21 currently collects them from customers, although these revenues would be

1 functionally unbundled. However, if a DLC customer chose to purchase from an  
2 alternative supplier, there would be no certainty as to the level of the CTC charges  
3 the customer would actually face at any given future year. The yearly CTC charge  
4 would be determined through an automatic process based on Duquesne's yearly RFP  
5 process. This is an unacceptable approach for ratemaking and would severely  
6 diminish the prospect of retail competition for DLC's customers. The DLC  
7 methodology will inhibit a customer's ability to enter into a supply contract for a  
8 duration of more than one year because that customer can not know what its CTC  
9 responsibility will be for those future years (and the corresponding target market price  
10 necessary to realize savings).

11  
12 DLC's customers deserve the level of certainty that other Pennsylvania utility  
13 customers will have with regard to the total stranded cost level approved for recovery  
14 for the Company and the yearly level of future CTC charges during the transition  
15 period. DLC's proposal does nothing to provide this type of certainty.

16  
17 In addition, under the Company's proposal, there would be an arbitration panel  
18 established in the year 2003 to determine the future level of CTC collection, which  
19 could easily extend beyond the year 2005. As a result of the arbitration process, the  
20 parties of interest (e.g., customers) will not have the opportunity to participate in  
21 evidentiary hearings before a PUC Administrative Law Judge. As a result, DLC's

1 customers will have no certainty regarding the final termination of CTC collections  
2 and thus will not know when the competition transition will be complete. This is in  
3 stark contrast to proposals by PECO and PP&L that fix the level of stranded cost  
4 recovery and CTC charges that customers will face.

5  
6 **Q. Do you think that the prospect of uncertainty with respect to future market**  
7 **prices should be an obstacle to the determination of a definitive level of stranded**  
8 **cost recovery for the Company in this proceeding?**

9  
10 A. No. I recognize that there is uncertainty with respect to future market prices.  
11 However, this was also true for PECO, PP&L and the GPU companies. In order to  
12 implement retail competition in Pennsylvania in a reasonable manner, it is necessary  
13 to develop a fixed level of stranded cost recovery in this proceeding, despite the  
14 uncertainty in forecasted market prices. This type of analysis is no different from the  
15 type of analyses that DLC has traditionally engaged in with respect to generation  
16 planning and economic decision making regarding the type of generating unit to add  
17 to its system. It has been a fact of life in the electric utility industry that long-term  
18 forecasts are required to make decisions. In this case, I believe it is necessary to  
19 establish the level of stranded cost, based on a reasonable projection of future market  
20 prices and determine the level and time period over which these stranded cost will  
21 be recovered from ratepayers through a CTC or ITC charge, if securitization is used.

1 This is precisely the purpose of this proceeding, and it should not be foreclosed due  
2 to the Company's concerns about forecast uncertainty.

3  
4 DLC's proposal is similar to selling an office building at a price that is determined  
5 only in the future, as rents are established each year. This may establish a more  
6 accurate valuation than the normal practice of estimating future cash flows (rents)  
7 today, but it is also not feasible, primarily, because there would be no certainty with  
8 regard to the economic value of the transaction to either party. Faced with such  
9 uncertainty, it is doubtful that either party would enter into the agreement. For the  
10 same reason, DLC's proposal in this case is not practical or reasonable.

11  
12 It is also important to recognize that DLC's proposal continues to rely on forecasts  
13 of market prices to determine the market value of generating assets as of January 1,  
14 2006. This is somewhat ironic; DLC will not rely on market price forecasts for the  
15 next nine years but will rely on forecasts for future years beginning in the year 2006.

16  
17 The big difference, of course, in the Company's plan from the approaches presented  
18 by most of the other Pennsylvania electric utilities, is that the determination of  
19 stranded cost will be made by a three person arbitration panel rather than through  
20 evidentiary hearings before a PUC ALJ. DLC's proposed process is not market-  
21 based, but rather, substitutes three individuals for a hearing process involving all

1 parties of interest. If DLC truly opposes an administratively determined stranded cost  
2 quantification, then the Company should commit to full divestiture, a process that  
3 would absolutely determine the market value of the Company's generating assets.

4  
5 **Q. Have you reviewed the Return on Equity "spillover" proposal discussed by DLC**  
6 **witness Donald Clayton?**

7  
8 A. Yes. First, as I previously indicated, under DII's proposed stranded cost recovery  
9 approach that establishes (and fixes) the recoverable level of Duquesne stranded costs  
10 in this proceeding, the Company's proposed ROE spillover mechanism would not be  
11 implemented. Having said this, it is interesting to note that the proposed ROE  
12 spillover mechanism is another example of the Company's restructuring approach that  
13 shifts future risk from shareholders to ratepayers. Although, on the surface, the ROE  
14 spillover mechanism appears to share excess earnings with ratepayers, it effectively  
15 protects the Company by continuing traditional revenue requirements accounting  
16 through the year 2005. Rather than establish a fixed quantification of stranded costs,  
17 the DLC proposal would implement an incentive ratemaking plan for the transition  
18 period 1999 through 2005. Although such a proposal may be appropriate within the  
19 context of continued regulation, it is not a substitute for deregulation.

1 Q. What is your recommendation regarding the Company's proposal in this  
2 proceeding for the recovery of stranded cost from ratepayers?

3

4 A. I believe that the Company's proposed framework should be rejected. The  
5 Commission should utilize the same approach in this case as the parties in the PECO  
6 and PP&L cases have proposed, i.e., a definitive determination of the total level of  
7 stranded cost (except for possible exceptions discussed by the Competition Act) and  
8 a fixed schedule of CTC charges to be recovered over a fixed and defined period of  
9 time.

10

11 Finally, assuming that DLC's proposal is rejected as I am recommending, it would  
12 also be appropriate to eliminate the Company's proposals to guarantee a minimum  
13 of \$1.7 billion in generation amortization and depreciation by 2005 and the ROE  
14 "spillover" proposal that credits stranded cost liability with excess earnings.

15

16 **CTC Revenue Tracking Mechanism**

17

18 Q. Would you please discuss your proposal for tracking CTC revenue collections  
19 to determine when the Company's stranded costs have been recovered from  
20 ratepayers?

1 Q. This issue concerns the basic process that I believe should be adopted by the  
2 Commission to monitor and track CTC revenue collections from ratepayers to ensure  
3 that the Company is given a reasonable opportunity to recover its stranded costs over  
4 the seven year transition period.

5  
6 DII is recommending that the CTC component of DLC's unbundled rates be  
7 established as a residual, after subtracting transmission, distribution and estimated  
8 market prices from DLC's current bundled rates. As such, the CTC component of  
9 the Company's tariffs, which will vary over the seven year period based on a fixed  
10 schedule, does not correspond specifically to the total present value stranded cost  
11 revenue requirement that we are recommending in this proceeding. It is thus very  
12 critical under this methodology (a CTC residual methodology), to fully track CTC  
13 revenue accumulation over the transition period to determine when the Company has  
14 fully collected its stranded costs.

15

16 **Q. What is your specific proposal regarding tracking CTC revenues?**

17

18 A. The Company should accumulate, on a monthly basis, all CTC revenues produced by  
19 all rate schedules. These amounts should reduce the unamortized stranded cost  
20 balance each month. The unamortized stranded cost balance should accrue interest  
21 monthly at a fully grossed-up cost of capital (revenue requirement level), or, in the

1 case of the securitization of stranded cost as is likely to occur, the interest rate on the  
2 transition bonds. When the monthly stranded cost balance is fully amortized (i.e., the  
3 balance is \$0), CTC collection is terminated. It should be noted that the stranded  
4 cost revenue requirement recommended by DII already reflects the equity return  
5 disallowance and thus no further disallowance should be incorporated into the CTC  
6 tracking mechanism.

7

8 **Q. Is it appropriate to track CTC revenues on a class-specific basis?**

9

10 A. No. I believe that it is appropriate to aggregate, on a monthly basis, all CTC  
11 revenues produced by the Company's retail customers.

12

13 **Q. Has DLC indicated the methodology that it would recommend for tracking CTC**  
14 **revenues?**

15

16 A. No. As discussed previously, DLC is proposing an additional proceeding in 2003 to  
17 address this issue.

18

19 **Q. Under your proposed methodology, is it possible that DLC would not fully**  
20 **recover its authorized level of stranded costs within the seven year transition**  
21 **period?**

1 A. Although I do not believe that this will occur, it is possible that the Company would  
2 not fully recover its allowed stranded costs (on a revenue requirement basis) over the  
3 seven year transition period. If this occurs, the Company could file a request for an  
4 extension of the CTC recovery period beyond seven years. However, the  
5 Commission should not pre-approve any extension of CTC recovery at this time.  
6 Rather, any Company filing should stand on its own merits at the time the filing is  
7 made, subject to other parties having an opportunity to present their views.

8  
9 **Q. If the Commission ultimately approves an extension for the recovery of CTC**  
10 **costs from ratepayers beyond the seven year period, do you believe that it is**  
11 **appropriate to extend the generation rate cap that will be in place during the**  
12 **first seven years of CTC recovery?**

13  
14 A. Yes. Following the general framework of the Competition Act, I believe that it is  
15 absolutely appropriate, if not essential, that the generation rate cap be extended  
16 beyond seven years, if the CTC recovery period is also extended beyond seven years.  
17 Clearly, the same rationale envisioned in the Competition Act for the establishment  
18 of a generation rate cap during the CTC recovery period of seven years would apply  
19 if the CTC recovery period is extended beyond seven years. Since consumers will  
20 be captive to the payment of the CTC, they should be afforded the protection of a  
21 generation rate cap during this period.

1 Appropriate Rate Design Methodology for CTC Development

2  
3 **Q. Would you please discuss the methodology that you are recommending for the**  
4 **development of the CTC component of each unbundled rate schedule?**

5  
6 A. I am recommending that the CTC component of each unbundled rate be calculated  
7 as a residual, after removing transmission, distribution and estimated market prices  
8 from the current bundled rate. The estimated market prices would be the identical  
9 market prices used to develop the quantification of overall stranded generation costs  
10 (market value component). This methodology is conceptually the same as proposed  
11 by DLC in this case for unbundling and is similar to the methodology suggested by  
12 the Commission in its unbundling of rates for the pilot retail access program. Under  
13 this approach, embedded transmission and distribution costs are removed from the  
14 current bundled rate leaving a generation component.

15  
16 Under this approach, estimated market prices for each of the seven years (or however  
17 long a CTC is required, short of seven years) are subtracted from the unbundled  
18 generation component, leaving a residual value that would then become the CTC for  
19 each year. Since market prices change during the seven year transition period,  
20 (increasing over time), the residual CTC would also vary (though fixed for each year  
21 at the time of unbundling) during the CTC recovery period. Since market prices are

1 increasing, while the total unbundled generation rate component remains constant, the  
2 CTC residual value each year would in fact decline. Under this approach, the market  
3 rate component of DLC's unbundled rate schedules would reflect expectations for  
4 market rates in each year of the transition period. As a result, if customers could  
5 obtain market rates at levels below the market generation rate component of DLC's  
6 unbundled rates in any given year, they would have an incentive to purchase power  
7 from an alternative supplier. This approach would result in an orderly development  
8 of a competitive market and provide opportunities for both customers and alternative  
9 generation suppliers to transact purchases and sales.

10  
11 Utilizing this approach to rate unbundling would give DLC's customers an  
12 opportunity to actually participate in the market.

13  
14 **Q. Would you please summarize your recommendation regarding the appropriate**  
15 **rate design methodology to establish the CTC and unbundle the Company's**  
16 **rates?**

17  
18 **A.** I am recommending that each of DLC's current bundled rates be unbundled using a  
19 method that removes the embedded transmission and distribution rate component  
20 from the overall bundled rate to produce a generation rate component that is then  
21 further unbundled by subtracting expected market prices for each of the seven years

1 during the transition period, leaving a residual value that becomes the CTC for the  
2 year. This is the methodology that has been proposed by DLC and one that will  
3 produce a reasonable opportunity for customers to actually participate in a  
4 competitive generation market.<sup>2</sup>

5  
6 **Q. Have you determined whether the methodology that you are recommending for**  
7 **the development of the CTC will give DLC the opportunity to recover its**  
8 **stranded costs from ratepayers?**

9  
10 **A.** Yes. Using the methodology that I have just described, I have estimated the CTC  
11 revenues that will be produced by each of DLC's rate schedules during the transition  
12 period. Based on the analysis that I have performed, DLC would recover, on a  
13 present value basis, 100% of the stranded costs recommended by DII in this  
14 proceeding by 2002.<sup>3</sup> A summary of this analysis appears in Baron Exhibit  
15 \_\_\_\_ (SJB-5).

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<sup>2</sup> DLC, of course, does not utilize expected market prices; but rather, its annual RFP process.

<sup>3</sup> This analysis assumes that all stranded costs have been securitized with transition bonds yielding 7%.

1 IV. RATE DESIGN ISSUES

2  
3 Unbundling Methodology

4  
5 **Q. Would you please discuss the specific methodology that you are recommending**  
6 **to unbundled DLC's rate schedules?**

7  
8 A. The basic methodology that I am recommending to unbundle DLC's rate schedules  
9 is similar computationally to the framework utilized by the Company. Beginning  
10 with the current bundled rates for each rate schedule, cost of service results are  
11 utilized to remove or unbundle the transmission and distribution components (delivery  
12 charge) of the rate. The residual amount remaining in the bundled rate reflects the  
13 generation component of the rate and forms the generation rate cap under the Act.

14  
15 **Q. In your unbundling analysis, did you utilize the distribution and transmission**  
16 **costs developed by DLC?**

17  
18 A. No. Although I have relied on the functionalized cost of service model for both  
19 distribution and transmission costs that was produced by DLC, I have made a number  
20 of adjustments, including the removal of costs that were inappropriately added to the

1 distribution and transmission charges in the Company's functional revenue  
2 requirement analysis for these two costs functions.

3  
4 **Q. Would you please discuss the specific adjustments that you have made to the**  
5 **Company's functional distribution and transmission costs analysis?**

6  
7 A. The first adjustment that I have made is to remove \$18 million of ancillary services  
8 costs that were inappropriately added to the Company's unbundled transmission rates.  
9 These production related ancillary services will be subject to competition and are  
10 more appropriately includable in the market price component of the unbundled  
11 generation rate. In this manner, customers may choose to purchase these services  
12 from the Company or an alternative supplier at competitive prices, not embedded  
13 cost.

14  
15 **Q. How have you reflected a provision for ancillary service in your analysis?**

16  
17 A. First, I have accepted the Company's proposed cost for reactive supply and voltage  
18 control. To reflect this cost, I have added the Company's estimated charges for this  
19 service to the market price for each year. This has a similar impact as adding this  
20 cost to the transmission revenue requirement (the method used by the Company).  
21 However, by including this cost in the market price component of the unbundled

1 generation rate, delivery service customers would purchase this service directly from  
2 their supplier or the Company's FERC tariff.

3  
4 **Q. What adjustment did you make for the remaining generation related ancillary**  
5 **services (e.g., spinning reserves) identified by the Company?**

6  
7 A. Since these generation related ancillary services are determined as a percentage of  
8 load, I have included the cost of all of these services through the application of a  
9 15% reserve margin adder to the market capacity prices calculated for each customer  
10 class. Essentially, by applying a 15% reserve margin adder, I have accounted for  
11 generation related ancillary service charges (other than reactive supply and voltage  
12 control) at market-based prices. This is also consistent with the assumption that we  
13 made in our stranded cost quantification; i.e., that all generating capacity would  
14 receive market-based capacity revenues. Furthermore, since all electric generation  
15 suppliers serving firm load will carry a reserve margin for reliability purposes, the  
16 reserve margin adder must be included in market prices for generation and not in the  
17 transmission component.

18  
19 **Q. Would you please discuss the next adjustment that you have made to the**  
20 **Company's distribution cost unbundling analysis?**

1 A. The next adjustment reverses the Company's shifting of capacity and energy costs  
2 from its production revenue requirements to distribution revenue requirements to  
3 reflect loss compensation services that DLC has inappropriately assigned to its  
4 distribution rates.

5  
6 As discussed in Mr. Lahtinen's testimony, DLC has included, at embedded cost, the  
7 costs associated with providing loss compensation for distribution losses in its  
8 distribution unbundled rates. This represents a shift of revenue requirements from  
9 production to distribution for a service that a customer may or may not wish to  
10 utilize, even if the customer is a delivery service customer using an alternative  
11 generation supplier. Such delivery service customers can purchase loss compensation  
12 capacity and energy from their alternative supplier and should not, under any  
13 circumstance, be required to purchase the capacity and energy of loss compensation  
14 from DLC as an embedded component of the distribution rate. Since DLC's  
15 customers are captive to DLC for distribution service, this is simply an application  
16 of monopoly power by the Company and should be rejected by the Commission as  
17 an adjustment to the Company's unbundled cost.

18  
19 In addition, the Company's adjustment is even more egregious with respect to full  
20 service customers who continue to buy generation resources from DLC. The costs  
21 associated with loss compensation are appropriately included in the generation

1 component of DLC's unbundled rate. The recognition of losses in the calculation of  
2 generation and CTC costs (associated with generation) properly compensates DLC for  
3 providing loss compensation capacity and energy to its full service customers. It is  
4 completely unreasonable and inappropriate to include these costs in the distribution  
5 charges themselves. Furthermore, the Company has included the costs of loss  
6 compensation capacity and energy at full embedded costs, without recognizing that,  
7 once the Company's stranded cost liability has been satisfied, the capacity and energy  
8 associated with loss compensation would be priced at market clearing levels, rather  
9 than embedded cost levels. Again, since loss compensation is a generation cost and  
10 not a distribution cost, it is inappropriate to add these to the distribution rates that all  
11 DLC's customers (both delivery and full service) are required to pay. With respect  
12 to distribution, DLC will continue to be a monopoly provider and it is therefore  
13 proper to remove this cost from the Company's rates.

14  
15 **Q. Have any of the other Pennsylvania utilities that have previously filed**  
16 **restructuring cases applied a loss compensation adder to distribution charges?**

17  
18 A. No. I have previously analyzed the filings made by PECO Energy Company, PP&L,  
19 Metropolitan Edison Company and Pennsylvania Electric Company with respect to  
20 rate unbundling issues. To my knowledge, none of these other utilities have included

1 an adjustment to their distribution rates for loss compensation power, as DLC has  
2 done in this proceeding.

3  
4 **Q. Do you believe that the Company's shifting of loss compensation capacity and**  
5 **energy from generation to distribution represents an impermissible shift of costs**  
6 **between functions as stipulated in the Competition Act?**

7  
8 A. Yes. The Competition Act prohibits cost-shifting between functional cost categories.  
9 This is exactly what Mr. Lahtinen has done by removing the cost associated with loss  
10 compensation capacity and energy from the production function and adding it to the  
11 distribution functions. This adjustment is inappropriate and should be eliminated in  
12 a proper calculation of distribution rates.

13  
14 **Q. Would you please discuss the final adjustment that you have made to the**  
15 **Company's unbundled distribution cost analysis?**

16  
17 A. DLC has developed its unbundling analysis using a rate of return on rate base at its  
18 requested cost of capital. Although such an approach might be appropriate in a rate  
19 proceeding in which class rates are going to be adjusted towards cost of service, it  
20 is not appropriate to use these results in this proceeding, since the current bundled  
21 rates reflect the earned rate of return produced by the rate class, and not DLC's

1       desired rate of return. As such, I have utilized the earned rate of return for each rate  
2       class to compute the distribution revenue requirements for each rate schedule in my  
3       unbundling analysis. This is consistent with the approach that other electric utilities  
4       in Pennsylvania have used. In general, I support the concept that rates should be  
5       based on costs and that each customer class (and therefore cost function within the  
6       class) should pay a rate of return based on the system average rate of return.  
7       However, since this is not a rate case and rates cannot actually be adjusted, the  
8       Company's proposal is not appropriate. In fact, it effectively results in a cost-shifting  
9       in violation of the Competition Act since the generation component of the unbundled  
10      rate for each rate schedule is computed as a residual. Any rate of return excess or  
11      deficiency (above or below the equal rate of return value) shows up in the generation  
12      component of each class' unbundled rate under the Company's analysis. This occurs  
13      because DLC has set the distribution rate at an equal rate of return level, despite the  
14      fact that the rate class may not be earning that rate of return. As a result of these  
15      problems, it is appropriate to utilize the earned return for each rate class in computing  
16      the unbundled distribution revenue requirements.

17  
18      **Q.    Would you please discuss the market prices that you employed for each of the**  
19      **seven years during the transition period in your unbundling analysis?**

1 A. The expected market prices, both capacity and energy, employed in our unbundling  
2 analysis are derived from the market prices calculated by DII witness Falkenberg and  
3 used in our stranded generation cost market value analysis. Mr. Falkenberg has  
4 calculated hourly marginal costs and annual capacity prices for each year of his  
5 analysis. In order to utilize these hourly market clearing energy prices and annual  
6 capacity values to develop market rates for each rate schedule, annual energy prices  
7 have been calculated for on- and off-peak periods for each of the seven transition  
8 years. Baron Exhibit \_\_\_\_ (SJB-6) summarizes the on- and off-peak energy prices  
9 and annual capacity values derived from Mr. Falkenberg's market price forecast.

10

11 **Q. How were these on- and off-peak energy prices and annual capacity values**  
12 **utilized to develop market prices for each rate schedule?**

13

14 A. DLC has provided on- and off-peak kWh usage for each rate schedule in its  
15 workpapers. Using these kWh values, weighted average market prices for energy  
16 were calculated for each rate schedule.

17

18 **Q. How is the annual capacity value assigned to a rate schedule and used to**  
19 **produce an unbundled market price?**

1 A. I employed the two CP (summer/winter average) demand for the test year for each  
2 class, adjusted for losses, to determine the total amount of capacity that would be  
3 required to meet each customer's load, for each year of the analysis. It should be  
4 noted, that throughout the transition period, no load growth was assumed in the rate  
5 design analysis. This is essentially the same assumption that DLC employed, and,  
6 of course, to the extent that there is load growth, it would be recognized by an  
7 acceleration in CTC revenue recovery.

8  
9 Once the total required capacity mW's have been computed, a total capacity revenue  
10 requirement can be developed by multiplying this load value by the market capacity  
11 rate shown in Baron Exhibit \_\_\_\_ (SJB-6) for each of the seven transition years. This  
12 capacity revenue requirement is then utilized in the unbundling analysis by  
13 developing a capacity component of the market price. For rate schedules, such as  
14 residential, where there is no demand charge in the tariff, the capacity revenue  
15 requirements are simply unitized by total kWh sales. For rate schedules such as L  
16 or HVPS, where specific demand charges are part of the tariff, the market capacity  
17 revenue requirements are unitized by billing demand to produce a market demand  
18 charge.

19  
20 Energy rates are adjusted by each class' energy loss factor to produce the market  
21 energy rate (average annual value) for each year of the seven year transition period.

1 Finally, I have added the allocated amount of ancillary service costs for the class to  
2 the market price revenues using a 12 CP allocation factor.

3  
4 **Q. Have you prepared specific unbundling analyses of DLC's rate schedules?**

5  
6 A. Yes. For presentation purposes, I have developed exhibits that illustrate the  
7 unbundling analysis that I am recommending for Rate Schedule RS (residential) and  
8 Rate Schedules L and HVPS (industrial).

9  
10 Baron Exhibit \_\_\_\_ (SJB-7), pages 1 and 2 show the residential unbundling analysis  
11 following the methodology that I have previously described. The market generation  
12 rate for energy is assumed to be flat for all kWh blocks of the rate. This reflects the  
13 fact that no such blocking would actually occur in a competitive market.

14  
15 Baron Exhibit \_\_\_\_ (SJB-7), page 1, shows the specific unbundled transmission,  
16 distribution, and embedded generation rate cap (the generation portion of the current  
17 bundled rate). Also shown on page 1 of Exhibit \_\_\_\_ (SJB-7) is the development of  
18 the market prices for the residential rate schedule. For residential customers, the  
19 resulting average annual market rate beginning in 1999 is 3.0¢ per kWh. By the year  
20 2005, this market price for residential customers would increase to 4.15¢ per kWh.

1           Again, these are the market prices assumed by DII in our stranded generation cost  
2           analysis, in which we calculate the market prices paid to DLC's generators.

3  
4           Once again, because market prices vary each year, while the embedded generation  
5           rate component (the rate cap) of Rate Schedule RS remains constant, the resulting  
6           residual CTC declines each year during the transition period. It also should be noted  
7           that the CTC charge is fixed for each of the seven years at the time of unbundling  
8           and would not change if actual future market prices differed from expected market  
9           prices used in the analysis. It would be totally inconsistent to modify the market  
10          prices each year to reflect actual values and thus modify the CTC, while not  
11          modifying the overall stranded cost calculation. Since the stranded cost calculation  
12          will not be modified, it is not appropriate to modify any of the elements of the  
13          unbundled rate for any of the seven transition years. Page 2 of Exhibit \_\_\_\_ (SJB-7)  
14          shows the development of the market generation rate for Schedule RS.

15  
16   **Q.    Would you present the results of your unbundling analysis for Rate Schedules**  
17   **L and HVPS?**

18  
19   **A.    Baron Exhibit \_\_\_\_ (SJB-8), pages 1 and 2 show the unbundling analysis for Rate**  
20   **Schedule L. Following the same methodology described for the residential class,**  
21   **market energy prices and capacity values are converted into an overall market**

1 demand and energy rate for Rate Schedule L. Page 1 shows the initial unbundling  
2 analysis, including the unbundling of distribution and transmission charges. As  
3 shown on page 1 of the exhibit, the Rate L unbundling analysis that I am  
4 recommending continues to rely on DLC's rate blocks for the development of the  
5 CTC charges. Baron Exhibit \_\_\_\_ (SJB-9) shows the analysis for Rate Schedule  
6 HVPS.

7  
8 **Q. Do you recommend that similar methodologies be employed to unbundle all of**  
9 **DLC's rate schedules?**

10  
11 A. Yes. Although I have only illustrated in this testimony the analyses for the  
12 residential and large industrial classes, similar analyses can be performed for each  
13 rate schedule. Utilizing the same input market prices as shown for the residential and  
14 large industrial class, each rate schedule has been unbundled to produce a market  
15 price for each of the seven transition years and corresponding CTC values.

1 DLC's Proposed "Fixed Charge" Recovery Mechanism for CTC Costs

2

3 Q. Would you please discuss DLC's proposal with regard to recovering CTC  
4 charges from customer rate schedules.

5

6 A. DLC is proposing an unbundling mechanism that customizes a substantial portion of  
7 the CTC charges of each of its customer's at a fixed dollar per month level using an  
8 analysis reflecting each customer's 1996 level of usage. The Company argues that  
9 this approach provides economically efficient price signals to customers by reducing  
10 the effect on marginal prices from the CTC charge embedded in DLC's rates during  
11 the transition period. The Company believes that it will provide more "efficient"  
12 price signals to customers than would be the case if the full CTC were recovered  
13 through normal billing units (i. e., kWh and kW charges).

14

15 Since DLC is proposing that the calculation of CTC charges be made on an annual,  
16 on-going basis through the transition period, each Duquesne customer would be  
17 charged a new, unpredictable, customer charge, each year under the Company's plan.

18

19 Q. Has the Company provided any examples of how its proposal would actually  
20 work?

1 A. Yes. Company witness James A. Lahtinen has described the process in his testimony  
2 and has provided an example for a typical Residential (RS) customer using a 1996  
3 market price of 1.856¢ per kWh.

4  
5 Under the Company's proposal, the requested CTC charge for each year would be  
6 disaggregated in to a variable charge that would be identical for all customers within  
7 a rate schedule, although the charge would be different across rate schedules. The  
8 residual amount of the CTC (that portion not collected in the variable charge) would  
9 be uniquely collected for the customer through an additional fixed monthly customer  
10 charge, determined based on 1996 kWh usage.

11  
12 Based on Mr. Lahtinen's example for 1996 (Lahtinen direct at page 66), the customer  
13 charge for a 500 kWh per month customer would increase from \$6.38 per month to  
14 \$34.62 per month (\$6.38 plus \$28.24 customer-specific CTC charge). This \$34.62  
15 per month charge would be imposed, regardless of the actual level of monthly kWh  
16 usage.

17  
18 **Q. Using Mr. Lahtinen's Rate Schedule RS example, what are the implications for**  
19 **DLC's customer from the proposed customer-specific CTC charge?**

1 A. The most significant implication is that the fixed, customer component of the bill  
2 would now equate to 54% of the monthly bill.<sup>4</sup> As a result, 54% of a typical 500  
3 kWh per month residential customer's monthly bill is a take-or-pay charge. It is  
4 paid, regardless of whether or not a customer actually consumes any electricity during  
5 the month.

6  
7 **Q. Do you believe that the Company's economic efficiency arguments provide any**  
8 **basis for its proposed CTC rate design?**

9  
10 A. No. DLC has gone to great lengths to justify its customer-specific CTC recovery  
11 mechanism on the grounds that it provides economically efficient price signals. The  
12 Company's arguments in this regard cannot support what otherwise amounts to a  
13 take-or-pay charge for 89% of its stranded costs.<sup>5</sup> Most customers will be aware of  
14 the economic alternatives available to them with respect to market prices for energy  
15 and the prices paid to DLC for each unbundled rate component, including the CTC.  
16 As the transition into a competitive environment continues, market forces will

---

<sup>4</sup> This is calculated as follows, based on Mr. Lahtinen's example:  $(\$6.38 + \$28.24)/(\$63.76) = 54\%$ .

<sup>5</sup> This is based on results from the residential class previously discussed and found on page 66 of Mr. Lahtinen's direct testimony. Total CTC charges for 500 kWh residential customer are:  $(\$28.24 + \$3.58) = \$31.82$ . The customer-specific fixed portion of \$28.24 is 89% of the total.

1 effectively determine the consumption patterns of DLC's large customers. Mr.  
2 Lahtinen has provided no specific evidence that supports the notion that economic  
3 efficiency is enhanced by charging 89% of the CTC through a fixed monthly  
4 (customized) charge rather than through the normal billing determinants of the rate.  
5 On the other hand, there are substantial reasons why it is inappropriate to charge  
6 customers what amounts to a take-or-pay charge for 89% of the Company's stranded  
7 costs.

8  
9 **Q. Would you please discuss some of the reasons why it is inappropriate to charge**  
10 **customers a take-or-pay charge for 89% of the customer's share of DLC's**  
11 **stranded cost?**

12  
13 **A.** First of all, DLC's proposal shifts a substantial amount of risk to its customers that  
14 does not currently exist. By establishing a CTC "fixed charge" associated with 89%  
15 of a customer's otherwise payable CTC charges, the Company has shifted risks from  
16 itself to the customer by eliminating potential variability due to usage changes. By  
17 creating a take-or-pay charge for each of the Company's customers, DLC  
18 substantially reduces its recovery risk associated with 50% of the otherwise applicable  
19 stranded cost recovery through the CTC charge.

1 Currently, in the Company's bundled rates, no such take-or-pay liability is placed on  
2 DLC's customers for these costs. By shifting the risk during the CTC recovery  
3 period to customers for a substantial portion of total fixed costs, the Company has  
4 implicitly violated the spirit of the Competition Act's rate cap protection. Although  
5 specific costs have not been explicitly shifted under the Company's proposal, on a  
6 risk adjusted basis, DLC's customers will be paying higher rates than they otherwise  
7 would pay under the currently applicable bundled service rates. This is clearly  
8 inappropriate and not in keeping with the concept underlying the generation rate cap  
9 embodied in the Competition Act. In simple terms, customers do not now have take-  
10 or-pay liabilities associated with a portion of DLC's fixed cost. Under DLC's  
11 proposal, after unbundling, they will incur such take-or-pay liabilities during the CTC  
12 recovery period.<sup>6</sup>

13  
14 **Q. Do you believe that it is reasonable for the Company to implement its customer-**  
15 **specific CTC proposal?**

---

<sup>6</sup> This would be particularly egregious in the case of HVPS customers who utilized as available, "Generation Avoidance" energy during 1996. Since DLC assumes that such energy, on an unbundled basis, would be priced at off-peak rates, the "Fixed CTC" would be positive. This means that for the next seven years, these customers would pay a take-or-pay charge for "generation avoidance energy" that may not even be available in the future, simply because it was available (and used) in 1996.

1 A. No. The proposal should be rejected. The Company's proposal represents an  
2 inappropriate shifting of risk from stockholders to customers for a substantial portion  
3 of revenue requirements. In addition, the proposal is highly complex and generates  
4 unreasonable levels of uncertainty regarding the future level of rates as the transition  
5 to competition proceeds.

1 **Rule 4 Contract - Rate Unbundling**

2

3 **Q. Has the Company addressed a proposal to unbundle Rule 4 special contracts?**

4

5 A. Based on my review of the Company's filing, I did not identify a specific proposal  
6 by DLC to unbundle Rule 4 contracts. Unless prohibited by the contract itself,  
7 customers subject to Rule 4 contracts should be permitted to access the competitive  
8 market in a similar fashion to all other DLC customers.

9

10 **Q. How should Rule 4 contract rates be unbundled?**

11

12 A. These contracts should be unbundled in an identical manner to the method used to  
13 unbundle all of the other DLC rates. For each contract, I would recommend that the  
14 distribution, transmission and market energy components of the rate be established  
15 at the level corresponding to these same unbundled rate elements for a firm service  
16 tariff that would otherwise be applicable to the customer (e.g., Rate LD). The  
17 residual component of the bundled rate, after removing distribution, transmission and  
18 a market price component would reflect the applicable CTC associated with the  
19 specific Rule 4 contract being unbundled. This would then become the CTC charge  
20 applicable to this customer, either as a full service customer or a delivery service  
21 customer. This approach appears to be consistent with DLC's proposed unbundling

1 of its Rider No. 8 Economic Development Rates (direct testimony of James A.  
2 Lahtinen, page 85, lines 17-18).

3  
4 **Other Tariff Issues**

5  
6 **Q. Have you reviewed the Company's proposed revisions to Rider No. 7 --**  
7 **Interruptible Service?**

8  
9 A. Yes. The Company is proposing to continue offering this rider to existing customers  
10 (taking service on the rider) as of December 31, 1998. However, DLC is proposing  
11 to limit availability of the rider to full service customers. Full service customers  
12 must take all of their electric energy from the Company.

13  
14 **Q. Are there any provisions in the proposed revisions to Rider 7 that would permit**  
15 **a customer who purchases electric energy from both DLC and an alternative**  
16 **supplier to utilize Rider 7 in conjunction with the DLC portion of the customer's**  
17 **electric energy purchases?**

18  
19 A. No. Since Rider 7 is available to only full service customers who must take all of  
20 their electric energy from DLC, a customer who purchases from both the Company

1 and an alternate supplier would not be able to utilize Rider 7, if DLC's proposed  
2 tariff change is adopted.

3  
4 **Q. Do you believe that the proposed Rider 7 availability restriction is reasonable**  
5 **during the transition period when a CTC is being collected from ratepayers?**

6  
7 A. No. Although Rider 7 should only be available and applicable for electric energy  
8 purchased from the Company, it is unreasonable to restrict its availability for the  
9 portion of a customer's electric energy served by DLC, in cases where a customer  
10 purchases from both DLC and an alternate supplier. The Company's restriction on  
11 Rider 7 availability is in violation of the rate cap protections under by the  
12 Competition Act that are applicable during the transition period when a CTC or ITC  
13 is being collected from ratepayers. Finally, it would be inappropriate to restrict the  
14 availability of this rider to customers who took service under the rider as of  
15 December 31, 1998. This represents a tariff change that is unrelated to DLC's  
16 restructuring and it should not be included as part of rate unbundling. These tariff  
17 restrictions must be modified to reflect the availability of Rider 7 for electric energy  
18 served by DLC, even if the customer is also purchasing electric energy from an  
19 alternate supplier.

1    **Q.    Is the Company proposing similar availability restrictions on other tariffs or**  
2    **riders?**

3

4    A.    Yes.  DLC is proposing similar restrictions regarding availability (a customer must  
5    contract under the rider before December 31, 1998 to qualify) for Rider No. 5 --  
6    Time-of-Day Discounts.  For the same reason as I discussed previously in regards to  
7    Rider No. 7, this availability restriction for Rider No. 5 should be eliminated during  
8    the transition period when a CTC is being collected from ratepayers.

9

10   **Q.    Have you reviewed the Company's proposed unbundled HVPS tariff provisions**  
11   **with regard to "Generation Avoidance" energy?**

12

13   A.    Yes.  DLC's proposed Rate HVPSD fails to include a provision for "Generation  
14    Avoidance" energy that is currently included in the Rate HVPS tariff.  Generation  
15    Avoidance energy is designed to permit an HVPS customer that produces a portion  
16    of its energy requirements for its own use, using its own internal generating  
17    equipment, to purchase from DLC and avoid the use of alternate energy sources.

18

19   **Q.    Is the Company's proposal to eliminate the availability of Generation Avoidance**  
20   **energy on rate HVPSD justified or reasonable?**

1 A. No. Under the rate cap provisions of the Competition Act, the Company must  
2 continue offering this tariff provision during the transition period when a CTC is  
3 being collected from ratepayers. By eliminating this or any other tariff provision,  
4 DLC is effectively increasing its charges above the level of January 1, 1997 for Rate  
5 HVPS customers. This is in violation of the Act. The Company's Rate HVPSD  
6 should be modified to incorporate the Generation Avoidance energy provisions  
7 contained in the current Rate HVPS tariff.

8  
9 **Q. Have you reviewed the testimony of Duquesne witness Frank Hoffmann**  
10 **regarding the Company's proposal to eliminate existing economic development**  
11 **Riders Nos. 8 and 20, after the year 2000?**

12  
13 A. Yes. Mr. Hoffman, at pages 16 to 20 of his testimony discusses the Company's  
14 proposals for economic development rate incentives and the disposition of existing  
15 Riders. Of particular concern to DII is the proposal to eliminate Riders Nos. 8 and  
16 20 after the year 2000.<sup>7</sup>

17  
18 At the same time, the Company will continue offering economic incentives (through  
19 Riders Nos. 9 and 20) to new customers only.

---

<sup>7</sup> Customers with current contracts under these riders would be permitted to continue until the expiration of their existing contracts. Rider 20 would continue to be available to new customers only.

1 Q. Do you have any concerns about the Company's proposals?

2

3 A. Yes. The Company's proposal to introduce "unequal" treatment between new  
4 Duquesne customers and existing customers that add new load is discriminatory and  
5 could place existing customers at a substantial competitive disadvantage to new  
6 customers. The Company's proposal to eliminate Rider No. 8 and eliminate the  
7 availability of Rider No. 20 to existing customers should be rejected.

8

9 **Transmission Rate Design Issues**

10

11 Q. Do you have any comments on DLC's proposed transmission rate design and  
12 delivery charge rate unbundling analysis?

13

14 A. Yes. DLC's customers (particularly larger customers) may wish to directly access  
15 transmission service rates under the FERC Order 888 tariff. If such a customer elects  
16 to take service directly under the FERC tariff, I would not expect that the T&D rate  
17 cap protection would apply to any additional ancillary service costs that may be  
18 imposed on the customer for usage of various service components.

19

20 However, if the customer chooses or elects an alternative generation supplier and  
21 continues to purchase delivery service (T&D) from DLC, then at least for the 54

1 month T&D rate cap period through June 2001, there should be no additional  
2 ancillary service charges imposed on such customers. The DII position is that it  
3 would be inappropriate to include any additional ancillary service costs in this  
4 scenario. Clearly, it would be a violation of the T&D rate cap provision to charge  
5 additional ancillary service costs to a customer who utilizes DLC's delivery service  
6 for their purchases of alternative generation supplies. These ancillary services are  
7 already provided in the current bundled rate.

8  
9 **Selection of Customers for Participation in the Phase-In of Retail Access**

10  
11 **Q. Under the proposed phase-in plan for participation in retail access, 33% of**  
12 **DLC's retail load would be eligible for participation beginning January 1, 1999,**  
13 **with a second phase to include 66% of all retail load beginning on January 1,**  
14 **2000. How should customers be selected for participation from each rate**  
15 **schedule?**

16  
17 **A.** The most appropriate methodology for selecting large customers on Rate Schedules  
18 40 through 46 is a "first come, first served" basis, with the customer designating a  
19 desired level of load for participation in direct access. For each phase-in period,  
20 DLC should select customers on the basis of a first come, first served approach unless  
21 and until there is an over-subscription of load for each phase.

1 **Q. What is your recommendation if such an over-subscription to any phase-in load**  
2 **level occurs?**

3  
4 A. If, for a specific rate class, there is an over-subscription of customer nominated loads  
5 based on a first come, first served selection, there should be a pro-rata reduction to  
6 each subscriber's nominated load amount, such that the total load available for that  
7 rate class meets the requirements of the Act. Thus, if all customers in a class  
8 nominate 100% of their load, all customers are assured of at least 33% of their load  
9 for participation.

10  
11 **Q. Could this first come, first served selection process, coupled with a prorata**  
12 **reduction in the case of over-subscriptions, still produce problems for some large**  
13 **industrial and commercial customers, who receive less than 100% of their**  
14 **nomination?**

15  
16 A. Yes, but the Commission can help alleviate these problems by requiring DLC to  
17 begin the next phase of its selection one day (January 2, 1999) following the selection  
18 for the first phase. Under the Competition Act, DLC is required to complete its  
19 second phase by January 1, 2000. However, the Company can begin selection of the  
20 second phase and actually implement such a selection process by permitting retail  
21 access for up to 66% of peak load beginning on January 2, 1999. A similar

1 adjustment can be made to the second phase such that on January 2, 2000, all  
2 remaining customers can be selected for participation in the retail access program.  
3 The Commission should adopt this proposal as a methodology to deal with such  
4 contingencies.

5  
6 **Q. Have you reviewed the testimony of DLC witness Frank Hoffman regarding the**  
7 **customer selection process during the phase-in?**

8  
9 A. Yes. The Company is proposing a selection criteria for industrial customers based  
10 on an SIC code segmentation, together with a vague prioritization "based on the  
11 results of our pilot program open enrollment process" (Hoffmann at page 4, lines 8  
12 to 9).

13  
14 **Q. Do you believe that the Company's approach to industrial customer selection for**  
15 **the phase-in plan is reasonable?**

16  
17 A. No. First, there is no basis for segmenting each large rate schedule by SIC code.  
18 The Competition Act requires equal treatment for each rate schedule, not specific  
19 categories of customers within rate schedules. Furthermore, the Company's proposal  
20 is vague and provides absolute control to DLC, rather than relying on general  
21 principles, such as "first come, first served selection criteria," that DII is proposing.

1           The Company's proposed SIC segmentation method of customer selection should be  
2           rejected.

3

4   **Q.   Under a first come, first served selection process, it is likely that many customers**  
5           **will be served by both the Company and an alternative supplier during the**  
6           **phase-in period. Are there any tariff modifications that must be made to**  
7           **accommodate this situation?**

8

9   A.   Yes. DLC has proposed restrictions on a number of existing tariffs and riders that  
10          would make them available only to full service customers who do not purchase from  
11          an alternative supplier. In order to accommodate customers who are forced, by the  
12          phase-in limitations, to split loads among DLC and alternative suppliers during the  
13          phase-in, the Company's tariff and rider restrictions should be modified to permit  
14          existing customers taking service under these tariffs or riders to continue for that  
15          portion of their respective loads forced (by the phase-in restrictions) to be served by  
16          the Company. This modification would only apply during the phase-in period.

17

18   **Q.   Does that complete your testimony?**

19

20   A.   Yes, it does.

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY )  
COMMISSION, ET. AL. )

v. )

) DOCKET NO. R-00974104

DUQUESNE LIGHT COMPANY )  
FOR APPROVAL OF ITS )  
RESTRUCTURING PLAN UNDER )  
SECTION 2806 OF THE )  
PUBLIC UTILITY CODE )

**EXHIBITS**  
  
**OF**  
  
**STEPHEN J. BARON**

ON BEHALF OF THE

**DUQUESNE INDUSTRIAL INTERVENORS**

**BOC Gases**  
**General Motors Corp.**  
**J&L Specialty Steel, Inc.**  
**LTV Steel Company, Inc.**

**Nabisco Inc.**  
**Nova Chemicals, Inc.**  
**USX Corporation - US Steel Group**

**J. KENNEDY AND ASSOCIATES, INC.**  
**ATLANTA, GEORGIA**

**NOVEMBER 1997**

**Expert Testimony Appearances  
of  
Stephen J. Baron  
As of October 1997**

| <u>Date</u> | <u>Case</u> | <u>JurisdicT.</u>   | <u>Party</u>                                     | <u>Utility</u>                 | <u>Subject</u>  |
|-------------|-------------|---------------------|--|--------------------------------|---|
| 4/81        | 203(B)      | KY                  | Louisville Gas & Electric Co.                    | Louisville Gas & Electric Co.  | Cost-of-service.  |
| 4/81        | ER-81-42    | MO                  | Kansas City Power & Light Co.                    | Kansas City Power & Light Co.  | Forecasting.  |
| 6/81        | U-1933      | AZ                  | Arizona Corporation Commission                   | Tucson Electric Co.            | Forecasting planning.   |
| 2/84        | 8924        | KY                  | Airco Carbide                                    | Louisville Gas & Electric Co.  | Revenue requirements, cost-of-service, forecasting, weather normalization.                            |
| 3/84        | 84-038-U    | AR                  | Arkansas Electric Energy Consumers               | Arkansas Power & Light Co.     | Excess capacity, cost-of-service, rate design.  |
| 5/84        | 830470-EI   | FL                  | Florida Industrial Power Users' Group            | Florida Power Corp.            | Allocation of fixed costs, load and capacity balance, and reserve margin. Diversification of utility. |
| 10/84       | 84-199-U    | AR                  | Arkansas Electric Energy Consumers               | Arkansas Power and Light Co.   | Cost allocation and rate design.  |
| 11/84       | R-842651    | PA                  | Lehigh Valley Power Committee                    | Pennsylvania Power & Light Co. | Interruptible rates, excess capacity, and phase-in.   |
| 1/85        | 85-65       | ME                  | Airco Industrial Gases                           | Central Maine Power Co.        | Interruptible rate design.  |
| 2/85        | I-840381    | PA                  | Philadelphia Area Industrial Energy Users' Group | Philadelphia Electric Co.      | Load and energy forecast.   |
| 3/85        | 9243        | KY                  | Alcan Aluminum Corp., et al.                     | Louisville Gas & Electric Co.  | Economics of completing fossil generating unit.   |
| 3/85        | 3498-U      | GA                  | Attorney General                                 | Georgia Power Co.              | Load and energy forecasting, generation planning economics.   |
| 3/85        | R-842632    | PA                  | West Penn Power Industrial Intervenors           | West Penn Power Co.            | Generation planning economics, prudence of a pumped storage hydro unit.                               |
| 5/85        | 84-249      | AR                  | Arkansas Electric Energy Consumers               | Arkansas Power & Light Co.     | Cost-of-service, rate design return multipliers.  |
| 5/85        |             | City of Santa Clara | Chamber of Commerce                              | Santa Clara Municipal          | Cost-of-service, rate design.   |

**Expert Testimony Appearances  
of  
Stephen J. Baron  
As of October 1997**

| <b>Date</b> | <b>Case</b>   | <b>Jurisdct.</b> | <b>Party</b>                              | <b>Utility</b>                   | <b>Subject</b>  |
|-------------|---------------|------------------|---|----------------------------------|---|
| 6/85        | 84-768-E-42T  | WV               | West Virginia Industrial Intervenors      | Monongahela Power Co.            | Generation planning economics, prudence of a pumped storage hydro unit. |
| 6/85        | E-7 Sub 391   | NC               | Carolina Industrials (CIGFUR III)         | Duke Power Co.                   | Cost-of-service, rate design, interruptible rate design.                |
| 7/85        | 29046         | NY               | Industrial Energy Users Association       | Orange and Rockland Utilities    | Cost-of-service, rate design.   |
| 10/85       | 85-043-U      | AR               | Arkansas Gas Consumers                    | Arkla, Inc.                      | Regulatory policy, gas cost-of-service, rate design.                    |
| 10/85       | 85-63         | ME               | Airco Industrial Gases                    | Central Maine Power Co.          | Feasibility of interruptible rates, avoided cost.                       |
| 2/85        | ER-8507698    | NJ               | Air Products and Chemicals                | Jersey Central Power & Light Co. | Rate design.  |
| 3/85        | R-850220      | PA               | West Penn Power Industrial Intervenors    | West Penn Power Co.              | Optimal reserve, prudence, off-system sales guarantee plan.             |
| 2/86        | R-850220      | PA               | West Penn Power Industrial Intervenors    | West Penn Power Co.              | Optimal reserve margins, prudence, off-system sales guarantee plan.     |
| 3/86        | 85-299U       | AR               | Arkansas Electric Energy Consumers        | Arkansas Power & Light Co.       | Cost-of-service, rate design, revenue distribution.                     |
| 3/86        | 85-726-EL-AIR | OH               | Industrial Electric Consumers Group       | Ohio Power Co.                   | Cost-of-service, rate design, interruptible rates.                      |
| 5/86        | 86-081-E-GI   | WV               | West Virginia Energy Users Group          | Monongahela Power Co.            | Generation planning economics, prudence of a pumped storage hydro unit. |
| 8/86        | E-7 Sub 408   | NC               | Carolina Industrial Energy Consumers      | Duke Power Co.                   | Cost-of-service, rate design, interruptible rates.                      |
| 10/86       | U-17378       | LA               | Louisiana Public Service Commission Staff | Gulf States Utilities            | Excess capacity, economic analysis of purchased power.                  |
| 12/86       | 38063         | IN               | Industrial Energy Consumers               | Indiana & Michigan Power Co.     | Interruptible rates.  |

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**J. KENNEDY AND ASSOCIATES, INC.**

**Expert Testimony Appearances  
of  
Stephen J. Baron  
As of October 1997**

| Date  | Case                         | Jurisdiction                                | Party                                     | Utility                             | Subject  |
|-------|------------------------------|---|---|-------------------------------------|--|
| 3/87  | EL-86-53-001<br>EL-86-57-001 | Federal Energy Regulatory Commission (FERC) | Louisiana Public Service Commission Staff | Gulf States Utilities, Southern Co. | Cost/benefit analysis of unit power sales contract.                                |
| 4/87  | U-17282                      | LA  | Louisiana Public Service Commission Staff | Gulf States Utilities               | Load forecasting and imprudence damages, River Bend Nuclear unit.                  |
| 5/87  | 87-023-E-C                   | WV  | Airco Industrial Gases                    | Monongahela Power Co.               | Interruptible rates.   |
| 5/87  | 87-072-E-G1                  | WV  | West Virginia Energy Users' Group         | Monongahela Power Co.               | Analyze Mon Power's fuel filing and examine the reasonableness of MP's claims.     |
| 5/87  | 86-524-E-SC                  | WV  | West Virginia Energy Users' Group         | Monongahela Power Co.               | Economic dispatching of pumped storage hydro unit.                                 |
| 5/87  | 9781                         | KY  | Kentucky Industrial Energy Consumers      | Louisville Gas & Electric Co.       | Analysis of impact of 1986 Tax Reform Act.   |
| 6/87  | 3673-U                       | GA  | Georgia Public Service Commission         | Georgia Power Co.                   | Economic prudence, evaluation of Vogtle nuclear unit - load forecasting, planning. |
| 6/87  | U-17282                      | LA  | Louisiana Public Service Commission Staff | Gulf States Utilities               | Phase-in plan for River Bend Nuclear unit.   |
| 7/87  | 85-10-22                     | CT  | Connecticut Industrial Energy Consumers   | Connecticut Light & Power Co.       | Methodology for refunding rate moderation fund.                                    |
| 8/87  | 3673-U                       | GA  | Georgia Public Service Commission         | Georgia Power Co.                   | Test year sales and revenue forecast.  |
| 9/87  | R-850220                     | PA  | West Penn Power Industrial Intervenors    | West Penn Power Co.                 | Excess capacity, reliability of generating system.                                 |
| 10/87 | R-870651                     | PA  | Duquesne Industrial Intervenors           | Duquesne Light Co.                  | Interruptible rate, cost-of-service, revenue allocation, rate design.              |
| 10/87 | I-860025                     | PA  | Pennsylvania Industrial Intervenors       |                                     | Proposed rules for cogeneration, avoided cost, rate recovery.                      |
| 10/87 | E-015/<br>GR-87-223          | MN  | Taconite Intervenors                      | Minnesota Power & Light Co.         | Excess capacity, power and cost-of-service, rate design.                           |

**Expert Testimony Appearances  
of  
Stephen J. Baron  
As of October 1997**

| Date  | Case  | Jurisdct.                    | Party  | Utility  | Subject  |
|-------|---|------------------------------|--|--|--|
| 10/87 | 8702-EI   | FL                           | Occidental Chemical Corp.                                      | Florida Power Corp.                                      | Revenue forecasting, weather normalization.                                  |
| 12/87 | 87-07-01  | CT                           | Connecticut Industrial Energy Consumers                        | Connecticut Light Power Co.                              | Excess capacity, nuclear plant phase-in.                                     |
| 3/88  | 10064   | KY                           | Kentucky Industrial Energy Consumers                           | Louisville Gas & Electric Co.                            | Revenue forecast, weather normalization rate treatment of cancelled plant.   |
| 3/88  | 87-183-TF   | AR                           | Arkansas Electric Consumers                                    | Arkansas Power & Light Co.                               | Standby/backup electric rates.   |
| 5/88  | 870171C001  | PA                           | GPU Industrial Intervenors                                     | Metropolitan Edison Co.                                  | Cogeneration deferral mechanism, modification of energy cost recovery (ECR). |
| 6/88  | 870172C005  | PA                           | GPU Industrial Intervenors                                     | Pennsylvania Electric Co.                                | Cogeneration deferral mechanism, modification of energy cost recovery (ECR). |
| 7/88  | 88-171-EL-AIR<br>88-170-EL-AIR<br>Interim Rate Case | OH                           | Industrial Energy Consumers                                    | Cleveland Electric/ Toledo Edison                        | Financial analysis/need for interim rate relief.                             |
| 7/88  | Appeal of PSC                                       | 19th Judicial Docket U-17282 | Louisiana Public Service Commission Circuit Court of Louisiana | Gulf States Utilities                                    | Load forecasting, imprudence damages.  |
| 11/88 | R-880989  | PA                           | United States Steel  | Carnegie Gas   | Gas cost-of-service, rate design.  |
| 11/88 | 88-171-EL-AIR<br>88-170-EL-AIR                      | OH                           | Industrial Energy Consumers                                    | Cleveland Electric/ Toledo Edison.<br>General Rate Case. | Weather normalization of peak loads, excess capacity, regulatory policy.     |
| 3/89  | 870216/283<br>284/286                               | PA                           | Armco Advanced Materials Corp., Allegheny Ludlum Corp.         | West Penn Power Co.                                      | Calculated avoided capacity, recovery of capacity payments.                  |
| 8/89  | 8555  | TX                           | Occidental Chemical Corp.                                      | Houston Lighting & Power Co.                             | Cost-of-service, rate design.  |
| 8/89  | 3840-U  | GA                           | Georgia Public Service Commission                              | Georgia Power Co.  | Revenue forecasting, weather normalization.                                  |
| 9/89  | 2087  | NM                           | Attorney General of New Mexico                                 | Public Service Co. of New Mexico                         | Prudence - Palo Verde Nuclear Units 1, 2 and 3, load forecasting.            |

**Expert Testimony Appearances  
of  
Stephen J. Baron  
As of October 1997**

| Date  | Case                 | Jurisdic. | Party  | Utility                          | Subject   |
|-------|----------------------|-----------|--|----------------------------------|---|
| 10/89 | 2262                 | NM        | New Mexico Industrial Energy Consumers                 | Public Service Co. of New Mexico | Fuel adjustment clause, off-system sales, cost-of-service, rate design, marginal cost.                    |
| 11/89 | 38728                | IN        | Industrial Consumers for Fair Utility Rates            | Indiana Michigan Power Co.       | Excess capacity, capacity equalization, jurisdictional cost allocation, rate design, interruptible rates. |
| 1/90  | U-17282              | LA        | Louisiana Public Service Commission Staff              | Gulf States Utilities            | Jurisdictional cost allocation, O&M expense analysis.   |
| 5/90  | 890366               | PA        | GPU Industrial Intervenors                             | Metropolitan Edison Co.          | Non-utility generator cost recovery.  |
| 6/90  | R-901609             | PA        | Armco Advanced Materials Corp., Allegheny Ludlum Corp. | West Penn Power Co.              | Allocation of QF demand charges in the fuel cost, cost-of-service, rate design.                           |
| 9/90  | 8278                 | MD        | Maryland Industrial Group                              | Baltimore Gas & Electric Co.     | Cost-of-service, rate design, revenue allocation.   |
| 12/90 | U-9346<br>Rebuttal   | MI        | Association of Businesses Advocating Tariff Equity     | Consumers Power Co.              | Demand-side management, environmental externalities.  |
| 12/90 | U-17282<br>Phase IV  | LA        | Louisiana Public Service Commission Staff              | Gulf States Utilities            | Revenue requirements, jurisdictional allocation.  |
| 12/90 | 90-205               | ME        | Airco Industrial Gases                                 | Central Maine Power Co.          | Investigation into interruptible service and rates.   |
| 1/91  | 90-12-03<br>Interim  | CT        | Connecticut Industrial Energy Consumers                | Connecticut Light & Power Co.    | Interim rate relief, financial analysis, class revenue allocation.  |
| 5/91  | 90-12-03<br>Phase II | CT        | Connecticut Industrial Energy Consumers                | Connecticut Light & Power Co.    | Revenue requirements, cost-of-service, rate design, demand-side management.                               |
| 8/91  | E-7, SUB<br>SUB 487  | NC        | North Carolina Industrial Energy Consumers             | Duke Power Co.                   | Revenue requirements, cost allocation, rate design, demand-side management.                               |
| 8/91  | 8341<br>Phase I      | MD        | Westvaco Corp.   | Potomac Edison Co.               | Cost allocation, rate design, 1990 Clean Air Act Amendments.  |
| 8/91  | 91-372<br>EL-UNC     | OH        | Armco Steel Co., L.P.                                  | Cincinnati Gas & Electric Co.    | Economic analysis of cogeneration, avoid cost rate.   |

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**J. KENNEDY AND ASSOCIATES, INC.**

**Expert Testimony Appearances  
of  
Stephen J. Baron  
As of October 1997**

| Date  | Case                   | Jurisdic. | Party   | Utility                             | Subject  |
|---|------------------------|-----------|---|-------------------------------------|--|
| 9/91  | P-910511<br>P-910512   | PA        | Allegheny Ludlum Corp.,<br>Armco Advanced<br>Materials Co.,<br>The West Penn Power<br>Industrial Users' Group | West Penn Power Co.                 | Economic analysis of proposed<br>CWIP Rider for 1990 Clean Air<br>Act Amendments expenditures.                   |
| 9/91  | 91-231<br>-E-NC        | WV        | West Virginia Energy<br>Users' Group  | Monongahela Power<br>Co.            | Economic analysis of proposed<br>CWIP Rider for 1990 Clean Air<br>Act Amendments expenditures.                   |
| 10/91                                       | 8341 -<br>Phase II     | MD        | Westvaco Corp.  | Potomac Edison Co.                  | Economic analysis of proposed<br>CWIP Rider for 1990 Clean Air<br>Act Amendments expenditures.                   |
| 10/91                                       | U-17282                | LA        | Louisiana Public<br>Service Commission<br>Staff   | Gulf States<br>Utilities            | Results of comprehensive<br>management audit.  |
| Note: No testimony<br>was prefiled on this. |                        |           |   |                                     |  |
| 11/91                                       | U-17949<br>Subdocket A | LA        | Louisiana Public<br>Service Commission<br>Staff   | South Central<br>Bell Telephone Co. | Analysis of South Central<br>Bell's restructuring and<br>and proposed merger with<br>Southern Bell Telephone Co. |
| 12/91                                       | 91-410-<br>EL-AIR      | OH        | Armco Steel Co.,<br>Air Products &<br>Chemicals, Inc.   | Cincinnati Gas<br>& Electric Co.    | Rate design, interruptible<br>rates.   |
| 12/91                                       | P-880286               | PA        | Armco Advanced<br>Materials Corp.,<br>Allegheny Ludlum Corp.  | West Penn Power Co.                 | Evaluation of appropriate<br>avoided capacity costs -<br>GF projects.  |
| 1/92  | C-913424               | PA        | Duquesne Interruptible<br>Complainants  | Duquesne Light Co.                  | Industrial interruptible rate.   |
| 6/92  | 92-02-19               | CT        | Connecticut Industrial<br>Energy Consumers  | Yankee Gas Co.                      | Rate design.   |
| 8/92  | 2437                   | NM        | New Mexico<br>Industrial Intervenors  | Public Service Co.<br>of New Mexico | Cost-of-service.   |
| 8/92  | R-00922314             | PA        | GPU Industrial<br>Intervenors   | Metropolitan Edison<br>Co.          | Cost-of-service, rate<br>design, energy cost rate.   |
| 9/92  | 39314                  | ID        | Industrial Consumers<br>for Fair Utility Rates  | Indiana Michigan<br>Power Co.       | Cost-of-service, rate design,<br>energy cost rate, rate treatment.   |
| 10/92                                       | M-00920312<br>C-007    | PA        | The GPU Industrial<br>Intervenors   | Pennsylvania<br>Electric Co.        | Cost-of-service, rate design,<br>energy cost rate, rate treatment.   |
| 12/92                                       | U-17949                | LA        | Louisiana Public<br>Service Commission<br>Staff   | South Central Bell<br>Co.           | Management audit.  |

**Expert Testimony Appearances  
of  
Stephen J. Baron  
As of October 1997**

| <u>Date</u> | <u>Case</u>                                 | <u>Jurisdct.</u>                     | <u>Party</u>   | <u>Utility</u>                   | <u>Subject</u>   |
|-------------|---|--------------------------------------|--|----------------------------------|--|
| 12/92       | R-00922378                                  | PA                                   | Armco Advanced Materials Co.<br>The WPP Industrial Intervenors | West Penn Power Co.              | Cost-of-service, rate design, energy cost rate, SO <sub>2</sub> allowance rate treatment.                                    |
| 1/93        | 8487  | MD                                   | The Maryland Industrial Group                                  | Baltimore Gas & Electric Co.     | Electric cost-of-service and rate design, gas rate design (flexible rates).  |
| 2/93        | E002/GR-92-1185                             | MN                                   | North Star Steel Co.<br>Praxair, Inc.                          | Northern States Power Co.        | Interruptible rates.   |
| 4/93        | EC92<br>21000<br>ER92-806-000<br>(Rebuttal) | Federal Energy Regulatory Commission | Louisiana Public Service Commission Staff                      | Gulf States Utilities/Entergy    | Merger of GSU into Entergy System; impact on system agreement.   |
| 7/93        | 93-0114-E-C                                 | WV                                   | Airco Gases  | Monongahela Power Co.            | Interruptible rates.   |
| 8/93        | 930759-EG                                   | FL                                   | Florida Industrial Power Users' Group                          | Generic - Electric Utilities     | Cost recovery and allocation of DSM costs.   |
| 9/93        | M-009<br>30406                              | PA                                   | Lehigh Valley Power Committee                                  | Pennsylvania Power & Light Co.   | Ratemaking treatment of off-system sales revenues.   |
| 11/93       | 346   | KY                                   | Kentucky Industrial Utility Customers                          | Generic - Gas Utilities          | Allocation of gas pipeline transition costs - FERC Order 636.  |
| 12/93       | U-17735                                     | LA                                   | Louisiana Public Service Commission Staff                      | Cajun Electric Power Cooperative | Nuclear plant prudence, forecasting, excess capacity.  |
| 4/94        | E-015/<br>GR-94-001                         | MN                                   | Large Power Intervenors  | Minnesota Power Co.              | Cost allocation, rate design, rate phase-in plan.  |
| 5/94        | U-20178                                     | LA                                   | Louisiana Public Service Commission                            | Louisiana Power & Light Co.      | Analysis of least cost integrated resource plan and demand-side management program.  |
| 7/94        | R-00942986                                  | PA                                   | Armco, Inc.;<br>West Penn Power Industrial Intervenors         | West Penn Power Co.              | Cost-of-service, allocation of rate increase, rate design, emission allowance sales, and operations and maintenance expense. |
| 7/94        | 94-0035-E-42T                               | WV                                   | West Virginia Energy Users Group                               | Monongahela Power Co.            | Cost-of-service, allocation of rate increase, and rate design.   |
| 8/94        | EC94<br>13-000                              | Federal Energy Regulatory Commission | Louisiana Public Service Commission                            | Gulf States Utilities/Entergy    | Analysis of extended reserve shutdown units and violation of system agreement by Entergy.                                    |

**Expert Testimony Appearances  
of  
Stephen J. Baron  
As of October 1997**

| <b>Date</b> | <b>Case</b>                           | <b>Jurisdct.</b> | <b>Party</b>                                      | <b>Utility</b>                                   | <b>Subject</b>  |
|-------------|---------------------------------------|------------------|---|--|---|
| 9/94        | R-00943<br>081<br>R-00943<br>081C0001 | PA               | Lehigh Valley<br>Power Committee                  | Pennsylvania Public<br>Utility Commission        | Analysis of interruptible rate<br>terms and conditions, availability.                 |
| 9/94        | U-17735                               | LA               | Louisiana Public<br>Service Commission            | Cajun Electric<br>Power Cooperative              | Evaluation of appropriate avoided<br>cost rate.                                       |
| 9/94        | U-19904                               | LA               | Louisiana Public<br>Service Commission            | Gulf States<br>Utilities                         | Revenue requirements.   |
| 10/94       | 5258-U                                | GA               | Georgia Public<br>Service Commission              | Southern Bell<br>Telephone &<br>Telegraph Co.    | Proposals to address competition<br>in telecommunication markets.                     |
| 11/94       | EC94-7-000<br>ER94-898-000            | FERC             | Louisiana Public<br>Service Commission            | El Paso Electric<br>and Central and<br>Southwest | Merger economics, transmission<br>equalization hold harmless<br>proposals.            |
| 2/95        | 941-430EG                             | CO               | CF&I Steel, L.P.                                  | Public Service<br>Company of<br>Colorado         | Interruptible rates,<br>cost-of-service.  |
| 4/95        | R-00943271                            | PA               | PP&L Industrial<br>Customer Alliance              | Pennsylvania Power<br>& Light Co.                | Cost-of-service, allocation of<br>rate increase, rate design,<br>interruptible rates. |
| 6/95        | C-00913424<br>C-00946104              | PA               | Duquesne Interruptible<br>Complainants            | Duquesne Light Co.                               | Interruptible rates.  |
| 8/95        | ER95-112<br>-000                      | FERC             | Louisiana Public<br>Service Commission            | Entergy Services,<br>Inc.                        | Open Access Transmission<br>Tariffs - Wholesale.                                      |
| 10/95       | U-21485                               | LA               | Louisiana Public<br>Service Commission            | Gulf States<br>Utilities Company                 | Nuclear decommissioning,<br>revenue requirements,<br>capital structure.               |
| 10/95       | ER95-1042<br>-000                     | FERC             | Louisiana Public<br>Service Commission            | System Energy<br>Resources, Inc.                 | Nuclear decommissioning,<br>revenue requirements.                                     |
| 10/95       | U-21485                               | LA               | Louisiana Public<br>Service Commission            | Gulf States<br>Utilities Co.                     | Nuclear decommissioning and<br>cost of debt capital, capital<br>structure.            |
| 11/95       | I-940032                              | PA               | Industrial Energy<br>Consumers of<br>Pennsylvania | State-wide -<br>all utilities                    | Retail competition issues.  |
| 7/96        | U-21496                               | LA               | Louisiana Public<br>Service Commission            | Central Louisiana<br>Electric Co.                | Revenue requirement<br>analysis.  |

**Expert Testimony Appearances  
of  
Stephen J. Baron  
As of October 1997**

| Date  | Case                      | Jurisdiction                                     | Party   | Utility  | Subject  |
|-------|---------------------------|--|---|--|--|
| 7/96  | 8725                      | MD   | Maryland Industrial Group                       | Baltimore Gas & Elec. Co., Potomac Elec. Power Co., Constellation Energy Co. | Ratemaking issues associated with a Merger.  |
| 8/96  | U-17735                   | LA   | Louisiana Public Service Commission             | Cajun Electric Power Cooperative   | Revenue requirements.  |
| 9/96  | U-22092                   | LA   | Louisiana Public Service Commission             | Energy Gulf States, Inc.   | Decommissioning, weather normalization, capital structure.                               |
| 2/97  | R-973877                  | PA   | Philadelphia Area Industrial Energy Users Group | PECO Energy Co.  | Competitive restructuring policy issues, stranded cost, transition charges.              |
| 6/97  | Civil Action No. 94-11474 | US Bankruptcy Court Middle District of Louisiana | Louisiana Public Service Commission             | Cajun Electric Power Cooperative   | Confirmation of reorganization plan; analysis of rate paths produced by competing plans. |
| 6/97  | R-973953                  | PA   | Philadelphia Area Industrial Energy Users Group | PECO Energy Co.  | Retail competition issues, rate unbundling, stranded cost analysis.                      |
| 6/97  | 8738                      | MD   | Maryland Industrial Group                       | Generic  | Retail competition issues  |
| 7/97  | R-973954                  | PA   | PP&L Industrial Customer Alliance               | Pennsylvania Power & Light Co.   | Retail competition issues, rate unbundling, stranded cost analysis.                      |
| 10/97 | 97-204                    | KY   | Alcan Aluminum Corp. Southwire Co.              | Big River Electric Corp.   | Analysis of cost of service issues - Big Rivers Restructuring Plan                       |
| 10/97 | R-974008                  | PA   | Metropolitan Edison Industrial Users            | Metropolitan Edison Co.  | Retail competition issues, rate unbundling, stranded cost analysis.                      |
| 10/97 | R-974009                  | PA   | Pennsylvania Electric Industrial Customer       | Pennsylvania Electric Co.  | Retail competition issues, rate unbundling, stranded cost analysis.                      |

Duquesne Light Company  
DII Recommended Stranded Costs  
(\$000)

|                                       | Total<br><u>Company</u> | Total<br><u>Jurisdictional</u> <sup>1</sup> |
|---------------------------------------|-------------------------|---|
| Net Generating Plant & CWIP           | 979,130                 |   |
| Less: DII Market Value                | <u>(16,742)</u>         |   |
| Stranded Plant                        | 995,872                 | 994,969                                     |
| Less: Equity Return Disallowance      | (232,500)               | (232,289)                                   |
| Other Regulatory Assets (Liabilities) | 575,220                 | 574,698                                     |
| Transition Costs                      | 9,800                   | 9,791                                       |
| Nuclear Decommissioning               | 42,959                  | 42,920                                      |
| <b>Total Stranded Costs</b>           | <b>1,391,351</b>        | <b>1,390,089</b>                            |

<sup>1</sup> Based on a jurisdictional production factor of 99.909%

**Duquesne Light Company**  
**Example of Stranded Generation "Sharing" Analysis**  
**DII Calculation**  
**Monthly Amortization with end-of-period convention**  
**No Equity Return on Stranded Plant**  
**(\$000)**

|                |         |
|----------------|---------|
| Stranded Plant | 995,872 |
|----------------|---------|

| Year | Beginning<br>Unamortized<br>Stranded Plant<br>Balance | Return<br>@ 5.51% | Annual<br>Amortization | Total<br>Annual<br>Rev Req | PV of<br>Annual<br>Rev Req |
|------|---|-------------------|------------------------|----------------------------|----------------------------|
| 1999 | 995,872   | 51,280            | 142,267                | 193,547                    | 185,621                    |
| 2000 | 853,605   | 43,441            | 142,267                | 185,708                    | 164,717                    |
| 2001 | 711,337   | 35,602            | 142,267                | 177,869                    | 145,907                    |
| 2002 | 569,070   | 27,763            | 142,267                | 170,030                    | 128,994                    |
| 2003 | 426,802   | 19,924            | 142,267                | 162,191                    | 113,799                    |
| 2004 | 284,535   | 12,085            | 142,267                | 154,352                    | 100,160                    |
| 2005 | 142,267   | 4,246             | 142,267                | 146,514                    | 87,928                     |

|   |                  |
|---|------------------|
| Total PV of Stranded Costs Rev Req - No Equity Return                 | 927,125          |
| Total PV of Stranded Costs Rev Req - Full Rate of Return <sup>1</sup> | <u>1,159,625</u> |
| Equity Return Revenue Requirement                                     | (232,500)        |

<sup>1</sup> From Exhibit \_\_\_\_ (SJB-3), page 2 of 2

**Duquesne Light Company**  
**Example of Stranded Generation "Sharing" Analysis**  
**DII Calculation**  
**Monthly Amortization with end-of-period convention**  
**Full Equity Return on Stranded Plant**  
**(\$000)**

|                |         |
|----------------|---------|
| Stranded Plant | 995,872 |
|----------------|---------|

| Year | Beginning<br>Unamortized<br>Stranded Plant<br>Balance | Return<br>@ 13.39% | Annual<br>Amortization | Total<br>Annual<br>Rev Req | PV of<br>Annual<br>Rev Req |
|------|---|--------------------|------------------------|----------------------------|----------------------------|
| 1999 | 995,872   | 124,616            | 142,267                | 266,884                    | 256,005                    |
| 2000 | 853,605   | 105,567            | 142,267                | 247,834                    | 219,870                    |
| 2001 | 711,337   | 86,517             | 142,267                | 228,784                    | 187,720                    |
| 2002 | 569,070   | 67,467             | 142,267                | 209,735                    | 159,162                    |
| 2003 | 426,802   | 48,418             | 142,267                | 190,685                    | 133,836                    |
| 2004 | 284,535   | 29,368             | 142,267                | 171,636                    | 111,418                    |
| 2005 | 142,267   | 10,319             | 142,267                | 152,586                    | 91,614                     |

Total PV of Stranded Costs Rev Req - Full Rate of Return      1,159,625

**Duquesne Light Company**  
Calculation of Adjusted Rate of Return

|                                    | Amount    | Weight  | Cost<br>Rate | Weighted<br>Cost | Pre-Tax<br>Cost | Pre-Tax<br>no CE<br>Return |
|------------------------------------|-----------|---------|--------------|------------------|-----------------|----------------------------|
| Long Term Debt                     | 1,240,762 | 50.23%  | 8.51%        | 4.28%            | 4.28%           | 4.28%                      |
| Preferred and<br>Preference Stock  | 239,330   | 9.69%   | 7.45%        | 0.72%            | 1.23%           | 1.23%                      |
| Common Equity                      | 990,236   | 40.08%  | 11.50%       | 4.61%            | 7.88%           |                            |
| Total                              | 2,470,328 | 100.00% |              | 9.61%            | 13.39%          | 5.51%                      |
| Tax Shield                         |           |         |              | -1.77%           |                 |                            |
| After-tax weighted cost of capital |           |         |              | 7.84%            |                 |                            |

Composite Tax Rate      41.494%

**Duquesne Light Company**  
**Summary of Estimated CTC Revenue by Rate Class**  
**(\$1000)**

**GRT Rate:** 4.40%  
**Load Growth:** 0.00%  
**Return:** 7.00%      0.583%

| <u>Rate Class</u>   | <u>1999</u>    | <u>2000</u>    | <u>2001</u>    | <u>2002</u>    | <u>2003</u>    | <u>2004</u>    | <u>2005</u>    |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Rate RA             | 1,442          | 1,402          | 1,349          | 1,290          | 1,214          | 1,131          | 1,046          |
| Rate RS             | 165,105        | 161,695        | 157,218        | 152,136        | 145,528        | 138,316        | 130,965        |
| Rate RH             | 11,451         | 11,115         | 10,671         | 10,160         | 9,492          | 8,759          | 8,013          |
| Rate GS/GM          | 121,962        | 118,635        | 114,265        | 109,428        | 103,119        | 96,295         | 89,159         |
| Rate GMH            | 11,338         | 10,960         | 10,471         | 9,908          | 9,184          | 8,388          | 7,578          |
| Rate GL             | 88,838         | 85,782         | 81,771         | 77,194         | 71,239         | 64,721         | 58,114         |
| Rate GLH            | 11,785         | 11,268         | 10,593         | 9,830          | 8,839          | 7,760          | 6,650          |
| Rate L              | 31,001         | 29,505         | 27,537         | 25,268         | 22,311         | 19,063         | 15,797         |
| Rate HVPS           | 13,942         | 12,747         | 11,184         | 9,385          | 7,048          | 4,481          | 1,895          |
| Rate AL             | 1              | 1              | 1              | 1              | 1              | 1              | 1              |
| Rate SE             | 830            | 811            | 785            | 751            | 708            | 658            | 614            |
| Rate SM             | 3,877          | 3,856          | 3,828          | 3,791          | 3,744          | 3,689          | 3,641          |
| Rate SH             | 80             | 79             | 78             | 77             | 76             | 75             | 73             |
| Traffic Signals     | 847            | 836            | 821            | 803            | 780            | 754            | 729            |
| <b>Total Retail</b> | <b>462,498</b> | <b>448,691</b> | <b>430,572</b> | <b>410,023</b> | <b>383,282</b> | <b>354,092</b> | <b>324,275</b> |
| Less: GRT           | (20,350)       | (19,742)       | (18,945)       | (18,041)       | (16,864)       | (15,580)       | (14,268)       |
| <b>Net Retail</b>   | <b>442,148</b> | <b>428,949</b> | <b>411,627</b> | <b>391,982</b> | <b>366,418</b> | <b>338,512</b> | <b>310,007</b> |
| Load Growth         | -              | -              | -              | -              | -              | -              | -              |
| <b>Net Retail</b>   | <b>442,148</b> | <b>428,949</b> | <b>411,627</b> | <b>391,982</b> | <b>366,418</b> | <b>338,512</b> | <b>310,007</b> |
| 1/1/99 NPV          | 425,830        | 385,267        | 344,784        | 306,195        | 266,929        | 229,975        | 196,411        |
| Cumulative          | 425,830        | 811,097        | 1,155,881      | 1,462,076      | 1,729,005      | 1,958,980      | 2,155,391      |
| Beginning Balance   | 1,390,089      | 1,033,965      | 665,729        | 288,761        | -95,170        | -480,455       | -864,774       |
| Return              | 86,025         | 60,712         | 34,659         | 8,051          | -18,867        | -45,807        | -72,657        |
| Collection          | -442,148       | -428,949       | -411,627       | -391,982       | -366,418       | -338,512       | -310,007       |
| Ending Balance      | 1,033,965      | 665,729        | 288,761        | -95,170        | -480,455       | -864,774       | -1,247,437     |

**Duquesne Light Company**  
**DII Load-weighted Market Prices**

|                                   |            | <u>1999</u> | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2004</u> | <u>2005</u> |
|-----------------------------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Market Demand Price               | \$/kW/year | 47.46       | 48.65       | 49.87       | 51.11       | 52.39       | 53.70       | 55.04       |
| Market Energy Prices <sup>1</sup> |            |             |             |             |             |             |             |             |
| Fall On-Peak                      |            | 16.05       | 16.70       | 17.70       | 18.90       | 20.72       | 22.84       | 25.47       |
| Fall Off-peak                     |            | 14.54       | 14.88       | 15.24       | 15.91       | 16.68       | 17.63       | 18.05       |
| Winter On-Peak                    |            | 20.50       | 22.28       | 25.02       | 27.86       | 31.67       | 35.85       | 41.01       |
| Winter Off-Peak                   |            | 16.65       | 17.44       | 18.49       | 19.75       | 21.46       | 23.32       | 25.28       |
| Spring On-Peak                    |            | 15.42       | 15.86       | 16.37       | 17.16       | 18.18       | 19.45       | 20.60       |
| Spring Off-Peak                   |            | 14.43       | 14.77       | 15.10       | 15.69       | 16.39       | 17.22       | 17.48       |
| Summer On-Peak                    |            | 23.45       | 25.44       | 28.49       | 31.08       | 35.06       | 38.78       | 43.46       |
| Summer Off-Peak                   |            | 14.79       | 15.18       | 15.68       | 16.49       | 17.42       | 18.63       | 19.56       |
| Average                           | \$/mWh     | 16.68       | 17.45       | 18.54       | 19.79       | 21.49       | 23.35       | 25.27       |

<sup>1</sup> Load weighted averages based on WPPII hourly ECAR market clearing prices and Duquesne 1995 EEI Load Deck

Duquesne Light Company  
 Unbundling Analysis  
 Rate RS

|                     | Revenue Requirement | Less: Fixed  | Rev Req for Unbundling |
|---------------------|---------------------|--------------|------------------------|
| Revenue Requirement | 7,982,100           |              | 7,982,100              |
| Transmission        |                     |              |                        |
| Distribution        | 117,065,123         | (37,993,053) | 79,072,070             |

|                              | Units         | Current Rate | Unbundled Transmission | Unbundled Distribution | Embedded Generation Rate Cap | Embedded Generation Rate Cap |             |             |
|------------------------------|---------------|--------------|------------------------|------------------------|------------------------------|------------------------------|-------------|-------------|
| Customer Charge              | 5,955,024     | 6.38         |                        | 6.38                   |                              | -                            |             |             |
| All kWh                      | 2,977,128,529 | 0.114769     | 0.002680               | 0.026560               | 0.085529                     | 0.085529                     |             |             |
|                              | Units         | 1999         | 2000                   | 2001                   | 2002                         | 2003                         | 2004        | 2005        |
| Market Generation Rates      |               |              |                        |                        |                              |                              |             |             |
| Market Demand Rate           |               | 0.010860     | 0.011121               | 0.011388               | 0.011662                     | 0.011943                     | 0.012231    | 0.012526    |
| Market Energy Rate           |               | 0.019203     | 0.020088               | 0.021324               | 0.022757                     | 0.024696                     | 0.026830    | 0.029004    |
| Total Market Generation Rate |               | 0.030063     | 0.031209               | 0.032712               | 0.034419                     | 0.036639                     | 0.039061    | 0.041530    |
| CTC Rates                    |               |              |                        |                        |                              |                              |             |             |
| All kWh                      | 2,977,128,529 | 0.05547      | 0.05432                | 0.05282                | 0.05111                      | 0.04889                      | 0.04647     | 0.04400     |
| Estimated CTC Revenues       |               | 165,129,411  | 161,717,622            | 157,242,998            | 152,161,039                  | 145,551,814                  | 138,341,208 | 130,990,678 |
| Less: GRT                    |               | -7,265,694   | -7,115,575             | -6,918,692             | -6,695,086                   | -6,404,280                   | -6,087,013  | -5,763,590  |
| CTC Revenues w/o GRT         |               | 157,863,717  | 154,602,046            | 150,324,306            | 145,465,953                  | 139,147,534                  | 132,254,195 | 125,227,088 |

Duquesne Light Company  
 Unbundling Analysis  
 Rate RS

|                                 | Units/Weights | 1999       | 2000       | 2001       | 2002       | 2003       | 2004       | 2005       |
|---------------------------------|---------------|------------|------------|------------|------------|------------|------------|------------|
| Market Demand Price             | 543,965       | 47.46      | 48.65      | 49.87      | 51.11      | 52.39      | 53.70      | 55.04      |
| Market Energy Prices            |               |            |            |            |            |            |            |            |
| Fall On-Peak                    | 0.08123       | 16.05      | 16.70      | 17.70      | 18.90      | 20.72      | 22.84      | 25.47      |
| Fall Off-peak                   | 0.14756       | 14.54      | 14.88      | 15.24      | 15.91      | 16.68      | 17.63      | 18.05      |
| Winter On-Peak                  | 0.09503       | 20.50      | 22.28      | 25.02      | 27.86      | 31.67      | 35.85      | 41.01      |
| Winter Off-Peak                 | 0.17046       | 16.65      | 17.44      | 18.49      | 19.75      | 21.46      | 23.32      | 25.28      |
| Spring On-Peak                  | 0.08011       | 15.42      | 15.86      | 16.37      | 17.16      | 18.18      | 19.45      | 20.60      |
| Spring Off-Peak                 | 0.14836       | 14.43      | 14.77      | 15.10      | 15.69      | 16.39      | 17.22      | 17.48      |
| Summer On-Peak                  | 0.10396       | 23.45      | 25.44      | 28.49      | 31.08      | 35.06      | 38.78      | 43.46      |
| Summer Off-Peak                 | 0.17329       | 14.79      | 15.18      | 15.68      | 16.49      | 17.42      | 18.63      | 19.56      |
| Average                         | 2,977,268     | 16.61      | 17.38      | 18.45      | 19.69      | 21.36      | 23.21      | 25.09      |
| Gross Receipts Tax Rate         | 4.40%         |            |            |            |            |            |            |            |
| Reserve Margin                  | 15.00%        |            |            |            |            |            |            |            |
| Energy Loss Factor              | 1.105         |            |            |            |            |            |            |            |
| Market Generation Cost          |               |            |            |            |            |            |            |            |
| Demand Cost                     |               | 31,058,100 | 31,834,553 | 32,630,417 | 33,446,177 | 34,282,332 | 35,139,390 | 36,017,875 |
| Reactive Demand Cost            |               | 1,273,737  | 1,273,737  | 1,273,737  | 1,273,737  | 1,273,737  | 1,273,737  | 1,273,737  |
| Total Demand                    |               | 32,331,838 | 33,108,290 | 33,904,154 | 34,719,914 | 35,556,069 | 36,413,127 | 37,291,612 |
| Market Demand Rate <sup>1</sup> |               | 0.010860   | 0.011121   | 0.011388   | 0.011662   | 0.011943   | 0.012231   | 0.012526   |
| Market Energy Rate <sup>2</sup> |               | 0.019203   | 0.020088   | 0.021324   | 0.022757   | 0.024696   | 0.026830   | 0.029004   |

<sup>1</sup> Market Demand Cost unitized by billing determinants

<sup>2</sup> Weighted Average Market Energy price adjusted for losses and GRT

Duquesne Light Company  
 Unbundling Analysis  
 Rate L

| Revenue Requirement | Revenue Requirement | Less: Fixed | Rev Req for Unbundling |
|---------------------|---------------------|-------------|------------------------|
| Transmission        | 3,660,418           |             | 3,660,418              |
| Distribution        | 10,790,798          |             | 10,790,798             |
| Billing Credits     | (146,834)           |             | (146,834)              |

|                          | Units         | Current Rate | Unbundled Transmission | Unbundled Distribution | Embedded Generation Rate Cap |
|--------------------------|---------------|--------------|------------------------|------------------------|------------------------------|
| First 5,000 kW           | 312           | 71,289.00    | 6,728.55               | 19,835.54              | 44,724.91                    |
| Next 10,000 kW           | 1,138,342     | 11.45        | 1.35                   | 3.97                   | 6.13                         |
| Next 25,000 kW           | 21,725        | 11.13        | 1.35                   | 3.97                   | 5.81                         |
| Excess kW                | -             | 10.84        | 1.35                   | 3.97                   | 5.52                         |
| First 750,000+400 kWh/kW | 1,215,882,769 | 0.036169     |                        |                        | 0.036169                     |
| Next 150 kWh per kW      | 234,969,371   | 0.023769     |                        |                        | 0.023769                     |
| Excess kWh               | 58,621,860    | 0.021569     |                        |                        | 0.021569                     |

|                         | 1999     | 2000     | 2001     | 2002     | 2003     | 2004     | 2005     |
|-------------------------|----------|----------|----------|----------|----------|----------|----------|
| Market Generation Rates |          |          |          |          |          |          |          |
| Market Demand Rate      | 4.54     | 4.65     | 4.77     | 4.88     | 5.00     | 5.13     | 5.25     |
| Market Energy Rate      | 0.017820 | 0.018610 | 0.019710 | 0.021010 | 0.022750 | 0.024680 | 0.026620 |

| CTC Rates                | 1999      | 2000      | 2001      | 2002      | 2003       | 2004       | 2005       |
|--------------------------|-----------|-----------|-----------|-----------|------------|------------|------------|
| First 5,000 kW           | 22,014.91 | 21,459.91 | 20,889.91 | 20,309.91 | 19,714.91  | 19,099.91  | 18,474.91  |
| Next 10,000 kW           | 1.59      | 1.48      | 1.36      | 1.25      | 1.13       | 1.01       | 0.88       |
| Next 25,000 kW           | 1.27      | 1.16      | 1.04      | 0.93      | 0.81       | 0.69       | 0.56       |
| Excess kW                | 0.98      | 0.87      | 0.75      | 0.64      | 0.52       | 0.40       | 0.27       |
| First 750,000+400 kWh/kW | 0.018349  | 0.017559  | 0.016459  | 0.015159  | 0.013419   | 0.011489   | 0.009549   |
| Next 150 kWh per kW      | 0.005949  | 0.005159  | 0.004059  | 0.002759  | 0.001019   | (0.000911) | (0.002851) |
| Excess kWh               | 0.003749  | 0.002959  | 0.001859  | 0.000559  | (0.001181) | (0.003111) | (0.005051) |
| Billing Credits          | (146,834) | (146,834) | (146,834) | (146,834) | (146,834)  | (146,834)  | (146,834)  |

|                         | 1999        | 2000        | 2001        | 2002        | 2003        | 2004        | 2005        |
|-------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Calculated CTC Revenues | 32,484,891  | 30,990,479  | 29,019,970  | 26,742,126  | 23,791,953  | 20,544,100  | 17,275,712  |
| Revenue Adjustment      | (1,488,885) | (1,488,885) | (1,488,885) | (1,488,885) | (1,488,885) | (1,488,885) | (1,488,885) |
| Estimated CTC Revenues  | 30,996,006  | 29,501,594  | 27,531,085  | 25,253,241  | 22,303,068  | 19,055,215  | 15,786,827  |
| Less: GRT               | (1,363,824) | (1,298,070) | (1,211,368) | (1,111,143) | (981,335)   | (838,429)   | (694,620)   |
| CTC Revenues w/o GRT    | 29,632,181  | 28,203,524  | 26,319,717  | 24,142,098  | 21,321,733  | 18,216,786  | 15,092,207  |

Duquesne Light Company  
 Unbundling Analysis  
 Rate L

|                                  | Units     | 1999       | 2000       | 2001       | 2002       | 2003       | 2004       | 2005       |
|----------------------------------|-----------|------------|------------|------------|------------|------------|------------|------------|
| Market Demand Price              | 211       | 47.46      | 48.65      | 49.87      | 51.11      | 52.39      | 53.70      | 55.04      |
| Market Energy Prices             |           |            |            |            |            |            |            |            |
| Fall On-Peak                     | 0.08937   | 16.05      | 16.70      | 17.70      | 18.90      | 20.72      | 22.84      | 25.47      |
| Fall Off-peak                    | 0.16126   | 14.54      | 14.88      | 15.24      | 15.91      | 16.68      | 17.63      | 18.05      |
| Winter On-Peak                   | 0.08515   | 20.50      | 22.28      | 25.02      | 27.86      | 31.67      | 35.85      | 41.01      |
| Winter Off-Peak                  | 0.15313   | 16.65      | 17.44      | 18.49      | 19.75      | 21.46      | 23.32      | 25.28      |
| Spring On-Peak                   | 0.08800   | 15.42      | 15.86      | 16.37      | 17.16      | 18.18      | 19.45      | 20.60      |
| Spring Off-Peak                  | 0.15670   | 14.43      | 14.77      | 15.10      | 15.69      | 16.39      | 17.22      | 17.48      |
| Summer On-Peak                   | 0.09436   | 23.45      | 25.44      | 28.49      | 31.08      | 35.06      | 38.78      | 43.46      |
| Summer Off-Peak                  | 0.17203   | 14.79      | 15.18      | 15.68      | 16.49      | 17.42      | 18.63      | 19.56      |
| Average                          |           | 16.45      | 17.18      | 18.20      | 19.39      | 21.00      | 22.78      | 24.57      |
| Gross Receipts Tax Rate          | 4.40%     |            |            |            |            |            |            |            |
| Reserve Margin                   | 15.00%    |            |            |            |            |            |            |            |
| Energy Loss Factor               | 1.0357    |            |            |            |            |            |            |            |
| Market Generation Cost           |           |            |            |            |            |            |            |            |
| Demand Cost                      |           | 12,055,546 | 12,356,934 | 12,665,858 | 12,982,504 | 13,307,067 | 13,639,743 | 13,980,737 |
| Reactive Demand Cost             |           | 299,781    | 299,781    | 299,781    | 299,781    | 299,781    | 299,781    | 299,781    |
| Total Demand                     |           | 12,355,327 | 12,656,716 | 12,965,639 | 13,282,286 | 13,606,848 | 13,939,525 | 14,280,518 |
| Market Demand Rate <sup>1</sup>  | 2,720,067 | 4.542      | 4.653      | 4.767      | 4.883      | 5.002      | 5.125      | 5.250      |
| Market Energy Rates <sup>2</sup> |           |            |            |            |            |            |            |            |
| Average                          |           | 0.01782    | 0.01861    | 0.01971    | 0.02101    | 0.02275    | 0.02468    | 0.02662    |
|                                  |           | 38,954,372 |            |            |            |            |            |            |

<sup>1</sup> Market Demand Cost unitized by billing determinants

<sup>2</sup> Weighted Average Market Energy price adjusted for losses and GRT

Duquesne Light Company  
 Unbundling Analysis  
 Rate HVPS

| Revenue Requirement | Revenue Requirement | Less: Fixed | Rev Req for Unbundling |
|---------------------|---------------------|-------------|------------------------|
| Transmission        | 2,427,677           |             | 2,427,677              |
| Distribution        | 3,408,061           |             | 3,408,061              |
| Billing Credits     | (1,769,520)         |             | (1,769,520)            |

|                 | Units       | Current Rate | Unbundled Transmission | Unbundled Distribution | Embedded Generation Rate Cap |
|-----------------|-------------|--------------|------------------------|------------------------|------------------------------|
| First 30,000 kW | 36          | 330,536.00   | 41,143.21              | 57,758.32              | 231,634.47                   |
| Excess kW       | 690,166     | 11.92        | 1.37                   | 1.93                   | 8.62                         |
| On-peak kWh     | 315,164,863 | 0.041469     |                        |                        | 0.041469                     |
| Off-peak kWh    | 703,225,572 | 0.020269     |                        |                        | 0.020269                     |

|  | 1999        | 2000        | 2001        | 2002        | 2003        | 2004        | 2005        |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Market Generation Rates</b>             |             |             |             |             |             |             |             |
| Market Demand Rate                         | 5.20        | 5.33        | 5.46        | 5.59        | 5.73        | 5.87        | 6.01        |
| <b>Market Energy Rates</b>                 |             |             |             |             |             |             |             |
| On-peak                                    | 0.019880    | 0.021160    | 0.023080    | 0.025040    | 0.027840    | 0.030820    | 0.034420    |
| Off-peak                                   | 0.015950    | 0.016440    | 0.017040    | 0.017920    | 0.019010    | 0.020290    | 0.021240    |
| <b>CTC Rates</b>                           |             |             |             |             |             |             |             |
| First 30,000 kW                            | 75,634.47   | 71,824.47   | 67,894.47   | 63,904.47   | 59,794.47   | 55,564.47   | 51,274.47   |
| Excess kW                                  | 3.42        | 3.29        | 3.16        | 3.03        | 2.89        | 2.75        | 2.61        |
| On-peak kWh                                | 0.021589    | 0.020309    | 0.018389    | 0.016429    | 0.013629    | 0.010649    | 0.007049    |
| Off-peak kWh                               | 0.004319    | 0.003829    | 0.003229    | 0.002349    | 0.001259    | (0.000021)  | (0.000971)  |
| Billing Credits                            | (1,769,520) | (1,769,520) | (1,769,520) | (1,769,520) | (1,769,520) | (1,769,520) | (1,769,520) |
| <b>Estimated CTC Revenues</b> <sup>1</sup> |             |             |             |             |             |             |             |
| Estimated CTC Revenues                     | 13,155,015  | 12,182,213  | 10,923,269  | 9,451,275   | 7,559,785   | 5,470,872   | 3,415,080   |
| Less: GRT                                  | (578,821)   | (536,017)   | (480,624)   | (415,856)   | (332,631)   | (240,718)   | (150,264)   |
| CTC Revenues w/o GRT                       | 12,576,195  | 11,646,195  | 10,442,645  | 9,035,419   | 7,227,155   | 5,230,153   | 3,264,816   |

<sup>1</sup> Does not include any CTC revenue from unbundling of Alternative Generation or Special Contracts

Duquesne Light Company  
 Unbundling Analysis  
 Rate HVPS

|   | Units     | 1999      | 2000      | 2001      | 2002      | 2003       | 2004       | 2005       |
|---|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| Market Demand Price <sup>1</sup>        | 158       | 47.46     | 48.65     | 49.87     | 51.11     | 52.39      | 53.70      | 55.04      |
| <b>Market Energy Prices</b>             |           |           |           |           |           |            |            |            |
| Fall On-Peak                            | 0.09323   | 16.05     | 16.70     | 17.70     | 18.90     | 20.72      | 22.84      | 25.47      |
| Fall Off-peak                           | 0.16350   | 14.54     | 14.88     | 15.24     | 15.91     | 16.68      | 17.63      | 18.05      |
| Winter On-Peak                          | 0.09029   | 20.50     | 22.28     | 25.02     | 27.86     | 31.67      | 35.85      | 41.01      |
| Winter Off-Peak                         | 0.16336   | 16.65     | 17.44     | 18.49     | 19.75     | 21.46      | 23.32      | 25.28      |
| Spring On-Peak                          | 0.08728   | 15.42     | 15.86     | 16.37     | 17.16     | 18.18      | 19.45      | 20.60      |
| Spring Off-Peak                         | 0.15749   | 14.43     | 14.77     | 15.10     | 15.69     | 16.39      | 17.22      | 17.48      |
| Summer On-Peak                          | 0.08820   | 23.45     | 25.44     | 28.49     | 31.08     | 35.06      | 38.78      | 43.46      |
| Summer Off-Peak                         | 0.15665   | 14.79     | 15.18     | 15.68     | 16.49     | 17.42      | 18.63      | 19.56      |
| On-peak Average <sup>2</sup>            | 0.35900   | 18.84     | 20.05     | 21.87     | 23.72     | 26.38      | 29.20      | 32.62      |
| Off-peak Average <sup>2</sup>           | 0.64100   | 15.11     | 15.58     | 16.14     | 16.98     | 18.01      | 19.22      | 20.12      |
| Average                                 |           | 16.45     | 17.18     | 18.20     | 19.40     | 21.01      | 22.81      | 24.61      |
| Gross Receipts Tax Rate                 | 4.40%     |           |           |           |           |            |            |            |
| Reserve Margin                          | 15.00%    |           |           |           |           |            |            |            |
| Energy Loss Factor                      | 1.0090    |           |           |           |           |            |            |            |
| <b>Market Generation Cost</b>           |           |           |           |           |           |            |            |            |
| Demand Cost                             |           | 9,007,071 | 9,232,248 | 9,463,054 | 9,699,631 | 9,942,121  | 10,190,674 | 10,445,441 |
| Reactive Demand Cost                    |           | 197,641   | 197,641   | 197,641   | 197,641   | 197,641    | 197,641    | 197,641    |
| Total Demand                            |           | 9,204,712 | 9,429,889 | 9,660,695 | 9,897,271 | 10,139,762 | 10,388,315 | 10,643,082 |
| Market Demand Rate <sup>3</sup>         | 1,770,166 | 5.200     | 5.327     | 5.458     | 5.591     | 5.728      | 5.869      | 6.012      |
| <b>Market Energy Rates <sup>4</sup></b> |           |           |           |           |           |            |            |            |
| On-peak Average                         |           | 0.01988   | 0.02116   | 0.02308   | 0.02504   | 0.02784    | 0.03082    | 0.03442    |
| Off-peak Average                        |           | 0.01595   | 0.01644   | 0.01704   | 0.01792   | 0.01901    | 0.02029    | 0.02124    |

<sup>1</sup> HVPS 2 CP reduced to remove alternative generation & special

<sup>2</sup> Based on on-peak period of 10 AM to 9 PM Monday through Friday

<sup>3</sup> Market Demand Cost unitized by billing determinants

<sup>4</sup> Weighted Average Market Energy price adjusted for losses and GRT

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY  
COMMISSION, ET. AL.

v.

DUQUESNE LIGHT COMPANY  
FOR APPROVAL OF ITS  
RESTRUCTURING PLAN UNDER  
SECTION 2806 OF THE  
PUBLIC UTILITY CODE

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)  
) DOCKET NO. R-00974104  
)  
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REBUTTAL TESTIMONY  
OF  
STEPHEN J. BARON

**DOCKETED**

JAN 15 1998

ON BEHALF OF THE

DUQUESNE INDUSTRIAL INTERVENORS

BOC Gases  
General Motors Corp.  
J&L Specialty Steel, Inc.  
LTV Steel Company, Inc.

Nabisco Inc.  
Nova Chemicals, Inc.  
USX Corporation - US Steel Group

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98 JAN - 9 AM 10:44

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J. KENNEDY AND ASSOCIATES, INC.  
ATLANTA, GEORGIA

DECEMBER 1997

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY )  
COMMISSION, ET. AL. )

V. )

DUQUESNE LIGHT COMPANY )  
FOR APPROVAL OF ITS )  
RESTRUCTURING PLAN UNDER )  
SECTION 2806 OF THE )  
PUBLIC UTILITY CODE )

) DOCKET NO. R-00974104

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BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY  
COMMISSION, ET. AL.

V.

DUQUESNE LIGHT COMPANY  
FOR APPROVAL OF ITS  
RESTRUCTURING PLAN UNDER  
SECTION 2806 OF THE  
PUBLIC UTILITY CODE

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REBUTTAL TESTIMONY OF STEPHEN J. BARON

1

2

I. INTRODUCTION AND PURPOSE OF REBUTTAL TESTIMONY

3

4

Q. Please state your name and business address.

5

6

A. My name is Stephen J. Baron. My business address is J. Kennedy and Associates,  
7 Inc. ("Kennedy and Associates"), 35 Glenlake Parkway, Suite 475, Atlanta, Georgia  
8 30328.

9

10

Q. Have you previously submitted direct testimony in this proceeding?

11

12

A. Yes.

13

14

Q. What is the purpose of your rebuttal testimony?

1 A. I am responding to the direct testimony of Office of Consumer Advocate ("OCA")  
2 witness Nancy Brockway regarding the allocation of Universal Service Fund ("USF")  
3 to rate classes and OCA witness Lee Smith regarding rate unbundling issues.

4  
5 I am also responding to the apparent support of some intervening parties (including  
6 the Office of Trial Staff ("OTS") witness Paul Metro) for the DLC proposal to  
7 utilize each year the Duquesne RFP-established market prices and resulting CTCs,  
8 rather than utilizing projected values of market prices. I also respond to the related  
9 market price valuation proposal put forth by New Energy Ventures ("NEV") witness  
10 David Magnus Boonin.

1           **II. UNIVERSAL SERVICE COST RECOVERY MECHANISM ISSUES**

2  
3   **Q.    Before specifically addressing the proposal made by OCA witness Brockway**  
4           **(identified above) for a modification of DLC's proposed recovery mechanism for**  
5           **USF costs, would you please describe DLC's approach as outlined in its**  
6           **restructuring filing?**

7  
8   **A.    Based on the response to OCA Interrogatory OCA-5-003 filed November 3, 1997,**  
9           DLC states that in 1996, "approximately \$12,275,000 was allocated for these  
10           programs and is the amount which will be recovered in the non-bypassable universal  
11           service charge" (Plan, p-12). This is the expense level incorporated into the proposed  
12           distribution rates (and distribution, revenue requirements) included in the Company's  
13           unbundling analysis.

14  
15           Although it is not entirely clear from the interrogatory response, my interpretation of  
16           DLC's approach is that the Company has included the 1996 test year level of USF  
17           costs in distribution revenue requirements and allocated these costs using traditional  
18           Cost of Service principals (i.e., not on a kWh basis, for example). DLC's Cost of  
19           Service Study shows that 1996 uncollectible expenses (that presumably reflect a large  
20           portion of USF costs) have been allocated using an "average number of customers"

1 allocator. This results in 90% of uncollectible expenses being assigned to the three  
2 residential rate classes.

3  
4 Although DLC has provided a table showing the allocated amounts of USF costs by  
5 rate schedule, the Company indicates that its allocation reflects the amount of USF  
6 costs within each class' distribution revenue requirement, assuming that each class'  
7 share is proportionate to the calculated class distribution revenue requirement. It does  
8 not appear that DLC is proposing a specific charge by rate schedule nor does it  
9 appear that the Company is proposing a specific allocation factor for these costs  
10 (other than the allocation produced by the Cost of Service Study).

11  
12 **Q. Do you agree with DLC's proposed assignment of USF costs and its recovery**  
13 **mechanism?**

14  
15 A. Yes. Assuming that my understanding of its proposal is correct. Since I adopted  
16 DLC's basic distribution cost analysis, I implicitly adopted the Company's USF cost  
17 assignments.

18  
19 DLC's rationale for assigning USF costs appears to be reasonable and follows sound  
20 Cost of Service ratemaking principles. These costs are primarily associated with  
21 serving residential customers. The Competition Act specifically defines Universal

1 Service as benefiting low-income customers. Therefore, it would be inappropriate  
2 to assign these costs to other customer classes. In addition, DLC has traditionally  
3 assigned the majority of these types of costs (e.g., uncollectible expenses) to  
4 residential customers. Thus, DLC's current bundled rates reflect a similar cost  
5 allocation approach for "universal service fund type costs" (predominately,  
6 uncollectible expenses) as is being proposed by the Company in this case for USF  
7 costs. To change this cost allocation method in this unbundling proceeding would  
8 violate cost shifting restrictions in the Act.<sup>1</sup>

9  
10 **Q. Would you please summarize the basic position of OCA witness Brockway**  
11 **regarding the allocation of USF costs to customer classes?**

12  
13 A. OCA witness Nancy Brockway is proposing two alternative methodologies to assign  
14 USF costs to rate classes. As I understand the OCA proposal, the preferred  
15 methodology is to use a kWh allocation method that would assign a substantial  
16 amount of USF costs to non-residential classes, in contrast to the Company's proposal  
17 that specifically allocates these costs to residential customers.

---

<sup>1</sup> To the extent that parties other than the OCA also propose allocations of universal service costs to industrial customers, my analysis generally applies to their proposals as well.

1 The alternative proposal discussed by OCA witness Brockway is to use non-  
2 production revenue requirements as a means of assigning USF costs to customer  
3 classes. Under either methodology, a substantial amount of USF costs associated  
4 with providing assistance to low income customers would be assigned to non-  
5 residential customer classes, including commercial and industrial customer classes.

6  
7  
8 **Q. Why has Ms. Brockway proposed two alternative approaches to the allocation**  
9 **of USF costs?**

10  
11 A. As I will discuss subsequently in my testimony, Ms. Brockway has recognized that  
12 the Commission, in its Universal Service order in Docket No. M-009600890F0010,  
13 has specifically rejected the use of a kWh energy allocation for assigning USF costs  
14 to rate classes.

15  
16 **Q. Do you agree with the OCA's proposal to assign USF costs on either a kWh**  
17 **basis or a non-production revenue requirement methodology?**

18  
19 A. No. I support DLC's approach that assigns these costs to residential customers only.  
20 As I will discuss, either a kWh methodology or a non-production revenue

1 requirement allocation method assigns an inappropriate level of USF costs to non-  
2 residential customer classes.

3  
4 **Q. Based on your experience in Pennsylvania rate proceedings, has the Commission**  
5 **previously utilized an energy allocation factor to assign the types of costs**  
6 **included in the USF costs?**

7  
8 A. No. Based on my experience in 25 rate proceedings in Pennsylvania since 1984, to  
9 the best of my knowledge, the PUC never has allocated USF costs type costs on the  
10 basis of class kWh energy. It would be egregious to assign these costs to other  
11 customer classes on a per kWh basis.

12  
13 **Q. Why would it be inappropriate to use a kWh energy allocation factor to assign**  
14 **costs associated with providing low income assistance and uncollectible expenses?**

15  
16 A. From a Cost of Service basis, there can be no cost-causation relationship between the  
17 energy use of a particular customer and/or customer class and the incurrence of these  
18 costs by DLC. If, for example, a large industrial customer on the DLC system were  
19 to add an additional shift to its manufacturing operations and increase its kWh usage,  
20 there is no corresponding increase in the amount of low income assistance or  
21 uncollectible expense required for DLC's customers. In fact, just the opposite could

1 be true since such manufacturing customers may actually increase employment in the  
2 DLC service area and reduce the need for assistance. Irrespective of this, there can  
3 be no cost-causation link between energy usage by a customer or a customer class  
4 and the level of USF costs. As such, it is totally violative of Cost of Service  
5 principles to assign these costs to rate classes on an energy basis. The assignment  
6 of USF costs on a per kWh basis is therefore inconsistent with Cost of Service  
7 principles and, in my opinion inconsistent with the principles established in the  
8 Competition Act that rely on Cost of Service as a guide to rate unbundling. The rate  
9 cap on individual, unbundled components would be violated, as would the prohibition  
10 against inter- and intra-class cost-shifting, if a per kWh surcharge were imposed.

11  
12 **Q. Do you believe that your position is consistent with the position of the**  
13 **Pennsylvania Public Utility Commission, with respect to allocating USF costs on**  
14 **the basis of kWh energy?**

15  
16 **A.** Yes. In its order of July 10, 1997 in Docket No. M-009600890F0010, "Final Order  
17 Re: Guidelines for Universal Service and Energy Conservation Programs Made  
18 Pursuant to 66 Pa. C.S. §2803, 2802(17), 2804(8) and §2804(9)," the Commission  
19 stated on page 20 as follows:

1           **"G. Cost Recovery of Universal Service and Energy**  
2           **Conservation Programs.**

3  
4           Several commentors support a kwh assessment on  
5           all customer classes. We cannot accept this  
6           recommendation because it places a disproportionate  
7           responsibility for funding universal service and energy  
8           conservation programs on high kwh (high volume) users in  
9           violation of Section 1301. Further, the Act at §2804(7)  
10          prohibits interclass and intraclass cost shifting. Assessing  
11          a funding mechanism on kwh use is inconsistent with rate  
12          treatments for these programs in recent base rate cases."

13  
14          The Commission specifically rejects an allocation of USF costs on a kWh basis.

15  
16      **Q. As you indicated, Ms. Brockway has recognized that the Commission has**  
17      **previously determined that an energy allocation methodology for assigning USF**  
18      **costs to rate classes is inappropriate and has proposed an allocation method**  
19      **using non-production revenue requirements to assign these costs. Do you believe**  
20      **that this proposal is reasonable?**

21  
22      A. No. Although the use of a "non-production revenue allocator" reduces the relative  
23      share of USF costs to non-residential customers, it still inappropriately assigns these  
24      costs to customer classes that are not responsible for these USF costs.

1 The use of a non-production revenue requirement allocator does not overcome the  
2 problems that I discussed with regard to a pure kWh energy allocator, the preferred  
3 method of OCA witness Brockway for assigning USF costs.

4  
5 **Q. Does the Competition Act itself require that all customers pay for the USF costs**  
6 **charge through a non-bypassable ratemaking mechanism in which all customer**  
7 **classes pay the same unit cost for USF costs?**

8  
9 A. No. §2802(17) of the Competition Act states as follows:

10  
11 **"The public purpose is to be promoted by continuing universal**  
12 **service and energy conservation polices, protections and services;**  
13 **and full recovery of such costs is to be permitted through a non-**  
14 **bypassable rate mechanism." (§2802(17), (emphasis added))**

15  
16 The language in the Act clearly indicates that recovery of USF costs is permitted  
17 through a non-bypassable rate mechanism. There is, however, no language that  
18 requires the Commission to assign these costs to all rate classes (nor is there any  
19 provision that requires the Commission to assign these costs to rate classes on a per  
20 kWh basis on the basis of non-production revenue requirements).

21  
22 The OCA's proposal for either a kWh or non-production revenue requirement  
23 assignment appears to be relying on this section of the Competition Act to justify

1 assigning USF costs to all customer classes. My interpretation of this portion of the  
2 Competition Act does not support such an assignment of USF costs to all customer  
3 classes.

4  
5 **Q. Are there any additional problems with the OCA's proposal to assign USF costs**  
6 **to all customers and classes on the basis of kWh energy or non-production**  
7 **revenue requirements?**

8  
9 A. Yes. As a result of the component rate cap provisions of §2804(4) (i), customer cost  
10 responsibility for USF costs is capped at current levels. Therefore, proposals to  
11 assign USF costs on either of these bases would violate component rate caps. To the  
12 extent that current customer rates do not reflect such an assignment of USF costs to  
13 customer classes on an energy or non-production revenue requirement basis, doing  
14 so in the rate unbundling would violate component rate cap. Effectively, to the  
15 extent that costs associated with USF costs programs, such as low income assistance  
16 and uncollectible expenses are included in DLC's current bundled rates, these costs  
17 are already reflected in the distribution and customer components of the rates and  
18 cannot be reassigned using an alternative allocation factor in the rate unbundling  
19 process.

20  
21 **Q. Do you have any final comments regarding this issue?**

1 A. The proposal of OCA witness Brockway to assign USF costs on an energy or non-  
2 production revenue requirement basis to customer classes is a form of social  
3 ratemaking that should more properly be addressed by the legislature and not by the  
4 Commission through the imposition of an effective "tax" on energy usage. The  
5 bottom line effect of these two proposals to assign USF costs to impose an energy  
6 tax for the purpose of funding universal service, social welfare requirements. This  
7 is not to suggest that such funding, at reasonable levels, is inappropriate. However,  
8 the Commission should not establish rates to fund these programs through the  
9 mechanism of an energy usage tax, but rather, should follow traditional Cost of  
10 Service ratemaking principles in recovering these costs. There is no cost-causation  
11 relationship between USF costs and energy usage. The Commission should not  
12 impose such taxes on energy usage in Pennsylvania; rather, the legislature should  
13 address such issues. The Commission should follow cost-causation principles in  
14 establishing rates.

1                                   **III. ISSUES REGARDING THE CALCULATION OF**  
2                                   **MARKET PRICES AND STRANDED COST**

3

4   **Q.    Have you reviewed the testimony of OTS witness Paul J. Metro in this**  
5           **proceeding?**

6

7   **A.    Yes. Mr. Metro has accepted, with two modifications, DLC's proposal to calculate**  
8           stranded cost in the year 2003 rather than using projections of market prices  
9           developed in this proceeding.

10

11 **Q.    Do you agree with the Staff's endorsement of DLC's methodology?**

12

13 **A.    No. As I discussed in my direct testimony, I believe that it is appropriate to**  
14           determine the level of stranded cost in this proceeding based on projected market  
15           prices.

16

17 **Q.    Have you reviewed the direct testimony of Mr. David Boonin on behalf of New**  
18           **Energy Ventures ("NEV")?**

19

20 **A.    Yes. Mr. Boonin discusses a number of issues associated with the market generation**  
21           rate, tariff unbundling and, the development of CTC charges for customer rate  
22           schedules.

1 Mr. Boonin has proposed a methodology that relies on a variable price of generation  
2 that reflects actual market conditions. Mr. Boonin's proposal is conceptually similar  
3 to the proposal of West Penn in that it is based on prevailing market prices that  
4 actually will occur in the future, rather than projected market prices that will be  
5 determined in this proceeding. However, Mr. Boonin does not accept the Company's  
6 determination of "prevailing market price" and proposes to use prices determined in  
7 a power exchange.

8  
9 **Q. Do you agree with Mr. Boonin's proposal?**

10  
11 **A.** No. For the reasons that I discussed at length in my direct testimony, I believe that  
12 it is imperative to calculate the level of stranded cost and the associated CTC charges  
13 in this proceeding. Under Mr. Boonin's proposal, customers would face complete  
14 uncertainty as to expected market prices and the expected CTC charge. In fact, under  
15 Mr. Boonin's proposal to use hourly power exchange prices, it would appear that the  
16 CTC charge could change hourly. At least under the Company's proposal, the  
17 customers would be assured that the CTC charge would be fixed for at least a one  
18 year period.<sup>2</sup>

---

<sup>2</sup> And, as noted in my direct testimony, I oppose the Company's proposal.

1 Q. Does Mr. Boonin provide any testimony discussing how his proposal would  
2 relate the CTC charge to the actual calculation of stranded cost?  
3

4 A. No. Although Mr. Boonin's seems to recognize that market price, stranded cost and  
5 the CTC charge are related, he does not provide any information as to how the actual  
6 stranded cost would be computed for the Company. Since the transition period only  
7 lasts for a seven year period, while stranded costs are computed over the life of  
8 generating units, it does not appear that Mr. Boonin's proposal provides the necessary  
9 linkage between these important issues in this proceeding. I would recommend that  
10 the Commission reject his proposal.

1                                   **IV. RESPONSE TO OCA WITNESS LEE SMITH**  
2                                   **REGARDING UNBUNDLING ISSUES**

3

4   **Q.    Have you reviewed the proposal of OCA witness Lee Smith to unbundle**  
5           **Duquesne's retail rate schedules?**

6

7   A.    Yes. OCA witness Lee Smith has proposed an unbundling methodology in this  
8           proceeding that relies on the development of expected market generation rates for  
9           each class and specific allocation of CTC revenue requirements, such that the average  
10          retail rate schedule rate decrease is approximately 18% per year. According to Ms.  
11          Smith's testimony, CTC revenue requirements have been allocated using a production  
12          capacity allocation factor.

13

14   **Q.    Do you agree with OCA witness Smith's proposal to unbundle Duquesne's retail**  
15          **rate schedules and establish the CTC and market generation rates for those**  
16          **schedules?**

17

18   A.    No. As I indicated in my direct testimony, I believe that a CTC residual  
19          methodology is the most appropriate and reasonable approach to unbundle  
20          Duquesne's rates. Under the residual approach, expected market generation rates  
21          would be calculated for each rate schedule and the CTC for the rate schedule would  
22          be determined as a residual, after removing T&D costs, and the market generation

1 rate from the fully bundled rate. Although conceptually, Ms. Smith's approach of  
2 utilizing an expected market generation rate and an allocated CTC revenue  
3 requirement (using a production demand allocation factor) could be utilized, in the  
4 case of Duquesne Light Company, the OCA's proposal will violate the generation  
5 rate cap provisions of the Competition Act for a number of rate schedules including  
6 rate HVPS.

7  
8 Based on my preliminary review, one of the reasons for the violation of the  
9 rate cap under the OCA proposal for Rate Schedule HVPS is that the  
10 production revenue requirement proposed to be utilized in the analysis does  
11 not reflect: 1) the presence of interruptible sales on Rate Schedule HVPS, 2)  
12 the nature of limited availability "avoidance generation energy" among Rate  
13 Schedule HVPS customers and other supplemental energy purchases, all of  
14 which are reflected at full cost responsibility in the production demand  
15 revenue requirement but are not reflected at full rate levels in the bundled  
16 rates that are used in the unbundling process. As a result, these customers,  
17 when assigned fully loaded transmission and distribution charges, expected  
18 market generation cost and fully allocated CTC revenues, are assigned costs  
19 under the OCA proposal in excess of actual current rates. As proposed, this  
20 is not a feasible for rate unbundling on the Duquesne system and would lead  
21 to a violation of the generation rate cap for a number of rate classes.

1 Q. Does that complete your rebuttal testimony?

2

3 A. Yes.

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY  
COMMISSION, ET. AL.

V.

DUQUESNE LIGHT COMPANY  
FOR APPROVAL OF ITS  
RESTRUCTURING PLAN UNDER  
SECTION 2806 OF THE  
PUBLIC UTILITY CODE

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SURREBUTTAL TESTIMONY  
OF  
STEPHEN J. BARON

DOCUMENT  
FOLDER

ON BEHALF OF THE  
DUQUESNE INDUSTRIAL INTERVENORS

BOC Gases  
General Motors Corp.  
J&L Specialty Steel, Inc.  
LTV Steel Company, Inc.

Nabisco Inc.  
Nova Chemicals, Inc.  
USX Corporation - US Steel Group

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ATLANTA, GEORGIA

DECEMBER 1997

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**SURREBUTTAL TESTIMONY OF STEPHEN J. BARON**

1

2 **Q. Please state your name and business address.**

3

4 **A. My name is Stephen J. Baron. My business address is J. Kennedy and Associates,**  
5 **Inc. ("Kennedy and Associates"), 35 Glenlake Parkway, Suite 475, Atlanta, Georgia**  
6 **30328.**

7

8 **Q. Have you previously submitted direct and rebuttal testimony in this proceeding?**

9

10 **A. Yes.**

11

12 **Q. What is the purpose of your surrebuttal testimony?**

1 A. I am responding to the rebuttal testimony of Duquesne Light Company ("DLC" or  
2 "the Company") witnesses David D. Marshall, Donald Clayton, Michael M. Schnitzer,  
3 James A. Lahtinen and Frank A. Hoffmann. I also respond to the rebuttal testimony  
4 of the Office of Small Business Advocate ("OSBA") witness Brian Kalcic. Each of  
5 these witnesses addressed, in part, issues that I raised in my direct testimony.

6

7 **Response to Duquesne Light Company Witness David D. Marshall**

8

9 **Q. Have you reviewed Mr. Marshall's rebuttal testimony?**

10

11 A. Yes. As in the initial filing of DLC, Mr. Marshall addresses the overall policy  
12 position of DLC with respect to various stranded cost recovery issues and the  
13 Company's proposed customer choice plan. In providing additional testimony  
14 (rebuttal) on these issues, Mr. Marshall has addressed a number of issues and  
15 positions raised by Duquesne Industrial Intervenors ("DII") in our direct case.

16

17 The first issue that I would like address concerns the Company's proposal to  
18 voluntarily divest its generating assets beginning in the year 2003 in order to establish  
19 a final valuation for these assets. Based on the testimony of Mr. Marshall and Mr.  
20 Schnitzer, the Company is modifying its initial proposal by agreeing to a divestiture

1 in the year 2003 for the purpose of establishing asset valuation, rather than the  
2 proposed arbitration process.

3

4 Although I consider the Company's proposal to be an improvement over its initial  
5 plan it is not a satisfactory response to the concerns that I raised in my direct  
6 testimony. The Company's proposal continues to include an indefinite stranded cost  
7 liability for five or more years after the implementation of customer choice.

8 Although, I agree with the Company that divestiture is the most accurate method to  
9 establish a valuation of the Company's assets, a five year delay in establishing the  
10 valuation and stranded cost quantification creates uncertainty for DLC's customers.

11 This would significantly hinder the development of competitive market for electricity  
12 in the Duquesne area. Customers would have no assurance as to the ultimate  
13 stranded cost liability for which they would be responsible.

14

15 **Q. Under DLC's modified proposal, what rate levels would customers pay during**  
16 **the period 1999 through 2003?**

17

18 **A.** As I understand Mr. Marshall's testimony, customers would pay the current level of  
19 rates (including all roll-ins of the ECR and STAS) at least until the end of the year  
20 2003. If the divestiture produced a final valuation of the Company's assets that, at  
21 that point in time, resulted in no additional stranded cost liability, I presume that the

1 Company would move immediately to full competitive rates with no additional CTC  
2 charges. However, for the period 1999 through 2003 (five years), customers would  
3 continue to pay the full embedded cost rates currently charged by the Company.

4  
5 **Q. Under your analysis, as filed in your direct testimony, when would customers**  
6 **discontinue paying a competitive transition charge in their rates?**

7  
8 A. Based on the analysis that I presented in my direct testimony, DLC would recover  
9 its required level of stranded cost during the year 2002. Even under the situation  
10 where no sharing adjustment is imposed by the Commission (as recommended by  
11 DII), DLC would recover its stranded cost during the year 2003. However, unlike  
12 the Company's proposal, customers would not face uncertainty after the year 2003  
13 (from today's prospective) for additional stranded cost liability. This is the major  
14 distinction between the Company's proposal and DII's proposal. Of course, it is also  
15 important to recognize that the Company continues to rely on the "Duquesne RFP"  
16 process to determine annual market prices that will be included in the Company's  
17 unbundled rates (referred to as a "CGC" in the Company's filing), rather than a fixed  
18 projection of market prices as proposed by DII and other parties. This additional  
19 difference between the Company's proposal and DII's recommendation creates added  
20 uncertainty, since customers will not know the expected value of the CGC in the  
21 years 1999 through 2003, nor will they know the level of the CTC charge embodied

1 in each of the rate schedules (since the CTC charge is determined as a residual after  
2 establishing the market price component). Thus, even under the Company's modified  
3 proposal, there is still significant uncertainty as to: 1) the future level of stranded cost  
4 liability, 2) the period over which CTC charges will be imposed on customers and  
5 3) the level of the CTC charge in any future year.

6  
7 **Q. Has the Company indicated why it is opposed to divesting its generating assets**  
8 **earlier than the year 2003?**

9  
10 A. Yes. Although Mr. Marshall acknowledges that GPU has indicated that it will divest  
11 its generating assets early in the transition period (presumably prior to the beginning  
12 of retail competition), Mr. Marshall questions whether this can be accomplished and  
13 also raises the issue of obligation to serve. My understanding of Mr. Marshall's  
14 testimony in this regard is that DLC believes that since it will continue to have an  
15 obligation to serve during the transition period, it must maintain its own generating  
16 capacity.

17  
18 **Q. Do you believe that this is a reasonable justification for not divesting of its**  
19 **generating assets earlier than 2003?**

- 1 A. No. The fact that DLC has an obligation to serve as a provider of last resort should  
2 not hinder its ability to obtain energy at market prices to fulfill its obligations. DLC  
3 also raises the issue that market prices could be high enough so that it will not be  
4 able to recover any sufficient CTC revenues due to the generation rate cap that will  
5 be imposed during the transition period. However, it would appear that this same  
6 problem is also inherent in the Company's plan that relies on the "Duquesne RFP"  
7 process to establish market prices. If these market prices are sufficiently high that  
8 the Company will not be able to recover stranded cost (i.e., there is no room under  
9 the rate cap for the CTC charge) or, in the worst case scenario, that these market  
10 prices actually exceed the generation rate cap, it would appear that the Company  
11 would have the same problem identified by Mr. Marshall that might occur with an  
12 early divestiture. This is simply a risk in transitioning to full retail competition.  
13 Based on the market price projections of DLC, the OCA and DII, it would appear  
14 that this concern of Mr. Marshall's should not be assigned a very high probability.  
15
- 16 **Q. There are a number of portions of Mr. Marshall's rebuttal testimony (e.g., page**  
17 **4, page 18, etc.), in which he has discussed the proposed adjustment that you**  
18 **have made to DLC's recoverable stranded cost under the just and reasonable**  
19 **standard discussed in the Competition Act. Do you have any response to his**  
20 **testimony in this regard?**

1 A. Yes. First, in responding to Mr. Marshall's testimony, I am also implicitly  
2 responding to the testimony of other DLC witnesses that address the proposed DII  
3 sharing adjustment. As a result, I will not separately respond to rebuttal testimony  
4 on this issue filed by these other witnesses (e.g., Mr. Clayton, Mr. Schnitzer).

5  
6 Before specifically addressing Mr. Marshall's objections to any sharing adjustment  
7 associated with DLC's generation stranded cost, I believe that it would be useful to  
8 reiterate the basis for the adjustment that I have made. As I discussed in my direct  
9 testimony, it is DII's position that the Commission must (under the Competition Act)  
10 first consider whether a utility has undertaken reasonable efforts at mitigation and  
11 whether the asset is properly claimable as a stranded cost. After such a review,  
12 stranded cost must be quantified and then the Commission must identify a just and  
13 reasonable level of these quantified costs for recovery from ratepayers. A just and  
14 reasonable standard is the standard identified in the Act that governs the level of  
15 stranded generation cost that can be recovered from customers. This is discussed in  
16 Section 2804(13) of the Act.

17  
18 **Q. Mr. Marshall criticizes DII's sharing proposal because it fails to consider the**  
19 **amount, if any, of mitigation by the Company of its stranded cost in the**  
20 **assignment of stranded cost between shareholders and ratepayers (the sharing**  
21 **allocation). Do you have any comments on his testimony in this regard?**

1 A. Yes. Mr. Marshall is correct that the methodology proposed by DII in this  
2 proceeding and the methodology proposed by industrial customers in other  
3 Pennsylvania restructuring proceedings is independent of the level of mitigation  
4 accomplished by the Company. The reason for this approach is that it is assumed  
5 that the Company has fully mitigated all of its stranded cost prior to the  
6 quantification of potentially recoverable amounts. It is only after full and reasonable  
7 efforts at mitigation that stranded cost can be quantified. Once the quantification is  
8 made, it is then the responsibility of the Commission to identify a just and reasonable  
9 level of these quantified costs for recovery from ratepayers. As such, it is assumed  
10 in the DII analysis that the Company has fully mitigated its stranded cost. The  
11 purpose of the sharing adjustment is to arrive at a just and reasonable level of fully  
12 mitigated and properly claimable stranded costs that are recoverable from ratepayers.

13  
14 **Q. Mr. Marshall indicates that he is unaware of any instance in past Pennsylvania**  
15 **proceedings where an economic excess capacity adjustment has been made based**  
16 **on a comparison between embedded cost and market prices. Do you believe that**  
17 **this is a valid criticism of your proposed sharing adjustment to arrive at a just**  
18 **and reasonable level of generation stranded cost for recovery from ratepayers?**

19  
20 A. No. The used and useful concept that I have discussed in my direct testimony is  
21 based on the ratemaking concept of economic excess capacity. Historically, in rate

1       proceedings in which economic excess capacity has been an issue, the analysis  
2       compared embedded cost to the opportunity cost associated with a more economic  
3       alternative. For example, the life cycle cost of a nuclear unit would be compared to  
4       the life cycle cost of a combustion turbine to determine the present value "excess"  
5       costs associated with the investment in the nuclear unit. An economic excess  
6       capacity adjustment would then be based on the disallowance of all or a portion of  
7       the uneconomic amount of the investment being considered for ratemaking.

8  
9   **Q.   Is a stranded cost analysis similar to an analysis of economic excess capacity?**

10  
11   **A.**   Yes. The main difference in the stranded cost analysis is that the opportunity cost  
12       is the market price. In other words, a comparison is made between the cost of an  
13       investment (including operating cost) and the alternative or opportunity cost  
14       associated with market based pricing. In this manner, a stranded cost analysis is  
15       similar to an economic excess capacity analysis. DII's proposed sharing mechanism  
16       recognizes this underlying similarity and has relied on the used and useful standard  
17       as well as the Competition Act to arrive at a reasonable basis for sharing the stranded  
18       cost associated with DLC's generating units. The fact that the Commission has not  
19       disallowed a utility's investment or a cost based on a comparison of embedded cost  
20       to market prices does not change the fundamental nature of the used and useful

1 principle, nor does it change the concept of an economic excess capacity evaluation  
2 based on opportunity cost.

3  
4 **Response to Duquesne Light Company's Witness Donald Clayton**

5  
6 **Q. Have you reviewed Mr. Clayton's rebuttal testimony in this proceeding?**

7  
8 **A.** Yes. Mr. Clayton, among other issues, addresses the calculations that I have  
9 employed in the analysis of DLC's stranded generation cost that can be recovered  
10 from ratepayers. DII witness Lane Kollen is responding to Mr. Clayton's testimony  
11 on this and other issues and will provide DII's response.

12  
13 **Response to Duquesne Light Company Witness Michael M. Schnitzer**

14  
15 **Q. Have you reviewed Mr. Schnitzer's rebuttal testimony in this proceeding?**

16  
17 **A.** Yes. Mr. Schnitzer's rebuttal testimony addresses issues related to stranded cost  
18 determination, the appropriateness (from the Company's prospective) of using actual  
19 market prices for the market generation component of the Company's unbundled rates  
20 and the proposed sharing mechanism that DII is recommending in this proceeding.  
21 As I discussed previously, I have incorporated my comments with respect to the

1 Company's rebuttal on the sharing adjustment of stranded generation cost in my  
2 response to DLC witness Marshall and I will not repeat that rebuttal in my response  
3 to Mr. Schnitzer, although those comments are applicable.  
4

5 **Q. On page 7 of Mr. Schnitzer's rebuttal testimony, he states that the industrials**  
6 **(DII) have proposed a stranded cost recovery level that would entitle the**  
7 **Company to recover rates up to the rate cap through the year 2005, assuming**  
8 **no sharing. Do you agree with his analysis?**

9  
10 **A. No. Based on my direct testimony (Baron Exhibit \_\_\_\_ (SJB-5)), I have calculated**  
11 **that the Company would receive over \$2.1 billion through the year 2005 on a net**  
12 **present value basis as a result of our market price assumptions and the resulting CTC**  
13 **revenues generated by each rate schedule. DII is clearly not recommending \$2.1**  
14 **billion in stranded cost recovery for the Company (even excluding sharing). In fact,**  
15 **this \$2.1 billion recovery level would exceed even the Company's estimated stranded**  
16 **cost of \$1.9 billion.**

17  
18 **Q. On page 7 of Mr. Schnitzer's rebuttal testimony at lines 9 through 22, he**  
19 **discusses his position that the Competition Act effectively requires that the**  
20 **market generation prices included in unbundled rates (hereinafter referred to**

1           **as the "CGC" following the Company's designation), be set "on an annual basis**  
2           **using current prices." Do you agree with his conclusion?**

3  
4    A.    No. First of all, it is important to remember that PECO Energy, PP&L, Metropolitan  
5           Edison and Penelec all have filed restructuring cases using projected market prices  
6           for the CGC component. Since all of these companies filed restructuring cases based  
7           on the Competition Act, I believe that there is ample evidence to question Mr.  
8           Schnitzer's interpretation of the Competition Act and the requirement that the CGC  
9           be set on an annual basis rather than on a projected basis. More importantly, as I  
10          discussed in my direct testimony, in order for customers to have a reasonable level  
11          of certainty with regard to the CTC charges that they will be paying during the  
12          transition period, it is necessary to use projected market prices in the determination  
13          of the CTC component of rates. Otherwise, customers will not know the CTC charge  
14          that they will face in a future year, although they will be liable for the charge even  
15          if they are no longer a generation service customer on DLC.

16  
17    Q.    **On pages 17 and 18 of Mr. Schnitzer's rebuttal testimony, he discusses the issue**  
18           **of using a fixed CGC (market generation charge embodied in unbundled rates)**  
19           **vs. a CGC calculated annually based on so-called current market conditions. Do**  
20           **you have any comments on his testimony on these pages?**

1 A. Yes. Other than Mr. Schnitzer's restatement of his position that as a result of the  
2 Competition Act and the rate cap, the CGC must be determined annually, I do not  
3 see any additional arguments that he has put forth supporting the Company's position.

4  
5 The position that I have advocated in my direct testimony is relatively  
6 straightforward. That is, in order for industrial customers to effectively participate  
7 in the competitive market during the transition period, they must have some measure  
8 of certainty regarding the CTC charges that they will pay each year. By adjusting  
9 the CGC (market price) annually, rather than fixing it as proposed by DII, the  
10 resulting CTC charge will also vary annually. This resulting variation and  
11 uncertainty in the CTC charge would, in my opinion, significantly hamper the ability  
12 of large industrial consumers and other customers to effectively utilize alternative  
13 generation suppliers in a competitive environment.

14  
15 Under the DII proposal, the Company will continue recovering CTC charges from its  
16 customers until the full balance of stranded cost has been recovered, assuming that  
17 this can occur in the seven year transition period. Even if it does not occur in the  
18 first seven years, the Company would have the right to file with the Commission for  
19 continued recovery based on evidence it provides at the time of such a filing. In this  
20 sense, the Company would have the opportunity to recover its allowed stranded cost  
21 and mitigate its risk. On the other hand, if DLC's proposal is adopted, customers

1 will never know (beyond a one year ahead period) what the level of CTC charges  
2 they will pay in future year periods will be.

3

4 **Response to Duquesne Light Company Witness James Lahtinen**

5

6 **Q. Have you reviewed Mr. Lahtinen's rebuttal testimony in this proceeding?**

7

8 A. Yes. Based on my review of Mr. Lahtinen's rebuttal testimony, he has essentially  
9 accepted our recommendation to remove distribution loss compensation energy  
10 capacity costs from the distribution rate. In addition, he has offered the Company's  
11 proposed "efficient rate design" unbundling proposal as an option rather than as a  
12 mandatory requirement. Although I continue to believe that the Company's proposed  
13 "efficient rate design" proposal (wherein the Company has set a substantial portion  
14 of its CTC on a fixed, take-or-pay basis) is inappropriate, the Company's new  
15 proposal to offer this as an option rather than as a mandatory tariff, is satisfactory to  
16 DII. Finally, Mr. Lahtinen has acknowledged that the Company failed to continue  
17 offering "generation avoidance energy" as part of its HVPS tariff in the unbundling  
18 process and has indicated that it will modify the proposed tariff to reflect this change.  
19 DII agrees with the Company's position on this issue, as modified in Mr. Lahtinen's  
20 rebuttal testimony.

1 **Q. Are there any additional issues raised by Mr. Lahtinen in his rebuttal testimony**  
2 **that you wish to comment on?**

3  
4 A. Yes. It is somewhat unclear whether DLC has modified its position with respect to  
5 ancillary services in its rebuttal testimony. Based on my review of Mr. Lahtinen's  
6 testimony, it appears that the Company has not changed its position that includes  
7 ancillary services in the transmission portion of the Company's unbundled charges.  
8 I continue to believe that it is appropriate to assign generation-related ancillary  
9 service costs to the generation function. This is the approach that I have used in my  
10 direct testimony. Under this methodology, the Company would be fully compensated  
11 for all generation-related ancillary services that it provides to customers. However,  
12 since these costs were not included as part of transmission costs in the Company's  
13 current rates, an unbundling of current rates should reflect the assignment of these  
14 costs to the generation function.

15  
16 Finally, it should be noted that in the Company's analysis, it has included generation-  
17 related ancillary services at embedded cost. To the extent that the Company actually  
18 sells ancillary services at embedded cost and that these embedded costs exceed market  
19 revenues, the difference should be credited against any stranded cost liability that the  
20 Company imposes on its customers. Since it is assumed in the DII market price and  
21 market revenue analysis that all sales from generating units are at market prices, the

1 fact that some sales associated with ancillary services will be at higher, embedded  
2 cost-based rates, should be recognized in the overall calculation of stranded cost. If  
3 DLC's proposal to charge customers ancillary services within the transmission rate  
4 at embedded cost is accepted, then there should be an adjustment to the stranded cost  
5 quantification to reflect this increase in revenues above expected market revenues.  
6

7 **Response to Duquesne Light Company Witness Frank A. Hoffmann**

8  
9 **Q. Have you reviewed Mr. Hoffmann's rebuttal testimony regarding the elimination**  
10 **of Rider Nos. 8 and 20 to existing DLC customers?**

11  
12 **A.** Yes. Mr. Hoffmann has provided rebuttal testimony to my direct testimony in which  
13 I objected to the elimination of Rider Nos. 8 and 20 to existing customers on the  
14 grounds that this would be a discriminatory application of these rates between new  
15 and existing customers and could lead to competitive problems for existing DLC  
16 customers. Mr. Hoffmann's rebuttal appears to focus on the benefits of the  
17 Company's proposed "efficient rate design" wherein the incremental cost of energy  
18 would be reduced relative to current tariffs. It appears that Mr. Hoffmann's argument  
19 is that existing customers who use additional amounts of energy will be paying  
20 relatively low incremental charges. However, this argument is only applicable under  
21 DLC's optional rate design proposal, which I have objected to in my direct testimony.

1 Nevertheless, Mr. Hoffmann has not provided any response to the potential  
2 discriminatory nature of the Company's proposed elimination of Rider Nos. 8 and 20  
3 to existing customers. If these customers expand their facilities and use additional  
4 amounts of energy, they should be afforded the same opportunity for incremental  
5 rates as new customers coming on to the DLC system. Any other approach is  
6 discriminatory and could lead to competitive disadvantages for DLC's existing  
7 customers.

8

9 **Q. On page 4 at line 9 of his rebuttal testimony, Mr. Hoffmann discusses the**  
10 **Company's position that Rule 4 contracts should not be unbundled. Do you**  
11 **have any comments on his testimony in this regard?**

12

13 **A.** Yes. As I discussed in my direct testimony, it is necessary to fully unbundle Rule  
14 4 contracts based on the costs and rate composition embodied in these contracts. The  
15 competitive transition charge specifically associated with a Rule 4 contract should be  
16 the basis for the charge that a customer would pay, under these contracts, if a  
17 customer utilizes an alternative energy supplier (assuming that the contract permits  
18 a customer to do so).

1 Response to OSBA witness Brian Kalcic

2

3 Q. Have you reviewed the rebuttal testimony of OSBA witness Brian Kalcic?

4

5 A. Yes. Mr. Kalcic has submitted testimony that addresses the proposal that I made in  
6 my direct testimony to recover stranded costs using a "residual CTC method."

7

8 Q. Mr. Kalcic, on page 5 of his rebuttal testimony, states that the CTC residual  
9 methodology would "effectuate an interclass shift of CTC cost responsibility."  
10 Do you have any comments on his testimony in this regard?

11

12 A. Yes. In my opinion, the CTC residual method, relied upon by both the Company and  
13 DII in this case, does not produce any interclass cost shift. Rather, the CTC residual  
14 method exactly calculates the difference between the generation-related costs within  
15 each class's current rates and the market price for that rate. This difference  
16 effectively represents the stranded cost responsibility for that rate class. There is no  
17 cost shifting; to the contrary, Mr. Kalcic's proposals would result in substantial cost  
18 shifting by failing to adjust the production demand allocation factor for interruptible  
19 load, generation avoidance energy (rate HVPS), and special contracts. Without  
20 making such adjustments, using a demand allocation factor to assign stranded cost to  
21 rate classes would result in actual cost shifting.

1    **Q.    Mr. Kalcic has suggested an alternative approach that would establish a class**  
2    **specific stranded cost balance, using a production demand allocator. Do you**  
3    **have any comments on this proposal?**

4  
5    A.    Yes. First, if Mr. Kalcic's proposal were to be utilized to recover stranded cost, the  
6    production demand allocator would have to be adjusted to reflect interruptible load,  
7    special contracts and generation avoidance energy. Mr. Kalcic has provided no such  
8    adjusted allocation factor. Second, under his proposal, CTC collections would  
9    terminate at different times for different rate classes. Mr. Kalcic has not provided  
10   any testimony as to whether the rate cap would continue for all classes until each  
11   class has completed paying the CTC or whether the rate cap would only apply to  
12   classes that continue paying a CTC charge. At the minimum, it would appear that  
13   his proposal would add significant administrative complexity to the CTC recovery  
14   process and the implementation of retail access. I continue to believe that the CTC  
15   residual method, without class specific tracking, is the most reasonable and  
16   appropriate approach to recover stranded cost.

17  
18   **Q.    Does that complete your surrebuttal testimony?**

19  
20   A.    Yes.

WORKPAPERS

OF

STEPHEN J. BARON

*R-*

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Duquesne Light Company  
DII Recommended Stranded Costs  
(\$000)

|                                       | Total<br><u>Company</u> | Total<br><u>Jurisdictional</u> <sup>1</sup> |
|---------------------------------------|-------------------------|---|
| Net Generating Plant & CWIP           | 979,130                 |   |
| Less: DII Market Value                | <u>(16,742)</u>         |   |
| Stranded Plant                        | 995,872                 | 994,969                                     |
| Less: Equity Return Disallowance      | (232,500)               | (232,289)                                   |
| Other Regulatory Assets (Liabilities) | 575,220                 | 574,698                                     |
| Transition Costs                      | 9,800                   | 9,791                                       |
| Nuclear Decommissioning               | 42,959                  | 42,920                                      |
| <b>Total Stranded Costs</b>           | <b>1,391,351</b>        | <b>1,390,089</b>                            |

<sup>1</sup> Based on a jurisdictional production factor of 99.909%

**Duquesne Light Company**  
**Example of Stranded Generation "Sharing" Analysis**  
**DII Calculation**  
**Monthly Amortization with end-of-period convention**  
**No Equity Return on Stranded Plant**  
**(\$000)**

|                |         |
|----------------|---------|
| Stranded Plant | 995,872 |
|----------------|---------|

| Year | Beginning<br>Unamortized<br>Stranded Plant<br>Balance | Return<br>@ 5.51% | Annual<br>Amortization | Total<br>Annual<br>Rev Req | PV of<br>Annual<br>Rev Req |
|------|---|-------------------|------------------------|----------------------------|----------------------------|
| 1999 | 995,872   | 51,280            | 142,267                | 193,547                    | 185,621                    |
| 2000 | 853,605   | 43,441            | 142,267                | 185,708                    | 164,717                    |
| 2001 | 711,337   | 35,602            | 142,267                | 177,869                    | 145,907                    |
| 2002 | 569,070   | 27,763            | 142,267                | 170,030                    | 128,994                    |
| 2003 | 426,802   | 19,924            | 142,267                | 162,191                    | 113,799                    |
| 2004 | 284,535   | 12,085            | 142,267                | 154,352                    | 100,160                    |
| 2005 | 142,267   | 4,246             | 142,267                | 146,514                    | 87,928                     |

|   |                  |
|---|------------------|
| Total PV of Stranded Costs Rev Req - No Equity Return                 | 927,125          |
| Total PV of Stranded Costs Rev Req - Full Rate of Return <sup>1</sup> | <u>1,159,625</u> |
| Equity Return Revenue Requirement                                     | (232,500)        |

<sup>1</sup> From Exhibit \_\_\_\_ (SJB-3), page 2 of 2

**Duquesne Light Company**  
**Example of Stranded Generation "Sharing" Analysis**  
**DII Calculation**  
**Monthly Amortization with end-of-period convention**  
**Full Equity Return on Stranded Plant**  
**(\$000)**

|                |         |
|----------------|---------|
| Stranded Plant | 995,872 |
|----------------|---------|

| Year | Beginning<br>Unamortized<br>Stranded Plant<br>Balance | Return<br>@ 13.39% | Annual<br>Amortization | Total<br>Annual<br>Rev Req | PV of<br>Annual<br>Rev Req |
|------|---|--------------------|------------------------|----------------------------|----------------------------|
| 1999 | 995,872   | 124,616            | 142,267                | 266,884                    | 256,005                    |
| 2000 | 853,605   | 105,567            | 142,267                | 247,834                    | 219,870                    |
| 2001 | 711,337   | 86,517             | 142,267                | 228,784                    | 187,720                    |
| 2002 | 569,070   | 67,467             | 142,267                | 209,735                    | 159,162                    |
| 2003 | 426,802   | 48,418             | 142,267                | 190,685                    | 133,836                    |
| 2004 | 284,535   | 29,368             | 142,267                | 171,636                    | 111,418                    |
| 2005 | 142,267   | 10,319             | 142,267                | 152,586                    | 91,614                     |

Total PV of Stranded Costs Rev Req - Full Rate of Return      1,159,625

**Duquesne Light Company**  
**Calculation of Adjusted Rate of Return**

|                                    | Amount    | Weight  | Cost<br>Rate | Weighted<br>Cost | Pre-Tax<br>Cost | Pre-Tax<br>no CE<br>Return |
|------------------------------------|-----------|---------|--------------|------------------|-----------------|----------------------------|
| Long Term Debt                     | 1,240,762 | 50.23%  | 8.51%        | 4.28%            | 4.28%           | 4.28%                      |
| Preferred and<br>Preference Stock  | 239,330   | 9.69%   | 7.45%        | 0.72%            | 1.23%           | 1.23%                      |
| Common Equity                      | 990,236   | 40.08%  | 11.50%       | 4.61%            | 7.88%           |                            |
| Total                              | 2,470,328 | 100.00% |              | 9.61%            | 13.39%          | 5.51%                      |
| Tax Shield                         |           |         |              | -1.77%           |                 |                            |
| After-tax weighted cost of capital |           |         |              | 7.84%            |                 |                            |

Composite Tax Rate      41.494%

**Duquesne Light Company**  
**Summary of Functionalized Revenue Requirements by Rate Class**

| <u>Rate Class</u> | Col 1<br>Production<br>Capacity <sup>1</sup> | Col 2<br>Energy <sup>1</sup> | Col 3<br>Transmission <sup>1</sup> | Col 4<br>Distribution <sup>1</sup> | Col 5<br>Reactive<br>Power <sup>1</sup> | Col 6<br>Transmission<br>per DQE <sup>2</sup> | Col 7<br>Adjustment <sup>3</sup> |
|-------------------|--|------------------------------|------------------------------------|------------------------------------|---|---|----------------------------------|
| Rate RA           | 2,023,131                                    | 514,405                      | 69,785                             | 795,372                            | 12,658                                  | 91,064  | 21,279                           |
| Rate RS           | 207,544,109                                  | 46,258,233                   | 8,789,208                          | 117,065,123                        | 1,273,737                               | 7,982,100                                     | (807,108)                        |
| Rate RH           | 15,627,747                                   | 4,601,769                    | 319,234                            | 5,653,258                          | 100,135                                 | 709,362                                       | 390,128                          |
| Rate GS/GM        | 169,445,364                                  | 39,086,219                   | 8,916,806                          | 61,528,427                         | 1,074,478                               | 8,305,887                                     | (610,919)                        |
| Rate GMH          | 16,537,086                                   | 5,022,229                    | 635,075                            | 5,353,284                          | 104,679                                 | 827,914                                       | 192,839                          |
| Rate GL           | 125,871,134                                  | 43,681,526                   | 6,562,612                          | 30,014,610                         | 801,004                                 | 6,448,422                                     | (114,190)                        |
| Rate GLH          | 18,771,503                                   | 6,924,189                    | 855,490                            | 3,238,058                          | 118,501                                 | 1,140,092                                     | 284,601                          |
| Rate L            | 47,531,544                                   | 23,564,407                   | 2,822,175                          | 10,790,798                         | 299,781                                 | 3,660,418                                     | 838,243                          |
| Rate HVPS         | 29,681,118                                   | 17,553,227                   | 827,392                            | 3,408,061                          | 197,641                                 | 2,427,677                                     | 1,600,286                        |
| Rate AL           | 809  | 186                          | 11                                 | 337                                | 5                                       | 13  | 3                                |
| Rate SE           | 943,067                                      | 451,058                      | 1,607                              | 1,743,616                          | 6,170                                   | 40,288  | 38,681                           |
| Rate SM           | 3,963,133                                    | 496,240                      | 83,715                             | 7,778,714                          | 23,499                                  | 72,289  | (11,426)                         |
| Rate SH           | 81,682                                       | 13,201                       | 1,623                              | 70,861                             | 490                                     | 1,048   | (575)                            |
| Traffic Signals   | 914,356                                      | 199,078                      | 65,337                             | 456,037                            | 5,409                                   | 22,828  | (42,509)                         |
| Total Retail      | 638,935,782                                  | 188,365,967                  | 29,950,069                         | 247,896,557                        | 4,018,187                               | 31,729,402                                    | 1,779,333                        |
| FERC Juris.       | 558,664                                      | 192,223                      | 24,522                             | 59,350                             | 3,488                                   |   |                                  |
| <b>TOTAL</b>      | <b>639,494,445</b>                           | <b>188,558,189</b>           | <b>29,974,591</b>                  | <b>247,955,906</b>                 | <b>4,021,675</b>                        |   |                                  |

<sup>1</sup> From Adjusted Cost of Service Study, COSS Summary

<sup>2</sup> From Exhibit JAL-1A, Page 7 of 10

<sup>3</sup> Column 6 minus Column 3

**Duquesne Light Company**  
**Adjusted Revenue Requirements by Rate Class**  
**(\$1000)**

| <u>Rate Class</u>   | <u>Total Revenue Requirements</u> | <u>Distribution</u> | <u>Transmissison</u> | <u>Adjustment</u> | <u>Adjusted Transmissison</u> | <u>Generation Revenues</u> | <u>Reactive Power</u> | <u>Remaining Generation Revenues</u> |
|---------------------|-----------------------------------|---------------------|----------------------|-------------------|-------------------------------|----------------------------|-----------------------|--------------------------------------|
| Rate RA             | 3,403                             | 795                 | 70                   | 21                | 91                            | 2,516                      | 13                    | 2,504                                |
| Rate RS             | 379,657                           | 117,065             | 8,789                | (807)             | 7,982                         | 254,609                    | 1,274                 | 253,336                              |
| Rate RH             | 26,202                            | 5,653               | 319                  | 390               | 709                           | 19,839                     | 100                   | 19,739                               |
| Rate GS/GM          | 278,977                           | 61,528              | 8,917                | (611)             | 8,306                         | 209,143                    | 1,074                 | 208,068                              |
| Rate GMH            | 27,548                            | 5,353               | 635                  | 193               | 828                           | 21,366                     | 105                   | 21,262                               |
| Rate GL             | 206,130                           | 30,015              | 6,563                | (114)             | 6,448                         | 169,667                    | 801                   | 168,866                              |
| Rate GLH            | 29,789                            | 3,238               | 855                  | 285               | 1,140                         | 25,411                     | 119                   | 25,293                               |
| Rate L              | 84,709                            | 10,791              | 2,822                | 838               | 3,660                         | 70,258                     | 300                   | 69,958                               |
| Rate HVPS           | 51,470                            | 3,408               | 827                  | 1,600             | 2,428                         | 45,634                     | 198                   | 45,436                               |
| Rate AL             | 1                                 | 0                   | 0                    | 0                 | 0                             | 1                          | 0                     | 1                                    |
| Rate SE             | 3,139                             | 1,744               | 2                    | 39                | 40                            | 1,355                      | 6                     | 1,349                                |
| Rate SM             | 12,322                            | 7,779               | 84                   | (11)              | 72                            | 4,471                      | 23                    | 4,447                                |
| Rate SH             | 167                               | 71                  | 2                    | (1)               | 1                             | 95                         | 0                     | 95                                   |
| Traffic Signals     | 1,635                             | 456                 | 65                   | (43)              | 23                            | 1,156                      | 5                     | 1,151                                |
| <b>Total Retail</b> | <b>1,105,148</b>                  | <b>247,897</b>      | <b>29,950</b>        | <b>1,779</b>      | <b>31,729</b>                 | <b>825,522</b>             | <b>4,018</b>          | <b>821,504</b>                       |

**Duquesne Light Company**  
**Adjusted Revenue Requirements by Rate Class**  
**(\$1000)**

| <u>Rate Class</u>   | <u>Total Revenue Requirements</u> | <u>Distribution</u> | <u>Transmission</u> | <u>Adjustment</u> | <u>Adjusted Transmission</u> | <u>Generation Revenues</u> | <u>Reactive Power</u> | <u>Remaining Generation Revenues</u> |
|---------------------|-----------------------------------|---------------------|---------------------|-------------------|------------------------------|----------------------------|-----------------------|--------------------------------------|
| Rate RA             | 3,403                             | 795                 | 70                  | 21                | 91                           | 2,516                      | 13                    | 2,504                                |
| Rate RS             | 379,657                           | 117,065             | 8,789               | (807)             | 7,982                        | 254,609                    | 1,274                 | 253,336                              |
| Rate RH             | 26,202                            | 5,653               | 319                 | 390               | 709                          | 19,839                     | 100                   | 19,739                               |
| Rate GS/GM          | 278,977                           | 61,528              | 8,917               | (611)             | 8,306                        | 209,143                    | 1,074                 | 208,068                              |
| Rate GMH            | 27,548                            | 5,353               | 635                 | 193               | 828                          | 21,366                     | 105                   | 21,262                               |
| Rate GL             | 206,130                           | 30,015              | 6,563               | (114)             | 6,448                        | 169,667                    | 801                   | 168,866                              |
| Rate GLH            | 29,789                            | 3,238               | 855                 | 285               | 1,140                        | 25,411                     | 119                   | 25,293                               |
| Rate L              | 84,709                            | 10,791              | 2,822               | 838               | 3,660                        | 70,258                     | 300                   | 69,958                               |
| Rate HVPS           | 51,470                            | 3,408               | 827                 | 1,600             | 2,428                        | 45,634                     | 198                   | 45,436                               |
| Rate AL             | 1                                 | 0                   | 0                   | 0                 | 0                            | 1                          | 0                     | 1                                    |
| Rate SE             | 3,139                             | 1,744               | 2                   | 39                | 40                           | 1,355                      | 6                     | 1,349                                |
| Rate SM             | 12,322                            | 7,779               | 84                  | (11)              | 72                           | 4,471                      | 23                    | 4,447                                |
| Rate SH             | 167                               | 71                  | 2                   | (1)               | 1                            | 95                         | 0                     | 95                                   |
| Traffic Signals     | 1,635                             | 456                 | 65                  | (43)              | 23                           | 1,156                      | 5                     | 1,151                                |
| <b>Total Retail</b> | <b>1,105,148</b>                  | <b>247,897</b>      | <b>29,950</b>       | <b>1,779</b>      | <b>31,729</b>                | <b>825,522</b>             | <b>4,018</b>          | <b>821,504</b>                       |

**DUQUESNE LIGHT COMPANY**  
Calculation of DII Load-weighted Market Prices

|                                       | 1999    | 2000    | 2001    | 2002    | 2003    | 2004    | 2005    |
|---------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| <b>MARKET CAPACITY PRICES (\$/kW)</b> |         |         |         |         |         |         |         |
|                                       | \$ 47.5 | \$ 48.7 | \$ 49.9 | \$ 51.1 | \$ 52.4 | \$ 53.7 | \$ 55.0 |

| <b>MARKET ENERGY PRICES - ADJUSTED (\$/mWh)</b> |       |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|-------|
| Fall On-Peak                                    | 16.05 | 16.70 | 17.70 | 18.90 | 20.72 | 22.84 | 25.47 |
| Fall Off-peak                                   | 14.54 | 14.88 | 15.24 | 15.91 | 16.68 | 17.63 | 18.05 |
| Winter On-Peak                                  | 20.50 | 22.28 | 25.02 | 27.86 | 31.67 | 35.85 | 41.01 |
| Winter Off-Peak                                 | 16.65 | 17.44 | 18.49 | 19.75 | 21.46 | 23.32 | 25.28 |
| Spring On-Peak                                  | 15.42 | 15.86 | 16.37 | 17.16 | 18.18 | 19.45 | 20.60 |
| Spring Off-Peak                                 | 14.43 | 14.77 | 15.10 | 15.69 | 16.39 | 17.22 | 17.48 |
| Summer On-Peak                                  | 23.45 | 25.44 | 28.49 | 31.08 | 35.06 | 38.78 | 43.46 |
| Summer Off-Peak                                 | 14.79 | 15.18 | 15.68 | 16.49 | 17.42 | 18.63 | 19.56 |
| Average   | 16.68 | 17.45 | 18.54 | 19.79 | 21.49 | 23.35 | 25.27 |

| <b>UNADJUSTED MARKET ENERGY PRICES (\$/mWh)</b> |       |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|-------|
| Fall On-Peak                                    | 16.27 | 16.94 | 18.07 | 19.01 | 20.62 | 22.25 | 25.67 |
| Fall Off-peak                                   | 14.73 | 15.10 | 15.56 | 16.01 | 16.60 | 17.17 | 18.19 |
| Winter On-Peak                                  | 20.78 | 22.61 | 25.54 | 28.03 | 31.52 | 34.93 | 41.32 |
| Winter Off-Peak                                 | 16.87 | 17.70 | 18.88 | 19.87 | 21.36 | 22.72 | 25.47 |
| Spring On-Peak                                  | 15.63 | 16.09 | 16.71 | 17.26 | 18.10 | 18.95 | 20.76 |
| Spring Off-Peak                                 | 14.62 | 14.99 | 15.41 | 15.79 | 16.31 | 16.78 | 17.61 |
| Summer On-Peak                                  | 23.76 | 25.81 | 29.08 | 31.27 | 34.89 | 37.77 | 43.78 |
| Summer Off-Peak                                 | 14.98 | 15.40 | 16.00 | 16.59 | 17.34 | 18.15 | 19.71 |
| Average   | 16.90 | 17.71 | 18.92 | 19.91 | 21.38 | 22.75 | 25.45 |

|                                |        |        |        |        |        |        |        |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|
| All-hours Average <sup>1</sup> | 16.29  | 16.99  | 18.01  | 18.85  | 20.10  | 21.28  | 23.58  |
| RJF All-hours <sup>2</sup>     | 16.08  | 16.74  | 17.64  | 18.74  | 20.20  | 21.84  | 23.40  |
| Adjustment Factor              | 0.9869 | 0.9855 | 0.9797 | 0.9940 | 1.0048 | 1.0265 | 0.9926 |

On-peak hours: Weekdays 10am - 9pm

Off-peak hours: All other hours

Fall: Sep, Oct, Nov  
 Winter: Dec, Jan, Feb  
 Spring: Mar, Apr, May  
 Summer: Jun, Jul, Aug

<sup>1</sup> Simple hourly average marginal cost from monte carlo analysis

<sup>2</sup> Simple hourly average marginal cost from production cost (price paid to Lake Ly 1)

MARKET ENERGY PRICES (\$/mWh)

|       |        |         |         |          |         |          |         |          |
|-------|--------|---------|---------|----------|---------|----------|---------|----------|
| Jan   | 0.0842 | \$ 18.1 | \$ 19.2 | \$ 21.0  | \$ 22.6 | \$ 24.8  | \$ 26.9 | \$ 31.0  |
| Feb   | 0.0782 | \$ 18.5 | \$ 19.7 | \$ 21.5  | \$ 23.0 | \$ 25.2  | \$ 27.3 | \$ 31.6  |
| Mar   | 0.0792 | \$ 15.4 | \$ 15.9 | \$ 16.6  | \$ 17.2 | \$ 18.2  | \$ 19.1 | \$ 21.1  |
| Apr   | 0.0740 | \$ 14.8 | \$ 15.2 | \$ 15.5  | \$ 15.9 | \$ 16.3  | \$ 16.8 | \$ 17.6  |
| May   | 0.0760 | \$ 14.8 | \$ 15.2 | \$ 15.5  | \$ 15.9 | \$ 16.4  | \$ 16.8 | \$ 17.7  |
| Jun   | 0.0872 | \$ 16.3 | \$ 17.1 | \$ 18.4  | \$ 19.3 | \$ 21.0  | \$ 22.5 | \$ 25.6  |
| Jul   | 0.0979 | \$ 17.7 | \$ 18.6 | \$ 20.0  | \$ 21.1 | \$ 22.7  | \$ 24.2 | \$ 27.3  |
| Aug   | 0.1040 | \$ 21.0 | \$ 22.5 | \$ 24.7  | \$ 26.2 | \$ 28.5  | \$ 30.4 | \$ 34.2  |
| Sep   | 0.0773 | \$ 15.0 | \$ 15.4 | \$ 16.0  | \$ 16.5 | \$ 17.3  | \$ 18.2 | \$ 19.8  |
| Oct   | 0.0773 | \$ 14.9 | \$ 15.2 | \$ 15.5  | \$ 16.0 | \$ 16.4  | \$ 16.8 | \$ 17.6  |
| Nov   | 0.0792 | \$ 16.0 | \$ 16.7 | \$ 17.9  | \$ 19.0 | \$ 20.7  | \$ 22.3 | \$ 25.7  |
| Dec   | 0.0856 | \$ 18.4 | \$ 19.6 | \$ 21.4  | \$ 23.0 | \$ 25.3  | \$ 27.4 | \$ 31.3  |
| Total | 1.0000 | \$ 16.9 | \$ 17.7 | \$ 18.9  | \$ 19.9 | \$ 21.4  | \$ 22.7 | \$ 25.5  |
|       |        | \$ 16.9 | \$ 17.7 | \$ 18.9  | \$ 19.9 | \$ 21.4  | \$ 22.7 | \$ 25.5  |
|       |        | \$ 0.0  | \$ 0.0  | \$ (0.0) | \$ 0.0  | \$ (0.0) | \$ 0.0  | \$ (0.0) |

ON-PEAK ENERGY PRICES (\$/mWh)

|       |        |          |         |          |          |          |         |         |
|-------|--------|----------|---------|----------|----------|----------|---------|---------|
| Jan   | 0.0316 | \$ 20.2  | \$ 22.0 | \$ 25.0  | \$ 27.5  | \$ 31.2  | \$ 34.6 | \$ 41.3 |
| Feb   | 0.0290 | \$ 20.6  | \$ 22.2 | \$ 25.0  | \$ 27.3  | \$ 30.6  | \$ 33.9 | \$ 40.4 |
| Mar   | 0.0311 | \$ 16.0  | \$ 16.6 | \$ 17.6  | \$ 18.4  | \$ 19.7  | \$ 21.0 | \$ 24.0 |
| Apr   | 0.0264 | \$ 15.3  | \$ 15.8 | \$ 16.2  | \$ 16.6  | \$ 17.1  | \$ 17.6 | \$ 18.7 |
| May   | 0.0306 | \$ 15.4  | \$ 15.8 | \$ 16.3  | \$ 16.7  | \$ 17.3  | \$ 18.0 | \$ 19.3 |
| Jun   | 0.0355 | \$ 18.6  | \$ 20.0 | \$ 22.5  | \$ 24.4  | \$ 27.6  | \$ 30.5 | \$ 36.6 |
| Jul   | 0.0366 | \$ 22.4  | \$ 24.1 | \$ 26.9  | \$ 28.9  | \$ 32.3  | \$ 34.9 | \$ 40.6 |
| Aug   | 0.0424 | \$ 29.2  | \$ 32.1 | \$ 36.4  | \$ 39.1  | \$ 43.2  | \$ 46.4 | \$ 52.6 |
| Sep   | 0.0298 | \$ 16.0  | \$ 16.5 | \$ 17.5  | \$ 18.3  | \$ 19.8  | \$ 21.4 | \$ 24.6 |
| Oct   | 0.0300 | \$ 15.5  | \$ 15.9 | \$ 16.3  | \$ 16.7  | \$ 17.3  | \$ 17.9 | \$ 19.0 |
| Nov   | 0.0306 | \$ 17.3  | \$ 18.3 | \$ 20.3  | \$ 21.9  | \$ 24.7  | \$ 27.4 | \$ 33.3 |
| Dec   | 0.0304 | \$ 21.6  | \$ 23.6 | \$ 26.7  | \$ 29.2  | \$ 32.8  | \$ 36.2 | \$ 42.2 |
| Total | 0.3840 | \$ 19.4  | \$ 20.7 | \$ 22.8  | \$ 24.4  | \$ 26.9  | \$ 29.1 | \$ 33.7 |
|       |        | \$ 19.4  | \$ 20.7 | \$ 22.8  | \$ 24.4  | \$ 26.9  | \$ 29.1 | \$ 33.7 |
|       |        | \$ (0.0) | \$ 0.0  | \$ (0.0) | \$ (0.0) | \$ (0.0) | \$ 0.0  | \$ 0.0  |

OFF-PEAK ENERGY PRICES (\$/mWh)

|       |        |         |         |         |         |         |         |          |
|-------|--------|---------|---------|---------|---------|---------|---------|----------|
| Jan   | 0.0526 | \$ 16.8 | \$ 17.6 | \$ 18.6 | \$ 19.6 | \$ 21.0 | \$ 22.3 | \$ 24.8  |
| Feb   | 0.0491 | \$ 17.3 | \$ 18.2 | \$ 19.5 | \$ 20.5 | \$ 22.0 | \$ 23.4 | \$ 26.4  |
| Mar   | 0.0481 | \$ 14.9 | \$ 15.4 | \$ 16.0 | \$ 16.5 | \$ 17.2 | \$ 17.9 | \$ 19.2  |
| Apr   | 0.0476 | \$ 14.5 | \$ 14.8 | \$ 15.2 | \$ 15.5 | \$ 15.9 | \$ 16.3 | \$ 17.0  |
| May   | 0.0454 | \$ 14.4 | \$ 14.7 | \$ 15.0 | \$ 15.4 | \$ 15.7 | \$ 16.1 | \$ 16.6  |
| Jun   | 0.0517 | \$ 14.7 | \$ 15.1 | \$ 15.5 | \$ 15.9 | \$ 16.4 | \$ 17.0 | \$ 18.0  |
| Jul   | 0.0612 | \$ 14.8 | \$ 15.2 | \$ 15.8 | \$ 16.3 | \$ 17.0 | \$ 17.8 | \$ 19.3  |
| Aug   | 0.0616 | \$ 15.3 | \$ 15.8 | \$ 16.6 | \$ 17.4 | \$ 18.4 | \$ 19.5 | \$ 21.5  |
| Sep   | 0.0474 | \$ 14.4 | \$ 14.8 | \$ 15.1 | \$ 15.4 | \$ 15.8 | \$ 16.2 | \$ 16.8  |
| Oct   | 0.0473 | \$ 14.5 | \$ 14.8 | \$ 15.1 | \$ 15.5 | \$ 15.8 | \$ 16.2 | \$ 16.8  |
| Nov   | 0.0486 | \$ 15.3 | \$ 15.7 | \$ 16.4 | \$ 17.1 | \$ 18.1 | \$ 19.1 | \$ 20.9  |
| Dec   | 0.0552 | \$ 16.6 | \$ 17.4 | \$ 18.6 | \$ 19.6 | \$ 21.1 | \$ 22.6 | \$ 25.3  |
| Total | 0.6160 | \$ 15.3 | \$ 15.8 | \$ 16.5 | \$ 17.1 | \$ 18.0 | \$ 18.8 | \$ 20.3  |
|       |        | \$ 15.3 | \$ 15.8 | \$ 16.5 | \$ 17.1 | \$ 18.0 | \$ 18.8 | \$ 20.3  |
|       |        | \$ 0.0  | \$ 0.0  | \$ -    | \$ 0.0  | \$ 0.0  | \$ 0.0  | \$ (0.0) |

MKTPRICE.XLS

Summary

15.12312 15.5909 16.16193 17.0024 18.04228 19.26849 20.192119

Duquesne Light Company  
Calculation of Class Energy Weights

| Load Factor   | 76.4%     | 60.0%     | 55.6%   | 40.4%     | 39.3%   | 45.0%     | 35.2%   | 40.3%   | #N/A    | 60.5%     | 50.3%   | 100.0%  | 44.5%   | 81.1%      |              |
|---------------|-----------|-----------|---------|-----------|---------|-----------|---------|---------|---------|-----------|---------|---------|---------|------------|--------------|
|               | L         | GL        | GLH     | GSGM      | GMH     | RS        | RH      | RA      | PIT     | HVPS      | SE      | MTS     | AL      | Total      | On-peak Mask |
| 01/01 00:00   | 135,101   | 229,451   | 42,754  | 198,990   | 51,585  | 406,270   | 70,915  | 2,966   | 1,634   | 64,708    | 7,150   | 1,462   | 3       | 1,211,355  | 0            |
| 01/01 01:00   | 135,445   | 226,072   | 42,288  | 191,721   | 52,044  | 350,335   | 68,414  | 2,538   | 1,470   | 67,019    | 7,150   | 1,462   | 3       | 1,144,491  | 0            |
| 01/01 02:00   | 134,883   | 221,870   | 42,295  | 191,348   | 48,336  | 310,259   | 66,876  | 2,244   | 1,389   | 64,871    | 7,150   | 1,462   | 3       | 1,091,597  | 0            |
| 01/01 03:00   | 134,959   | 219,144   | 41,140  | 182,156   | 50,538  | 286,752   | 66,083  | 2,072   | 1,293   | 68,244    | 7,150   | 1,462   | 3       | 1,059,703  | 0            |
| 01/01 04:00   | 135,194   | 218,622   | 41,171  | 181,835   | 50,510  | 279,800   | 65,159  | 2,021   | 1,223   | 66,831    | 7,150   | 1,462   | 3       | 1,049,758  | 0            |
| 01/01 05:00   | 134,220   | 223,330   | 42,435  | 186,765   | 51,663  | 279,355   | 65,860  | 2,017   | 1,210   | 67,509    | 7,150   | 1,462   | 3       | 1,061,769  | 0            |
| ---           | ---       | ---       | ---     | ---       | ---     | ---       | ---     | ---     | ---     | ---       | ---     | ---     | ---     | ---        | ---          |
| ---           | ---       | ---       | ---     | ---       | ---     | ---       | ---     | ---     | ---     | ---       | ---     | ---     | ---     | ---        | ---          |
| ---           | ---       | ---       | ---     | ---       | ---     | ---       | ---     | ---     | ---     | ---       | ---     | ---     | ---     | ---        | ---          |
| ---           | ---       | ---       | ---     | ---       | ---     | ---       | ---     | ---     | ---     | ---       | ---     | ---     | ---     | ---        | ---          |
| ---           | ---       | ---       | ---     | ---       | ---     | ---       | ---     | ---     | ---     | ---       | ---     | ---     | ---     | ---        | ---          |
| 12/31 18:00   | 159,291   | 287,309   | 54,662  | 263,543   | 53,207  | 596,481   | 62,168  | 8,180   | 2,240   | 150,429   | 7,150   | 1,462   | 4       | 1,643,886  | 1            |
| 12/31 19:00   | 154,448   | 265,084   | 47,791  | 241,328   | 48,960  | 610,312   | 63,638  | 8,435   | 2,153   | 169,287   | 7,150   | 1,462   | 4       | 1,617,899  | 1            |
| 12/31 20:00   | 151,712   | 259,886   | 46,567  | 229,381   | 49,077  | 576,990   | 62,247  | 8,265   | 2,073   | 153,214   | 7,150   | 1,462   | 4       | 1,545,955  | 1            |
| 12/31 21:00   | 151,267   | 254,399   | 44,938  | 226,290   | 48,127  | 543,804   | 62,081  | 8,275   | 1,972   | 159,258   | 7,150   | 1,462   | 4       | 1,507,055  | 0            |
| 12/31 22:00   | 148,480   | 248,596   | 43,143  | 218,521   | 48,176  | 519,396   | 62,346  | 3,796   | 1,943   | 157,053   | 7,150   | 1,462   | 4       | 1,458,123  | 0            |
| 12/31 23:00   | 146,449   | 246,869   | 43,409  | 207,210   | 51,384  | 496,486   | 63,515  | 3,628   | 1,843   | 131,853   | 7,150   | 1,462   | 4       | 1,399,219  | 0            |
| Total (000)   | 1,566,325 | 3,022,960 | 475,327 | 2,854,980 | 354,694 | 3,278,062 | 337,322 | 37,267  | #N/A    | 1,228,345 | 31,567  | 12,842  | 16      | 13,199,707 |              |
| Fall On-peak  | 139,599   | 278,253   | 43,689  | 306,672   | 28,654  | 265,468   | 20,225  | 3,269   | 1,020   | 114,127   | 1,537   | 1,045   | 1       | 1,202,540  |              |
| Fall Off-peak | 251,909   | 462,477   | 67,178  | 371,651   | 55,530  | 482,232   | 48,539  | 5,923   | 1,781   | 200,158   | 6,821   | 2,148   | 4       | 1,954,569  |              |
| Winter On     | 133,020   | 263,515   | 48,725  | 286,619   | 40,824  | 310,565   | 41,360  | 3,022   | 1,224   | 110,530   | 1,809   | 1,045   | 1       | 1,241,034  |              |
| Winter Off    | 239,211   | 434,002   | 78,821  | 355,338   | 83,304  | 557,071   | 92,903  | 5,466   | 2,126   | 199,985   | 7,579   | 2,113   | 4       | 2,055,796  |              |
| Spring On     | 137,470   | 272,307   | 44,355  | 298,969   | 25,577  | 261,797   | 20,906  | 2,921   | 988     | 106,848   | 1,173   | 1,061   | 0       | 1,173,363  |              |
| Spring Off    | 244,784   | 454,039   | 70,129  | 372,501   | 54,478  | 484,838   | 56,762  | 5,527   | 1,810   | 192,793   | 6,285   | 2,167   | 3       | 1,944,305  |              |
| Summer On     | 147,398   | 311,055   | 47,934  | 381,673   | 23,204  | 339,760   | 21,237  | 4,450   | 1,263   | 107,971   | 622     | 1,045   | 0       | 1,386,350  |              |
| Summer Off    | 268,726   | 538,558   | 72,837  | 473,373   | 41,531  | 566,306   | 34,644  | 6,575   | 2,184   | 191,763   | 5,649   | 2,183   | 3       | 2,202,147  |              |
| Total         | 1,562,116 | 3,014,206 | 473,668 | 2,846,796 | 353,102 | 3,268,038 | 336,575 | 37,153  | 12,395  | 1,224,174 | 31,474  | 12,807  | 16      | 13,160,124 |              |
| Feb 29        | 4,209     | 8,753     | 1,659   | 8,185     | 1,592   | 10,024    | 748     | 114     | #N/A    | 4,171     | 93      | 35      | 0       | 39,583     |              |
| Total         | 1,566,325 | 3,022,960 | 475,327 | 2,854,980 | 354,694 | 3,278,062 | 337,322 | 37,267  | #N/A    | 1,228,345 | 31,567  | 12,842  | 16      | 13,199,707 |              |
| WEIGHTS       |           |           |         |           |         |           |         |         |         |           |         |         |         |            |              |
| Fall On-peak  | 0.08937   | 0.09231   | 0.09224 | 0.10773   | 0.08115 | 0.08123   | 0.06009 | 0.08798 | 0.08229 | 0.09323   | 0.04884 | 0.08162 | 0.05519 | 0.09138    |              |
| Fall Off-peak | 0.16126   | 0.15343   | 0.14183 | 0.13055   | 0.15726 | 0.14756   | 0.14421 | 0.15942 | 0.14368 | 0.16350   | 0.21672 | 0.16769 | 0.24488 | 0.14852    |              |
| Winter On     | 0.08515   | 0.08742   | 0.10287 | 0.10068   | 0.11561 | 0.09503   | 0.12288 | 0.08133 | 0.09871 | 0.09029   | 0.05747 | 0.08162 | 0.05435 | 0.09430    |              |
| Winter Off    | 0.15313   | 0.14399   | 0.16640 | 0.12482   | 0.23592 | 0.17046   | 0.27602 | 0.14712 | 0.17152 | 0.16336   | 0.24080 | 0.16495 | 0.22826 | 0.15621    |              |
| Spring On     | 0.08800   | 0.09034   | 0.09364 | 0.10502   | 0.07244 | 0.08011   | 0.06211 | 0.07863 | 0.07972 | 0.08728   | 0.03726 | 0.08288 | 0.03157 | 0.08916    |              |
| Spring Off    | 0.15670   | 0.15063   | 0.14805 | 0.13085   | 0.15428 | 0.14836   | 0.16865 | 0.14877 | 0.14601 | 0.15749   | 0.19968 | 0.16918 | 0.16922 | 0.14774    |              |
| Summer On     | 0.09436   | 0.10320   | 0.10120 | 0.13407   | 0.06572 | 0.10396   | 0.06310 | 0.11979 | 0.10187 | 0.08820   | 0.01976 | 0.08162 | 0.02169 | 0.10534    |              |
| Summer Off    | 0.17203   | 0.17867   | 0.15377 | 0.16628   | 0.11762 | 0.17329   | 0.10293 | 0.17697 | 0.17620 | 0.15685   | 0.17946 | 0.17043 | 0.19483 | 0.16733    |              |
| Total         | 1.00000   | 1.00000   | 1.00000 | 1.00000   | 1.00000 | 1.00000   | 1.00000 | 1.00000 | 1.00000 | 1.00000   | 1.00000 | 1.00000 | 1.00000 | 1.00000    |              |

**Duquesne Light Company**  
**Summary of Estimated CTC Revenue by Rate Class**  
**(\$1000)**

**GRT Rate:** 4.40%  
**Load Growth:** 0.00%  
**Return:** 7.00% 0.583%

| <u>Rate Class</u> | <u>1999</u> | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2004</u> | <u>2005</u> |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Rate RA           | 1,442       | 1,402       | 1,349       | 1,290       | 1,214       | 1,131       | 1,046       |
| Rate RS           | 165,105     | 161,695     | 157,218     | 152,136     | 145,528     | 138,316     | 130,965     |
| Rate RH           | 11,451      | 11,115      | 10,671      | 10,160      | 9,492       | 8,759       | 8,013       |
| Rate GS/GM        | 121,962     | 118,635     | 114,265     | 109,428     | 103,119     | 96,295      | 89,159      |
| Rate GMH          | 11,338      | 10,960      | 10,471      | 9,908       | 9,184       | 8,368       | 7,578       |
| Rate GL           | 88,838      | 85,782      | 81,771      | 77,194      | 71,239      | 64,721      | 58,114      |
| Rate GLH          | 11,785      | 11,268      | 10,593      | 9,830       | 8,839       | 7,760       | 6,650       |
| Rate L            | 31,001      | 29,505      | 27,537      | 25,268      | 22,311      | 19,063      | 15,797      |
| Rate HVPS         | 13,942      | 12,747      | 11,184      | 9,385       | 7,048       | 4,481       | 1,895       |
| Rate AL           | 1           | 1           | 1           | 1           | 1           | 1           | 1           |
| Rate SE           | 830         | 811         | 785         | 751         | 708         | 658         | 614         |
| Rate SM           | 3,877       | 3,856       | 3,828       | 3,791       | 3,744       | 3,689       | 3,641       |
| Rate SH           | 80          | 79          | 78          | 77          | 76          | 75          | 73          |
| Traffic Signals   | 847         | 836         | 821         | 803         | 780         | 754         | 729         |
| Total Retail      | 462,498     | 448,691     | 430,572     | 410,023     | 383,282     | 354,092     | 324,275     |
| Less: GRT         | (20,350)    | (19,742)    | (18,945)    | (18,041)    | (16,864)    | (15,580)    | (14,268)    |
| Net Retail        | 442,148     | 428,949     | 411,627     | 391,982     | 366,418     | 338,512     | 310,007     |
| Load Growth       | -           | -           | -           | -           | -           | -           | -           |
| Net Retail        | 442,148     | 428,949     | 411,627     | 391,982     | 366,418     | 338,512     | 310,007     |
| 1/1/99 NPV        | 425,830     | 385,267     | 344,784     | 306,195     | 266,929     | 229,975     | 196,411     |
| Cumulative        | 425,830     | 811,097     | 1,155,881   | 1,462,076   | 1,729,005   | 1,958,980   | 2,155,391   |
| Beginning Balance | 1,390,089   | 1,033,965   | 665,729     | 288,761     | -95,170     | -480,455    | -864,774    |
| Return            | 86,025      | 60,712      | 34,659      | 8,051       | -18,867     | -45,807     | -72,657     |
| Collection        | -442,148    | -428,949    | -411,627    | -391,982    | -366,418    | -338,512    | -310,007    |
| Ending Balance    | 1,033,965   | 665,729     | 288,761     | -95,170     | -480,455    | -864,774    | -1,247,437  |

**Duquesne Light Company**  
DII Load-weighted Market Prices

|                                   |            | <u>1999</u> | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2004</u> | <u>2005</u> |
|-----------------------------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Market Demand Price               | \$/kW/year | 47.46       | 48.65       | 49.87       | 51.11       | 52.39       | 53.70       | 55.04       |
| Market Energy Prices <sup>1</sup> |            |             |             |             |             |             |             |             |
| Fall On-Peak                      |            | 16.05       | 16.70       | 17.70       | 18.90       | 20.72       | 22.84       | 25.47       |
| Fall Off-peak                     |            | 14.54       | 14.88       | 15.24       | 15.91       | 16.68       | 17.63       | 18.05       |
| Winter On-Peak                    |            | 20.50       | 22.28       | 25.02       | 27.86       | 31.67       | 35.85       | 41.01       |
| Winter Off-Peak                   |            | 16.65       | 17.44       | 18.49       | 19.75       | 21.46       | 23.32       | 25.28       |
| Spring On-Peak                    |            | 15.42       | 15.86       | 16.37       | 17.16       | 18.18       | 19.45       | 20.60       |
| Spring Off-Peak                   |            | 14.43       | 14.77       | 15.10       | 15.69       | 16.39       | 17.22       | 17.48       |
| Summer On-Peak                    |            | 23.45       | 25.44       | 28.49       | 31.08       | 35.06       | 38.78       | 43.46       |
| Summer Off-Peak                   |            | 14.79       | 15.18       | 15.68       | 16.49       | 17.42       | 18.63       | 19.56       |
| Average                           | \$/mWh     | 16.68       | 17.45       | 18.54       | 19.79       | 21.49       | 23.35       | 25.27       |

<sup>1</sup> Load weighted averages based on WPPIL hourly ECAR market clearing prices and Duquesne 1995 EEI Load Deck

**Duquesne Light Company**  
**Computation of Annual Market Costs by Rate Class**  
**Based on DII Market Rates**  
**(\$1000)**

| Rate Class      | CP Demands <sup>1</sup> |           | Customer<br>KWH <sup>2</sup> | Generation<br>KWH <sup>2</sup> | Energy<br>Loss<br>Factor | 1996<br>Sales |
|-----------------|-------------------------|-----------|------------------------------|--------------------------------|--------------------------|---------------|
|                 | February                | August    |                              |                                |                          |               |
|                 | 05 @ 11 AM              | 07 @ 3 PM |                              |                                |                          |               |
| Rate RA         | 5,611                   | 8,788     | 33,848                       | 37,403                         | 1.1050                   | 33,848        |
| Rate RS         | 454,883                 | 633,047   | 2,977,268                    | 3,289,990                      | 1.1050                   | 2,977,268     |
| Rate RH         | 42,022                  | 40,972    | 309,038                      | 341,498                        | 1.1050                   | 309,038       |
| Rate GS/GM      | 529,862                 | 709,284   | 2,621,147                    | 2,872,967                      | 1.0961                   | 2,621,147     |
| Rate GMH        | 87,792                  | 43,379    | 328,256                      | 357,783                        | 1.0900                   | 328,256       |
| Rate GL         | 435,688                 | 528,403   | 2,884,887                    | 3,036,214                      | 1.0525                   | 2,884,887     |
| Rate GLH        | 97,314                  | 84,041    | 455,220                      | 478,317                        | 1.0507                   | 455,220       |
| Rate L          | 198,019                 | 224,273   | 1,509,474                    | 1,563,353                      | 1.0357                   | 1,509,474     |
| Rate HVPS       | 185,548                 | 186,789   | 1,201,824                    | 1,212,841                      | 1.0090                   | 1,201,824     |
| Rate AL         | -                       | -         | 13                           | 14                             | 1.0789                   | 13            |
| Rate SE         | -                       | -         | 28,618                       | 31,624                         | 1.1050                   | 28,618        |
| Rate SM         | -                       | -         | 31,448                       | 34,751                         | 1.1050                   | 31,448        |
| Rate SH         | -                       | -         | 837                          | 925                            | 1.1051                   | 837           |
| Traffic Signals | 1,462                   | 1,462     | 11,639                       | 12,862                         | 1.1051                   | 11,639        |
| Total Retail    | 2,038,200               | 2,480,438 | 12,393,517                   | 13,270,342                     |                          | 12,393,517    |

**Market Rate Revenues**

| Rate Class      | 1999   | 2000   | 2001   | 2002    | 2003    | 2004    | 2005    |
|-----------------|--------|--------|--------|---------|---------|---------|---------|
| Rate RA         | 1,062  | 1,102  | 1,154  | 1,213   | 1,290   | 1,373   | 1,457   |
| Rate RS         | 88,231 | 91,641 | 96,118 | 101,200 | 107,808 | 115,020 | 122,371 |
| Rate RH         | 8,289  | 8,624  | 9,068  | 9,580   | 10,247  | 10,980  | 11,727  |
| Rate GS/GM      | 86,106 | 89,433 | 93,803 | 98,640  | 104,949 | 111,773 | 118,909 |
| Rate GMH        | 9,924  | 10,301 | 10,791 | 11,353  | 12,078  | 12,874  | 13,683  |
| Rate GL         | 80,028 | 83,084 | 87,094 | 91,672  | 97,627  | 104,145 | 110,752 |
| Rate GLH        | 13,508 | 14,025 | 14,700 | 15,463  | 16,453  | 17,533  | 18,642  |
| Rate L          | 38,957 | 40,453 | 42,421 | 44,689  | 47,647  | 50,895  | 54,161  |
| Rate HVPS       | 31,494 | 32,689 | 34,252 | 36,052  | 38,389  | 40,955  | 43,542  |
| Rate AL         | 0      | 0      | 0      | 0       | 0       | 0       | 0       |
| Rate SE         | 519    | 539    | 564    | 598     | 641     | 691     | 735     |
| Rate SM         | 570    | 591    | 619    | 656     | 703     | 758     | 807     |
| Rate SH         | 15     | 16     | 17     | 17      | 19      | 20      | 22      |
| Traffic Signals | 303    | 315    | 330    | 348     | 371     | 397     | 422     |

**GRT Rate:** 4.40%  
**Reserve Margin:** 15.00%

<sup>1</sup> From Filing Requirement Item no. I-3-(a)

<sup>2</sup> From Exhibit JAL-1D, Page 1 of 6

Duquesne Light Company  
 Unbundling Analysis  
 Rate RS

| Revenue Requirement | Revenue Requirement | Less: Fixed  | Rev Req for Unbundling |
|---------------------|---------------------|--------------|------------------------|
| Transmission        | 7,982,100           |              | 7,982,100              |
| Distribution        | 117,065,123         | (37,993,053) | 79,072,070             |

|                              | Units         | Current Rate | Unbundled Transmission | Unbundled Distribution | Embedded Generation Rate Cap | Embedded Generation Rate Cap |             |             |
|------------------------------|---------------|--------------|------------------------|------------------------|------------------------------|------------------------------|-------------|-------------|
| Customer Charge              | 5,955,024     | 6.38         |                        | 6.38                   |                              |                              |             |             |
| All kWh                      | 2,977,128,529 | 0.114769     | 0.002680               | 0.026560               | 0.085529                     | 0.085529                     |             |             |
|                              | Units         | 1999         | 2000                   | 2001                   | 2002                         | 2003                         | 2004        | 2005        |
| Market Generation Rates      |               |              |                        |                        |                              |                              |             |             |
| Market Demand Rate           |               | 0.010860     | 0.011121               | 0.011388               | 0.011662                     | 0.011943                     | 0.012231    | 0.012526    |
| Market Energy Rate           |               | 0.019203     | 0.020088               | 0.021324               | 0.022757                     | 0.024696                     | 0.026830    | 0.029004    |
| Total Market Generation Rate |               | 0.030063     | 0.031209               | 0.032712               | 0.034419                     | 0.036639                     | 0.039061    | 0.041530    |
| CTC Rates                    |               |              |                        |                        |                              |                              |             |             |
| All kWh                      | 2,977,128,529 | 0.05547      | 0.05432                | 0.05282                | 0.05111                      | 0.04889                      | 0.04647     | 0.04400     |
| Estimated CTC Revenues       |               | 165,129,411  | 161,717,622            | 157,242,998            | 152,161,039                  | 145,551,814                  | 138,341,208 | 130,990,678 |
| Less: GRT                    |               | -7,265,694   | -7,115,575             | -6,918,692             | -6,695,086                   | -6,404,280                   | -6,087,013  | -5,763,590  |
| CTC Revenues w/o GRT         |               | 157,863,717  | 154,602,046            | 150,324,306            | 145,465,953                  | 139,147,534                  | 132,254,195 | 125,227,088 |

**Duquesne Light Company**  
**Unbundling Analysis**  
**Rate RS**

|                                 | Units/Weights | 1999       | 2000       | 2001       | 2002       | 2003       | 2004       | 2005       |
|---------------------------------|---------------|------------|------------|------------|------------|------------|------------|------------|
| Market Demand Price             | 543,965       | 47.46      | 48.65      | 49.87      | 51.11      | 52.39      | 53.70      | 55.04      |
| Market Energy Prices            |               |            |            |            |            |            |            |            |
| Fall On-Peak                    | 0.08123       | 16.05      | 16.70      | 17.70      | 18.90      | 20.72      | 22.84      | 25.47      |
| Fall Off-peak                   | 0.14756       | 14.54      | 14.88      | 15.24      | 15.91      | 16.68      | 17.63      | 18.05      |
| Winter On-Peak                  | 0.09503       | 20.50      | 22.28      | 25.02      | 27.86      | 31.87      | 35.85      | 41.01      |
| Winter Off-Peak                 | 0.17046       | 16.65      | 17.44      | 18.49      | 19.75      | 21.46      | 23.32      | 25.28      |
| Spring On-Peak                  | 0.08011       | 15.42      | 15.86      | 16.37      | 17.16      | 18.18      | 19.45      | 20.60      |
| Spring Off-Peak                 | 0.14836       | 14.43      | 14.77      | 15.10      | 15.69      | 16.39      | 17.22      | 17.48      |
| Summer On-Peak                  | 0.10396       | 23.45      | 25.44      | 28.49      | 31.08      | 35.06      | 38.78      | 43.46      |
| Summer Off-Peak                 | 0.17329       | 14.79      | 15.18      | 15.68      | 16.48      | 17.42      | 18.63      | 19.56      |
| Average                         | 2,977,268     | 16.61      | 17.38      | 18.45      | 19.69      | 21.36      | 23.21      | 25.09      |
| Gross Receipts Tax Rate         | 4.40%         |            |            |            |            |            |            |            |
| Reserve Margin                  | 15.00%        |            |            |            |            |            |            |            |
| Energy Loss Factor              | 1.105         |            |            |            |            |            |            |            |
| Market Generation Cost          |               |            |            |            |            |            |            |            |
| Demand Cost                     |               | 31,058,100 | 31,834,553 | 32,630,417 | 33,446,177 | 34,282,332 | 35,139,390 | 36,017,875 |
| Reactive Demand Cost            |               | 1,273,737  | 1,273,737  | 1,273,737  | 1,273,737  | 1,273,737  | 1,273,737  | 1,273,737  |
| Total Demand                    |               | 32,331,838 | 33,108,290 | 33,904,154 | 34,719,914 | 35,556,069 | 36,413,127 | 37,291,612 |
| Market Demand Rate <sup>1</sup> |               | 0.010860   | 0.011121   | 0.011388   | 0.011662   | 0.011943   | 0.012231   | 0.012526   |
| Market Energy Rate <sup>2</sup> |               | 0.019203   | 0.020088   | 0.021324   | 0.022757   | 0.024696   | 0.026830   | 0.029004   |

<sup>1</sup> Market Demand Cost unitized by billing determinants

<sup>2</sup> Weighted Average Market Energy price adjusted for losses and GRT

**Duquesne Light Company**

**Calculation of Revenue  
12 Months ended Dec. 31, 1996**

| <b>Rate RS Units Per Books @</b> | <b>Roll-In Rates</b>            |             |                       |  |
|----------------------------------|---------------------------------|-------------|-----------------------|--|
|                                  | <b>Bills, kWh<br/>or Meters</b> | <b>Rate</b> | <b>Revenue</b>        |  |
| <b>Customer Charges</b>          |                                 |             |                       |  |
| Customer Charge                  | 5,955,305                       | \$ 6.38     | \$ 37,994,846         |  |
| Rider 14 Meter Charge            | 55                              | \$ 1.50     | \$ 83                 |  |
| <b>Energy Charges</b>            |                                 |             |                       |  |
| Regular kWh                      | 2,977,045,069                   | \$ 0.1166   | \$ 347,123,455        |  |
| Metered Heating Rider 14         | 60,228                          | \$ 0.0449   | \$ 2,704              |  |
| Water Heating Rider 19           | 163,700                         | \$ 0.0298   | \$ 4,878              |  |
| <b>Total</b>                     | <b>2,977,268,997</b>            |             | <b>\$ 347,131,038</b> |  |
| <b>Subtotal Revenues</b>         |                                 |             | <b>\$ 385,125,966</b> |  |
| <b>ECR</b>                       | 2,977,268,997                   | \$ (0.0018) | \$ (5,451,380)        |  |
| <b>Total Revenue</b>             |                                 |             | <b>\$ 379,674,586</b> |  |
| <b>Total COSS Revenue</b>        |                                 |             | <b>\$ 379,656,673</b> |  |
| <b>Adjustment Factor</b>         |                                 |             | <b>99.9953%</b>       |  |

| <b>Rate RS Units @ COSS Revenue Levels (w/ECR Roll-in)</b> |                                 |             |                       |  |
|--|---------------------------------|-------------|-----------------------|--|
|  | <b>Bills, kWh<br/>or Meters</b> | <b>Rate</b> | <b>Revenue</b>        |  |
| <b>Customer Charges</b>                                    |                                 |             |                       |  |
| Customer Charge  | 5,955,024                       | \$ 6.38     | \$ 37,993,053         |  |
| Rider 14 Meter Charge                                      | 55                              | \$ 1.50     | \$ 82                 |  |
| <b>Energy Charges</b>                                      |                                 |             |                       |  |
| Regular kWh  | 2,976,904,612                   | \$ 0.1148   | \$ 341,656,365        |  |
| Metered Heating Rider 14                                   | 60,225                          | \$ 0.0431   | \$ 2,594              |  |
| Water Heating Rider 19                                     | 163,692                         | \$ 0.0280   | \$ 4,578              |  |
| <b>Total</b>   | <b>2,977,128,529</b>            |             | <b>\$ 341,663,538</b> |  |
| <b>Total Revenue</b>                                       |                                 |             | <b>\$ 379,656,673</b> |  |

Duquesne Light Company  
 Unbundling Analysis  
 Rate L

| Revenue Requirement | Revenue Requirement | Less: Fixed | Rev Req for Unbundling |
|---------------------|---------------------|-------------|------------------------|
| Transmission        | 3,660,418           |             | 3,660,418              |
| Distribution        | 10,790,798          |             | 10,790,798             |
| Billing Credits     | (146,834)           |             | (146,834)              |

|                          | Units         | Current Rate | Unbundled Transmission | Unbundled Distribution | Embedded Generation Rate Cap |
|--------------------------|---------------|--------------|------------------------|------------------------|------------------------------|
| First 5,000 kW           | 312           | 71,289.00    | 6,728.55               | 19,835.54              | 44,724.91                    |
| Next 10,000 kW           | 1,138,342     | 11.45        | 1.35                   | 3.97                   | 6.13                         |
| Next 25,000 kW           | 21,725        | 11.13        | 1.35                   | 3.97                   | 5.81                         |
| Excess kW                | -             | 10.84        | 1.35                   | 3.97                   | 5.52                         |
| First 750,000+400 kWh/kW | 1,215,882,769 | 0.036169     |                        |                        | 0.036169                     |
| Next 150 kWh per kW      | 234,969,371   | 0.023769     |                        |                        | 0.023769                     |
| Excess kWh               | 58,621,860    | 0.021569     |                        |                        | 0.021569                     |

|                         | 1999     | 2000     | 2001     | 2002     | 2003     | 2004     | 2005     |
|-------------------------|----------|----------|----------|----------|----------|----------|----------|
| Market Generation Rates |          |          |          |          |          |          |          |
| Market Demand Rate      | 4.54     | 4.65     | 4.77     | 4.88     | 5.00     | 5.13     | 5.25     |
| Market Energy Rate      | 0.017820 | 0.018610 | 0.019710 | 0.021010 | 0.022750 | 0.024680 | 0.026620 |

| CTC Rates                | 1999      | 2000      | 2001      | 2002      | 2003       | 2004       | 2005       |
|--------------------------|-----------|-----------|-----------|-----------|------------|------------|------------|
| First 5,000 kW           | 22,014.91 | 21,459.91 | 20,889.91 | 20,309.91 | 19,714.91  | 19,099.91  | 18,474.91  |
| Next 10,000 kW           | 1.59      | 1.48      | 1.36      | 1.25      | 1.13       | 1.01       | 0.88       |
| Next 25,000 kW           | 1.27      | 1.16      | 1.04      | 0.93      | 0.81       | 0.69       | 0.56       |
| Excess kW                | 0.98      | 0.87      | 0.75      | 0.64      | 0.52       | 0.40       | 0.27       |
| First 750,000+400 kWh/kW | 0.018349  | 0.017559  | 0.016459  | 0.015159  | 0.013419   | 0.011489   | 0.009549   |
| Next 150 kWh per kW      | 0.005949  | 0.005159  | 0.004059  | 0.002759  | 0.001019   | (0.000911) | (0.002851) |
| Excess kWh               | 0.003749  | 0.002959  | 0.001859  | 0.000559  | (0.001181) | (0.003111) | (0.005051) |

|                 |           |           |           |           |           |           |           |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Billing Credits | (146,834) | (146,834) | (146,834) | (146,834) | (146,834) | (146,834) | (146,834) |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|

|                         | 1999        | 2000        | 2001        | 2002        | 2003        | 2004        | 2005        |
|-------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Calculated CTC Revenues | 32,484,891  | 30,990,479  | 29,019,970  | 26,742,126  | 23,791,953  | 20,544,100  | 17,275,712  |
| Revenue Adjustment      | (1,488,885) | (1,488,885) | (1,488,885) | (1,488,885) | (1,488,885) | (1,488,885) | (1,488,885) |
| Estimated CTC Revenues  | 30,996,006  | 29,501,594  | 27,531,085  | 25,253,241  | 22,303,068  | 19,055,215  | 15,786,827  |
| Less: GRT               | (1,363,824) | (1,298,070) | (1,211,368) | (1,111,143) | (981,335)   | (838,429)   | (694,620)   |
| CTC Revenues w/o GRT    | 29,632,181  | 28,203,524  | 26,319,717  | 24,142,098  | 21,321,733  | 18,216,786  | 15,092,207  |

Duquesne Light Company  
 Unbundling Analysis  
 Rate L

|   | Units     | 1999       | 2000       | 2001       | 2002       | 2003       | 2004       | 2005       |
|---|-----------|------------|------------|------------|------------|------------|------------|------------|
| Market Demand Price                     | 211       | 47.46      | 48.65      | 49.87      | 51.11      | 52.39      | 53.70      | 55.04      |
| <b>Market Energy Prices</b>             |           |            |            |            |            |            |            |            |
| Fall On-Peak                            | 0.08937   | 16.05      | 16.70      | 17.70      | 18.90      | 20.72      | 22.84      | 25.47      |
| Fall Off-peak                           | 0.16126   | 14.54      | 14.88      | 15.24      | 15.91      | 16.68      | 17.63      | 18.05      |
| Winter On-Peak                          | 0.08515   | 20.50      | 22.28      | 25.02      | 27.86      | 31.67      | 35.85      | 41.01      |
| Winter Off-Peak                         | 0.15313   | 16.65      | 17.44      | 18.49      | 19.75      | 21.46      | 23.32      | 25.28      |
| Spring On-Peak                          | 0.08800   | 15.42      | 15.86      | 16.37      | 17.16      | 18.18      | 19.45      | 20.60      |
| Spring Off-Peak                         | 0.15670   | 14.43      | 14.77      | 15.10      | 15.69      | 16.39      | 17.22      | 17.48      |
| Summer On-Peak                          | 0.09436   | 23.45      | 25.44      | 28.49      | 31.08      | 35.06      | 38.78      | 43.46      |
| Summer Off-Peak                         | 0.17203   | 14.79      | 15.18      | 15.68      | 16.49      | 17.42      | 18.63      | 19.56      |
| Average                                 |           | 16.45      | 17.18      | 18.20      | 19.39      | 21.00      | 22.78      | 24.57      |
| Gross Receipts Tax Rate                 | 4.40%     |            |            |            |            |            |            |            |
| Reserve Margin                          | 15.00%    |            |            |            |            |            |            |            |
| Energy Loss Factor                      | 1.0357    |            |            |            |            |            |            |            |
| <b>Market Generation Cost</b>           |           |            |            |            |            |            |            |            |
| Demand Cost                             |           | 12,055,546 | 12,356,934 | 12,665,858 | 12,982,504 | 13,307,067 | 13,639,743 | 13,980,737 |
| Reactive Demand Cost                    |           | 299,781    | 299,781    | 299,781    | 299,781    | 299,781    | 299,781    | 299,781    |
| Total Demand                            |           | 12,355,327 | 12,656,716 | 12,965,639 | 13,282,286 | 13,606,848 | 13,939,525 | 14,280,518 |
| Market Demand Rate <sup>1</sup>         | 2,720,067 | 4.542      | 4.653      | 4.767      | 4.883      | 5.002      | 5.125      | 5.250      |
| <b>Market Energy Rates <sup>2</sup></b> |           |            |            |            |            |            |            |            |
| Average                                 |           | 0.01782    | 0.01861    | 0.01971    | 0.02101    | 0.02275    | 0.02468    | 0.02662    |
|   |           | 38,954,372 |            |            |            |            |            |            |

<sup>1</sup> Market Demand Cost utilized by billing determinants

<sup>2</sup> Weighted Average Market Energy price adjusted for losses and GRT

**Duquesne Light Company**

**Calculation of Revenue  
12 Months ended Dec. 31, 1996**

| <b>Rate L Units Per Books @ Roll-In Rates</b> |                                     |              |                    | <b>Rate L Units @ COSS Revenue Levels (w/ECR Roll-in)</b> |   |              |                    |
|---|-------------------------------------|--------------|--------------------|---|---|--------------|--------------------|
|   | <b>Bills, kW, kWh<br/>or Meters</b> | <b>Rate</b>  | <b>Revenue</b>     |   | <b>100.00%<br/>Bills, kW, kWh<br/>or Meters</b> | <b>Rate</b>  | <b>Revenue</b>     |
| <b>Fixed Charge</b>                           |                                     |              |                    | <b>Fixed Charge</b>                                       |   |              |                    |
| First 5000 kW                                 | 312                                 | \$ 71,289.00 | \$ 22,242,168      | First 5000 kW   | 312   | \$ 71,289.00 | \$ 22,242,168      |
| <b>Demand Charges</b>                         |                                     |              |                    | <b>Demand Charges</b>                                     |   |              |                    |
| Next 10,000 kW                                | 1,138,342                           | \$ 11.45     | \$ 13,034,012      | Next 10,000 kW  | 1,138,342                                       | \$ 11.45     | \$ 13,034,012      |
| Next 25,000 kW                                | 21,725                              | \$ 11.13     | \$ 241,797         | Next 25,000 kW  | 21,725  | \$ 11.13     | \$ 241,797         |
| Excess kW                                     | 0                                   | \$ 10.84     | \$ -               | Excess kW   | 0   | \$ 10.84     | \$ -               |
| <b>Total Variable kW</b>                      | <b>1,160,067</b>                    |              | <b>13,275,809</b>  | <b>Total Variable kW</b>                                  | <b>1,160,067</b>                                |              | <b>13,275,809</b>  |
| <b>Energy Charges</b>                         |                                     |              |                    | <b>Energy Charges</b>                                     |   |              |                    |
| First 750,000+400 kWh per kW                  | 1,215,882,769                       | \$ 0.0380    | \$ 46,203,545      | First 750,000+400 kWh per kW                              | 1,215,882,769                                   | \$ 0.0362    | \$ 43,977,264      |
| Next 150 kWh per kW                           | 234,969,371                         | \$ 0.0256    | \$ 6,015,216       | Next 150 kWh per kW                                       | 234,969,371                                     | \$ 0.0238    | \$ 5,584,987       |
| Excess kWh                                    | 58,621,860                          | \$ 0.0234    | \$ 1,371,752       | Excess kWh  | 58,621,860                                      | \$ 0.0216    | \$ 1,264,415       |
| <b>Total kWh</b>                              | <b>1,509,474,000</b>                |              | <b>53,590,513</b>  | <b>Total kWh</b>  | <b>1,509,474,000</b>                            |              | <b>50,826,666</b>  |
| U.T.C Credit                                  |                                     |              | 0                  | U.T.C Credit  |   |              | 0                  |
| Rider 8 discounts                             |                                     |              | (146,834)          | Rider 8 discounts   |   |              | (146,834)          |
| Rider 9 discounts                             |                                     |              | 0                  | Rider 9 discounts   |   |              | 0                  |
| <b>Subtotal Revenues</b>                      |                                     |              | <b>88,961,656</b>  |   |   |              |                    |
| ECR   | 1,509,474,000                       | \$ (0.0018)  | \$ (2,763,847)     |   |   |              |                    |
| <b>Total Revenues</b>                         |                                     |              | <b>86,197,809</b>  | <b>Total Revenues</b>                                     |   |              | <b>86,197,809</b>  |
| <b>Total COSS Revenue</b>                     |                                     |              | <b>84,708,924</b>  | <b>Revenue Adjustment</b>                                 |   |              | <b>(1,488,885)</b> |
| <b>Revenue Adjustment</b>                     |                                     |              | <b>(1,488,885)</b> | <b>Total Revenues</b>                                     |   | <b>\$</b>    | <b>84,708,924</b>  |

Duquesne Light Company  
 Unbundling Analysis  
 Rate HVPS

| Revenue Requirement | Revenue Requirement | Less: Fixed | Rev Req for Unbundling |
|---------------------|---------------------|-------------|------------------------|
| Transmission        | 2,427,677           |             | 2,427,677              |
| Distribution        | 3,408,061           |             | 3,408,061              |
| Billing Credits     | (1,769,520)         |             | (1,769,520)            |

|                                     | Units       | Current Rate | Unbundled Transmission | Unbundled Distribution | Embedded Generation Rate Cap |             |             |
|-------------------------------------|-------------|--------------|------------------------|------------------------|------------------------------|-------------|-------------|
| First 30,000 kW                     | 36          | 330,536.00   | 41,143.21              | 57,758.32              | 231,634.47                   |             |             |
| Excess kW                           | 690,166     | 11.92        | 1.37                   | 1.93                   | 8.62                         |             |             |
| On-peak kWh                         | 315,164,863 | 0.041469     |                        |                        | 0.041469                     |             |             |
| Off-peak kWh                        | 703,225,572 | 0.020269     |                        |                        | 0.020269                     |             |             |
|                                     | 1999        | 2000         | 2001                   | 2002                   | 2003                         | 2004        | 2005        |
| Market Generation Rates             |             |              |                        |                        |                              |             |             |
| Market Demand Rate                  | 5.20        | 5.33         | 5.46                   | 5.59                   | 5.73                         | 5.87        | 6.01        |
| Market Energy Rates                 |             |              |                        |                        |                              |             |             |
| On-peak                             | 0.019880    | 0.021160     | 0.023080               | 0.025040               | 0.027840                     | 0.030820    | 0.034420    |
| Off-peak                            | 0.015950    | 0.016440     | 0.017040               | 0.017920               | 0.019010                     | 0.020280    | 0.021240    |
| CTC Rates                           |             |              |                        |                        |                              |             |             |
| First 30,000 kW                     | 75,634.47   | 71,824.47    | 67,894.47              | 63,904.47              | 59,794.47                    | 55,564.47   | 51,274.47   |
| Excess kW                           | 3.42        | 3.29         | 3.16                   | 3.03                   | 2.89                         | 2.75        | 2.61        |
| On-peak kWh                         | 0.021589    | 0.020309     | 0.018389               | 0.016429               | 0.013629                     | 0.010649    | 0.007049    |
| Off-peak kWh                        | 0.004319    | 0.003829     | 0.003229               | 0.002349               | 0.001259                     | (0.000021)  | (0.000971)  |
| Billing Credits                     | (1,769,520) | (1,769,520)  | (1,769,520)            | (1,769,520)            | (1,769,520)                  | (1,769,520) | (1,769,520) |
|                                     | 1999        | 2000         | 2001                   | 2002                   | 2003                         | 2004        | 2005        |
| Estimated CTC Revenues <sup>1</sup> | 13,155,015  | 12,182,213   | 10,923,269             | 9,451,275              | 7,559,785                    | 5,470,872   | 3,415,080   |
| Less: GRT                           | (578,821)   | (536,017)    | (480,624)              | (415,856)              | (332,631)                    | (240,718)   | (150,264)   |
| CTC Revenues w/o GRT                | 12,576,195  | 11,646,195   | 10,442,645             | 9,035,419              | 7,227,155                    | 5,230,153   | 3,264,816   |

<sup>1</sup> Does not include any CTC revenue from unbundling of Alternative Generation or Special Contracts

Duquesne Light Company  
 Unbundling Analysis  
 Rate HVPS

|   | Units     | 1999      | 2000      | 2001      | 2002      | 2003       | 2004       | 2005       |
|---|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| Market Demand Price <sup>1</sup>        | 158       | 47.46     | 48.65     | 49.87     | 51.11     | 52.39      | 53.70      | 55.04      |
| <b>Market Energy Prices</b>             |           |           |           |           |           |            |            |            |
| Fall On-Peak                            | 0.09323   | 16.05     | 16.70     | 17.70     | 18.90     | 20.72      | 22.84      | 25.47      |
| Fall Off-peak                           | 0.16350   | 14.54     | 14.88     | 15.24     | 15.91     | 16.68      | 17.63      | 18.05      |
| Winter On-Peak                          | 0.09029   | 20.50     | 22.28     | 25.02     | 27.86     | 31.87      | 35.85      | 41.01      |
| Winter Off-Peak                         | 0.16336   | 16.65     | 17.44     | 18.49     | 19.75     | 21.46      | 23.32      | 25.28      |
| Spring On-Peak                          | 0.08728   | 15.42     | 15.86     | 16.37     | 17.16     | 18.18      | 19.45      | 20.60      |
| Spring Off-Peak                         | 0.15749   | 14.43     | 14.77     | 15.10     | 15.69     | 16.39      | 17.22      | 17.48      |
| Summer On-Peak                          | 0.08820   | 23.45     | 25.44     | 28.49     | 31.08     | 35.06      | 38.78      | 43.46      |
| Summer Off-Peak                         | 0.15665   | 14.79     | 15.18     | 15.68     | 16.49     | 17.42      | 18.63      | 19.56      |
| On-peak Average <sup>2</sup>            | 0.35900   | 18.84     | 20.05     | 21.87     | 23.72     | 26.38      | 29.20      | 32.62      |
| Off-peak Average <sup>2</sup>           | 0.64100   | 15.11     | 15.58     | 16.14     | 16.98     | 18.01      | 19.22      | 20.12      |
| Average                                 |           | 16.45     | 17.18     | 18.20     | 19.40     | 21.01      | 22.81      | 24.81      |
| <br>                                    |           |           |           |           |           |            |            |            |
| Gross Receipts Tax Rate                 | 4.40%     |           |           |           |           |            |            |            |
| Reserve Margin                          | 15.00%    |           |           |           |           |            |            |            |
| Energy Loss Factor                      | 1.0090    |           |           |           |           |            |            |            |
| <br>                                    |           |           |           |           |           |            |            |            |
| <b>Market Generation Cost</b>           |           |           |           |           |           |            |            |            |
| Demand Cost                             |           | 9,007,071 | 9,232,248 | 9,463,054 | 9,699,631 | 9,942,121  | 10,190,674 | 10,445,441 |
| Reactive Demand Cost                    |           | 197,641   | 197,641   | 197,641   | 197,641   | 197,641    | 197,641    | 197,641    |
| Total Demand                            |           | 9,204,712 | 9,429,889 | 9,660,695 | 9,897,271 | 10,139,762 | 10,388,315 | 10,643,082 |
| Market Demand Rate <sup>3</sup>         | 1,770,166 | 5.200     | 5.327     | 5.458     | 5.591     | 5.728      | 5.869      | 6.012      |
| <br>                                    |           |           |           |           |           |            |            |            |
| <b>Market Energy Rates <sup>4</sup></b> |           |           |           |           |           |            |            |            |
| On-peak Average                         |           | 0.01988   | 0.02116   | 0.02308   | 0.02504   | 0.02784    | 0.03082    | 0.03442    |
| Off-peak Average                        |           | 0.01595   | 0.01644   | 0.01704   | 0.01792   | 0.01801    | 0.02029    | 0.02124    |

<sup>1</sup> HVPS 2 CP reduced to remove alternative generation & special  
<sup>2</sup> Based on on-peak period of 10 AM to 9 PM Monday through Friday  
<sup>3</sup> Market Demand Cost unitized by billing determinants  
<sup>4</sup> Weighted Average Market Energy price adjusted for losses and GRT

**Duquesne Light Company**

**Calculation of Revenue  
12 Months ended Dec. 31, 1996**

| <b>Rate HVPS Units Per Books @ Roll-In Rates</b> |                         |              |                      | <b>Rate HVPS Units @ COSS Revenue Levels (w/ECR Roll-in)</b> |                        |              |                      |
|--|-------------------------|--------------|----------------------|--|------------------------|--------------|----------------------|
|  | <b>Bills, kW or kWh</b> | <b>Rate</b>  | <b>Revenue</b>       |  | <b>Bills, kW or kW</b> | <b>Rate</b>  | <b>Revenue</b>       |
| <b><u>Demand Charges</u></b>                     |                         |              |                      | <b><u>Demand Charges</u></b>                                 |                        |              |                      |
| Fixed Charge-First 30,000 kW                     | 36                      | \$330,536.00 | \$ 11,899,296        | Fixed Charge-First 30,000 kW                                 | 36                     | \$330,536.00 | \$ 11,899,296        |
| <br>   |                         |              |                      | <br>   |                        |              |                      |
| <b><u>Demand Charges</u></b>                     |                         |              |                      | <b><u>Demand Charges</u></b>                                 |                        |              |                      |
| Excess kW  | 690,166.40              | \$11.92      | \$ 8,226,783         | Excess kW  | 690,166.40             | \$11.92      | \$ 8,226,783         |
| <b>Total</b>                                     |                         |              | <b>20,126,079</b>    | <b>Total</b>   |                        |              | <b>20,126,079</b>    |
| <br>   |                         |              |                      | <br>   |                        |              |                      |
| <b><u>Energy Charges</u></b>                     |                         |              |                      | <b><u>Energy Charges</u></b>                                 |                        |              |                      |
| On peak kWh                                      | 315,164,863             | \$0.0433     | \$ 13,646,639        | On peak kWh  | 315,164,863            | \$0.041469   | \$ 13,069,572        |
| Off peak kWh                                     | 703,225,572             | \$0.0221     | \$ 15,541,285        | Off peak kWh   | 703,225,572            | \$0.020269   | \$ 14,253,679        |
| <b>Total</b>                                     | <b>1,018,390,435</b>    |              | <b>\$ 29,187,924</b> | <b>Total</b>   | <b>1,018,390,435</b>   |              | <b>\$ 27,323,251</b> |
| <br>   |                         |              |                      | <br>   |                        |              |                      |
| Interruptible Service Credit kW                  | 876,000                 | (\$2.02)     | \$ (1,769,520)       | Interruptible Service Credit kW                              | 876,000                | (\$2.02)     | \$ (1,769,520)       |
| <br>   |                         |              |                      | <br>   |                        |              |                      |
| <b>Subtotal Revenues</b>                         |                         |              | <b>\$ 47,544,483</b> | <b>Total Revenues</b>  |                        |              | <b>\$ 45,679,810</b> |
| <br>   |                         |              |                      | <br>   |                        |              |                      |
| ECR  | 1,018,390,435           | (\$0.001831) | \$ (1,864,673)       |  |                        |              |                      |
| <br>   |                         |              |                      | <br>   |                        |              |                      |
| <b>Total Revenue</b>                             |                         |              | <b>\$ 45,679,810</b> |  |                        |              |                      |
| Generation Avoidance kWh                         | 55,034,433              |              | \$ 2,477,140         |  |                        |              |                      |
| Special  | 128,399,132             |              | \$ 3,655,285         |  |                        |              |                      |
| Related ECR                                      | 183,433,565             | (\$0.001831) | \$ (335,867)         |  |                        |              |                      |
| Related STAS Roll-in                             |                         | -0.6843%     | \$ (41,964)          |  |                        |              |                      |
| <b>Total Revenue</b>                             |                         |              | <b>\$ 51,434,404</b> |  |                        |              |                      |
| <b>Total COSS Revenue</b>                        |                         |              | <b>51,469,797</b>    |  |                        |              |                      |
| <b>Revenue Adjustment</b>                        |                         |              | <b>35,393</b>        |  |                        |              |                      |

**ADJUSTED COST OF SERVICE STUDY  
(1996)**

|  | Total<br>Utility         | FERC<br>N/R/S        | PA PUC<br>N/R/S          | RA                   | FS                     | RM                    | GS/SM                  | GMH                   | GL                     | GAH                   | L                      | HVPS                   | AL               | SE                    | SM                    | SH                 | IRAFIK<br>SIGNALS    |
|--|--------------------------|----------------------|--------------------------|----------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|------------------------|------------------|-----------------------|-----------------------|--------------------|----------------------|
| <b>Electric Plant In Service</b>                 |                          |                      |                          |                      |                        |                       |                        |                       |                        |                       |                        |                        |                  |                       |                       |                    |                      |
| (1) Production Plant                             | \$2,366,398,721          | \$2,309,085          | \$2,364,089,836          | \$8,371,583          | \$668,582,339          | \$82,849,039          | \$595,660,714          | \$69,243,606          | \$464,055,186          | \$80,889,437          | \$195,238,257          | \$185,071,708          | \$3,259          | \$3,987,865           | \$6,380,681           | \$175,043          | \$1,380,913          |
| (2) Transmission Plant                           | 312,186,756              | 294,078              | 311,892,678              | 847,900              | 73,091,533             | 6,359,087             | 81,814,322             | 7,900,816             | 64,336,635             | 11,324,125            | 40,848,332             | 24,789,158             | 90               | 173,099               | 190,218               | 5,061              | 212,303              |
| (3) Distribution Plant                           | 1,233,225,730            | 352,922              | 1,232,865,738            | 4,411,052            | 473,866,599            | 42,042,539            | 313,302,216            | 37,919,335            | 125,090,812            | 26,820,438            | 83,275,511             | 11,275,923             | 1,748            | 18,384,998            | 41,298,065            | 289,163            | 906,610              |
| <b>Total</b>                                     | <b>\$3,911,811,207</b>   | <b>\$2,963,155</b>   | <b>\$3,908,848,052</b>   | <b>\$13,630,535</b>  | <b>\$1,215,570,471</b> | <b>\$131,250,665</b>  | <b>\$990,777,951</b>   | <b>\$115,063,757</b>  | <b>\$703,482,638</b>   | <b>\$119,034,000</b>  | <b>\$321,367,100</b>   | <b>\$221,136,789</b>   | <b>\$5,008</b>   | <b>\$24,545,960</b>   | <b>\$48,068,964</b>   | <b>\$489,271</b>   | <b>\$2,499,834</b>   |
| <b>General &amp; Intangible Plant</b>            |                          |                      |                          |                      |                        |                       |                        |                       |                        |                       |                        |                        |                  |                       |                       |                    |                      |
| Production Plant                                 | 174,057,999              | 169,842              | 173,888,156              | 615,763              | 49,176,879             | 6,093,875             | 43,813,203             | 5,093,141             | 34,133,097             | 5,949,739             | 14,360,547             | 13,612,757             | 240              | 440,431               | 484,035               | 12,875             | 101,572              |
| Transmission Plant                               | 6,865,279                | 6,467                | 6,858,812                | 18,646               | 1,607,351              | 139,842               | 1,799,174              | 173,746               | 1,414,823              | 249,028               | 898,293                | 545,137                | 2                | 3,807                 | 4,183                 | 111                | 4,669                |
| Distribution Plant                               | 108,421,204              | 31,442               | 108,389,762              | 387,803              | 41,834,899             | 3,696,245             | 27,544,576             | 3,333,243             | 15,393,416             | 2,357,966             | 7,492,166              | 991,343                | 154              | 1,614,349             | 3,630,792             | 25,422             | 79,707               |
| <b>(4) TOTAL GENERAL &amp; INTANGIBLE PLANT</b>  | <b>289,344,483</b>       | <b>207,751</b>       | <b>289,136,730</b>       | <b>1,022,212</b>     | <b>92,619,119</b>      | <b>9,929,963</b>      | <b>73,156,954</b>      | <b>8,600,633</b>      | <b>\$6,941,356</b>     | <b>8,556,732</b>      | <b>22,755,986</b>      | <b>15,149,237</b>      | <b>395</b>       | <b>2,060,587</b>      | <b>4,119,010</b>      | <b>38,409</b>      | <b>183,947</b>       |
| <b>Electric Plant In Service</b>                 |                          |                      |                          |                      |                        |                       |                        |                       |                        |                       |                        |                        |                  |                       |                       |                    |                      |
| Total Production Plant                           | 2,540,456,720            | 2,478,928            | 2,537,977,792            | 8,987,346            | 717,759,219            | 88,942,914            | 639,473,919            | 74,336,747            | 498,188,283            | 86,839,176            | 209,598,804            | 198,684,465            | 3,499            | 6,428,296             | 7,064,716             | 187,920            | 1,487,481            |
| Total Transmission Plant                         | 319,032,035              | 300,545              | 318,751,491              | 866,546              | 74,698,884             | 6,498,929             | 83,613,495             | 8,074,563             | 65,751,458             | 11,573,153            | 41,746,625             | 23,334,295             | 92               | 176,906               | 194,401               | 5,172              | 218,671              |
| Total Distribution Plant                         | 1,311,648,934            | 392,641              | 1,311,255,293            | 4,798,858            | 517,662,488            | 45,238,604            | 340,817,492            | 41,253,080            | 190,484,233            | 29,178,404            | 92,773,657             | 12,267,366             | 1,901            | 20,001,343            | 44,928,852            | 314,587            | 968,337              |
| <b>TOTAL ELECTRIC PLANT IN SERVICE (1+2+3+4)</b> | <b>\$4,201,135,690</b>   | <b>\$3,171,113</b>   | <b>\$4,197,984,576</b>   | <b>\$14,652,750</b>  | <b>\$1,310,139,591</b> | <b>\$141,180,448</b>  | <b>\$1,063,934,906</b> | <b>\$123,664,389</b>  | <b>\$754,423,974</b>   | <b>\$127,590,733</b>  | <b>\$344,118,086</b>   | <b>\$236,286,023</b>   | <b>\$5,492</b>   | <b>\$26,606,547</b>   | <b>\$52,187,974</b>   | <b>\$307,600</b>   | <b>\$2,683,781</b>   |
| <b>Accumulated Depreciation</b>                  |                          |                      |                          |                      |                        |                       |                        |                       |                        |                       |                        |                        |                  |                       |                       |                    |                      |
| (1) Production Plant                             | (\$1,081,527,382)        | (\$1,055,406)        | (\$1,080,471,976)        | (\$3,823,617)        | (\$305,445,345)        | (\$37,832,824)        | (\$272,115,603)        | (\$31,638,732)        | (\$212,201,560)        | (\$36,975,615)        | (\$89,352,159)         | (\$44,629,410)         | (\$1,489)        | (\$2,736,148)         | (\$3,007,034)         | (\$7,998)          | (\$6,324,411)        |
| (2) Transmission Plant                           | (117,690,602)            | (110,619)            | (117,579,983)            | (3,181,941)          | (27,493,701)           | (2,391,999)           | (30,770,993)           | (2,971,927)           | (24,200,508)           | (4,259,619)           | (15,629,280)           | (9,374,551)            | (34)             | (65,112)              | (71,551)              | (1,904)            | (7,834)              |
| (3) Distribution Plant                           | (386,407,968)            | (105,215)            | (386,302,753)            | (1,364,462)          | (151,298,894)          | (12,893,821)          | (96,134,088)           | (11,412,068)          | (50,884,899)           | (2,850,365)           | (23,993,899)           | (3,367,340)            | (534)            | (8,141,988)           | (18,583,245)          | (92,481)           | (24,651)             |
| <b>Total</b>                                     | <b>(1,585,625,952)</b>   | <b>(1,271,239)</b>   | <b>(1,584,354,713)</b>   | <b>(6,309,020)</b>   | <b>(484,237,941)</b>   | <b>(53,118,644)</b>   | <b>(399,020,684)</b>   | <b>(46,022,727)</b>   | <b>(287,286,967)</b>   | <b>(44,085,600)</b>   | <b>(128,972,144)</b>   | <b>(27,321,301)</b>    | <b>(2,057)</b>   | <b>(10,943,248)</b>   | <b>(21,661,830)</b>   | <b>(124,373)</b>   | <b>(19,165,946)</b>  |
| <b>General &amp; Intangible Plant</b>            |                          |                      |                          |                      |                        |                       |                        |                       |                        |                       |                        |                        |                  |                       |                       |                    |                      |
| Production Plant                                 | (65,952,768)             | (64,355)             | (65,888,413)             | (233,320)            | (18,633,739)           | (2,309,046)           | (16,601,375)           | (1,929,855)           | (12,933,460)           | (2,254,431)           | (5,441,392)            | (5,158,045)            | (91)             | (166,885)             | (183,407)             | (4,879)            | (38,487)             |
| Transmission Plant                               | (7,601,341)              | (7,467)              | (7,598,890)              | (7,045)              | (609,044)              | (52,988)              | (681,729)              | (65,835)              | (536,094)              | (94,360)              | (340,375)              | (208,559)              | (1)              | (1,442)               | (1,583)               | (42)               | (1,757)              |
| Distribution Plant                               | (41,082,168)             | (11,292)             | (41,070,896)             | (1,864,944)          | (11,831,766)           | (1,498,354)           | (10,836,982)           | (1,283,188)           | (6,937,759)            | (893,463)             | (2,842,763)            | (3,632,632)            | (58)             | (612,453)             | (1,375,753)           | (9,633)            | (30,707)             |
| <b>(5) TOTAL GENERAL &amp; INTANGIBLE PLANT</b>  | <b>(109,636,277)</b>     | <b>(83,114)</b>      | <b>(109,557,219)</b>     | <b>(3,105,309)</b>   | <b>(20,074,549)</b>    | <b>(2,814,488)</b>    | <b>(27,522,092)</b>    | <b>(3,279,088)</b>    | <b>(19,507,314)</b>    | <b>(3,248,254)</b>    | <b>(8,622,330)</b>     | <b>(9,009,237)</b>     | <b>(149)</b>     | <b>(1,781,780)</b>    | <b>(1,960,743)</b>    | <b>(14,550)</b>    | <b>(40,951)</b>      |
| <b>Accumulated Depreciation</b>                  |                          |                      |                          |                      |                        |                       |                        |                       |                        |                       |                        |                        |                  |                       |                       |                    |                      |
| Total Production Plant                           | (1,147,480,150)          | (1,119,761)          | (1,146,360,389)          | (4,056,937)          | (324,079,084)          | (40,141,870)          | (288,716,978)          | (33,568,587)          | (225,135,020)          | (39,230,040)          | (94,793,551)           | (89,787,455)           | (1,579)          | (2,903,033)           | (3,190,441)           | (84,865)           | (67,041)             |
| Total Transmission Plant                         | (120,291,943)            | (113,069)            | (120,178,874)            | (326,006)            | (26,192,743)           | (2,444,987)           | (31,452,722)           | (3,037,761)           | (24,736,602)           | (4,353,979)           | (15,969,661)           | (9,531,118)            | (35)             | (66,554)              | (73,136)              | (1,946)            | (2,678)              |
| Total Distribution Plant                         | (427,490,178)            | (117,207)            | (427,372,921)            | (1,511,411)          | (167,150,662)          | (14,294,375)          | (106,971,085)          | (12,675,266)          | (56,717,659)           | (8,743,828)           | (26,836,662)           | (3,243,172)            | (592)            | (8,754,443)           | (19,958,997)          | (102,114)          | (32,851)             |
| <b>TOTAL ACCUMULATED DEPRECIATION (1+2+3+4)</b>  | <b>(\$1,695,262,271)</b> | <b>(\$1,350,037)</b> | <b>(\$1,693,912,184)</b> | <b>(\$5,894,354)</b> | <b>(\$519,332,493)</b> | <b>(\$56,881,233)</b> | <b>(\$426,740,785)</b> | <b>(\$49,281,615)</b> | <b>(\$306,569,781)</b> | <b>(\$52,327,854)</b> | <b>(\$132,599,674)</b> | <b>(\$103,061,237)</b> | <b>(\$2,007)</b> | <b>(\$11,724,031)</b> | <b>(\$23,222,574)</b> | <b>(\$188,925)</b> | <b>(\$1,063,471)</b> |
| <b>Net Allocated Plant</b>                       |                          |                      |                          |                      |                        |                       |                        |                       |                        |                       |                        |                        |                  |                       |                       |                    |                      |
| (1) Production Plant                             | \$1,284,871,339          | \$1,253,679          | \$1,283,617,660          | \$4,547,967          | \$363,136,995          | \$45,016,215          | \$323,545,111          | \$37,604,874          | \$251,853,626          | \$43,913,822          | \$105,806,098          | \$100,442,297          | \$1,771          | \$3,251,717           | \$4,377,279           | \$173,068          | \$748,461            |
| (2) Transmission Plant                           | 194,486,154              | 183,459              | 194,312,695              | 528,959              | 45,597,832             | 3,967,089             | 51,043,329             | 4,928,889             | 40,136,127             | 7,064,506             | 25,219,045             | 15,464,607             | 56               | 107,987               | 118,667               | 3,157              | 132,444              |
| (3) Distribution Plant                           | 846,817,262              | 256,272              | 846,562,985              | 3,046,585            | 324,547,709            | 29,148,232            | 212,168,818            | 26,507,262            | 126,205,918            | 18,970,073            | 61,279,812             | 7,908,383              | 1,214            | 10,243,008            | 22,714,820            | 196,684            | 623,963              |
| <b>Total</b>                                     | <b>2,326,185,255</b>     | <b>1,691,915</b>     | <b>2,324,493,340</b>     | <b>8,123,511</b>     | <b>733,282,536</b>     | <b>78,132,041</b>     | <b>\$91,757,258</b>    | <b>69,041,030</b>     | <b>\$168,195,671</b>   | <b>\$69,948,400</b>   | <b>\$239,335,155</b>   | <b>\$223,915,287</b>   | <b>\$3,041</b>   | <b>\$13,602,712</b>   | <b>\$26,407,134</b>   | <b>\$274,809</b>   | <b>\$1,504,868</b>   |
| <b>General &amp; Intangible Plant</b>            |                          |                      |                          |                      |                        |                       |                        |                       |                        |                       |                        |                        |                  |                       |                       |                    |                      |
| Production Plant                                 | 108,105,230              | 105,487              | 107,999,743              | 382,443              | 30,543,140             | 3,784,829             | 27,211,830             | 3,163,286             | 21,199,637             | 3,695,308             | 8,919,153              | 8,454,712              | 149              | 273,546               | 441,628               | 1,997              | 63,183               |
| Transmission Plant                               | 4,263,939                | 4,017                | 4,259,922                | 11,581               | 998,306                | 86,854                | 1,117,444              | 107,912               | 878,729                | 154,668               | 557,919                | 338,578                | 1                | 2,364                 | 2,598                 | 49                 | 2,981                |
| Distribution Plant                               | 67,339,044               | 19,657               | 67,319,387               | 240,861              | 25,983,122             | 2,295,691             | 17,107,589             | 2,070,547             | 9,560,657              | 1,464,303             | 4,656,383              | 613,710                | 93               | 1,003,894             | 2,253,039             | 13,790             | 49,503               |
| <b>(6) TOTAL GENERAL &amp; INTANGIBLE PLANT</b>  | <b>179,708,213</b>       | <b>129,161</b>       | <b>179,579,052</b>       | <b>634,885</b>       | <b>\$7,524,568</b>     | <b>6,167,375</b>      | <b>\$45,436,863</b>    | <b>\$3,341,745</b>    | <b>\$31,639,022</b>    | <b>\$3,314,279</b>    | <b>\$14,133,437</b>    | <b>\$9,409,000</b>     | <b>240</b>       | <b>\$1,279,805</b>    | <b>\$2,708,265</b>    | <b>\$2,036</b>     | <b>\$73,667</b>      |

**ADJUSTED COST OF SERVICE STUDY  
(1996)**

|  | Total<br>Utility       | FERC<br>JURIS.     | PA PUC<br>JURIS.       | RA                 | RS                   | RH                  | GS(GM)               | GMH                 | GL                   | GMJ                 | L                    | HYPS                 | AL             | SE                  | SM                  | SH               | TRAFFIC<br>SIGNALS |
|--|------------------------|--------------------|------------------------|--------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|----------------------|----------------|---------------------|---------------------|------------------|--------------------|
| <b>Net Allocated Plant</b>                           |                        |                    |                        |                    |                      |                     |                      |                     |                      |                     |                      |                      |                |                     |                     |                  |                    |
| Production Plant                                     | 1,392,976,569          | 1,359,166          | 1,391,617,403          | 4,930,409          | 393,680,135          | 48,801,044          | 350,756,941          | 40,768,160          | 273,053,263          | 47,609,130          | 114,805,253          | 108,897,009          | 1,920          | 3,525,263           | 3,974,275           | 103,055          | 811,546            |
| Transmission Plant                                   | 198,760,093            | 187,476            | 198,572,617            | 340,539            | 46,396,138           | 4,033,943           | 52,160,773           | 5,036,801           | 41,014,856           | 7,219,174           | 25,776,964           | 15,803,185           | 58             | 110,351             | 121,265             | 3,226            | 135,344            |
| Distribution Plant                                   | 914,156,806            | 274,434            | 913,882,372            | 3,287,446          | 320,530,826          | 31,444,429          | 234,276,407          | 28,577,814          | 133,766,525          | 20,436,523          | 65,936,193           | 8,524,094            | 1,309          | 11,246,902          | 24,989,860          | 212,423          | 673,668            |
| <b>TOTAL NET ALLOCATED PLANT (1+2+3+4)</b>           | <b>\$2,505,893,468</b> | <b>\$1,821,076</b> | <b>\$2,504,072,392</b> | <b>\$8,758,395</b> | <b>\$790,607,099</b> | <b>\$84,299,416</b> | <b>\$637,194,121</b> | <b>\$74,382,774</b> | <b>\$447,834,694</b> | <b>\$75,262,829</b> | <b>\$204,518,413</b> | <b>\$133,724,208</b> | <b>\$3,286</b> | <b>\$14,882,517</b> | <b>\$28,985,390</b> | <b>\$218,754</b> | <b>\$1,620,536</b> |
| <b>Additions &amp; Deductions To Net Plant</b>       |                        |                    |                        |                    |                      |                     |                      |                     |                      |                     |                      |                      |                |                     |                     |                  |                    |
| <b>Additions</b>                                     |                        |                    |                        |                    |                      |                     |                      |                     |                      |                     |                      |                      |                |                     |                     |                  |                    |
| <b>Land/Plant Held For Future Use (P214)</b>         |                        |                    |                        |                    |                      |                     |                      |                     |                      |                     |                      |                      |                |                     |                     |                  |                    |
| Production Plant                                     | \$0                    | \$0                | \$0                    | \$0                | \$0                  | \$0                 | \$0                  | \$0                 | \$0                  | \$0                 | \$0                  | \$0                  | \$0            | \$0                 | \$0                 | \$0              | \$0                |
| Transmission Plant                                   | 0                      | 0                  | 0                      | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                    | 0                    | 0              | 0                   | 0                   | 0                | 0                  |
| Distribution Plant                                   | 0                      | 0                  | 0                      | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                    | 0                    | 0              | 0                   | 0                   | 0                | 0                  |
| <b>Total</b>   | <b>0</b>               | <b>0</b>           | <b>0</b>               | <b>0</b>           | <b>0</b>             | <b>0</b>            | <b>0</b>             | <b>0</b>            | <b>0</b>             | <b>0</b>            | <b>0</b>             | <b>0</b>             | <b>0</b>       | <b>0</b>            | <b>0</b>            | <b>0</b>         | <b>0</b>           |
| <b>CWIP - Construction Work in Progress (P216.1)</b> |                        |                    |                        |                    |                      |                     |                      |                     |                      |                     |                      |                      |                |                     |                     |                  |                    |
| Production Plant                                     | 0                      | 0                  | 0                      | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                    | 0                    | 0              | 0                   | 0                   | 0                | 0                  |
| Transmission Plant                                   | 0                      | 0                  | 0                      | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                    | 0                    | 0              | 0                   | 0                   | 0                | 0                  |
| Distribution Plant                                   | 0                      | 0                  | 0                      | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                    | 0                    | 0              | 0                   | 0                   | 0                | 0                  |
| <b>Total</b>   | <b>0</b>               | <b>0</b>           | <b>0</b>               | <b>0</b>           | <b>0</b>             | <b>0</b>            | <b>0</b>             | <b>0</b>            | <b>0</b>             | <b>0</b>            | <b>0</b>             | <b>0</b>             | <b>0</b>       | <b>0</b>            | <b>0</b>            | <b>0</b>         | <b>0</b>           |
| <b>Deductions</b>                                    |                        |                    |                        |                    |                      |                     |                      |                     |                      |                     |                      |                      |                |                     |                     |                  |                    |
| <b>Accum. Deferred Income Taxes (P273-277)</b>       |                        |                    |                        |                    |                      |                     |                      |                     |                      |                     |                      |                      |                |                     |                     |                  |                    |
| Production Plant                                     | (255,524,503)          | (249,336)          | (255,275,167)          | (903,966)          | (72,193,738)         | (8,946,066)         | (64,319,638)         | (7,476,947)         | (50,108,830)         | (8,754,468)         | (21,081,890)         | (19,984,103)         | (352)          | (646,572)           | (710,584)           | (18,901)         | (149,117)          |
| Transmission Plant                                   | (23,699,224)           | (22,324)           | (23,676,900)           | (64,367)           | (5,548,642)          | (482,741)           | (6,210,821)          | (599,779)           | (4,884,026)          | (859,655)           | (3,100,944)          | (1,881,835)          | (7)            | (13,141)            | (14,440)            | (384)            | (16,117)           |
| Distribution Plant                                   | (108,245,282)          | (31,802)           | (108,213,480)          | (389,682)          | (42,037,302)         | (3,716,128)         | (22,627,847)         | (3,349,825)         | (15,662,896)         | (2,369,325)         | (7,533,428)          | (996,139)            | (154)          | (1,624,128)         | (3,048,359)         | (25,545)         | (80,092)           |
| <b>TOTAL ACCUM. DEFERRED INCOME TAXES</b>            | <b>(388,169,009)</b>   | <b>(303,462)</b>   | <b>(387,866,051)</b>   | <b>(1,358,015)</b> | <b>(119,779,682)</b> | <b>(13,142,937)</b> | <b>(98,208,305)</b>  | <b>(11,426,601)</b> | <b>(70,660,752)</b>  | <b>(11,993,499)</b> | <b>(31,716,253)</b>  | <b>(22,862,072)</b>  | <b>(513)</b>   | <b>(2,283,802)</b>  | <b>(10,373,383)</b> | <b>(19,831)</b>  | <b>(245,117)</b>   |
| <b>Rate Base Summary</b>                             |                        |                    |                        |                    |                      |                     |                      |                     |                      |                     |                      |                      |                |                     |                     |                  |                    |
| Production Plant                                     | 1,137,452,066          | 1,109,831          | 1,136,342,236          | 4,026,443          | 321,486,397          | 39,854,978          | 286,437,303          | 33,291,213          | 222,944,433          | 38,874,662          | 93,723,363           | 88,912,906           | 1,568          | 2,878,691           | 3,163,091           | 84,153           | 667,414            |
| Transmission Plant                                   | 175,060,869            | 165,151            | 174,895,718            | 476,172            | 41,047,496           | 3,571,202           | 45,949,953           | 4,437,022           | 36,130,830           | 6,359,319           | 22,676,020           | 13,921,351           | 51             | 97,211              | 106,824             | 2,842            | 119,227            |
| Distribution Plant                                   | 805,211,012            | 242,631            | 804,968,388            | 2,892,765          | 308,493,524          | 27,730,300          | 206,598,560          | 25,227,939          | 118,299,672          | 18,063,201          | 58,402,773           | 7,527,955            | 1,155          | 9,622,732           | 21,321,501          | 186,828          | 593,376            |
| <b>TOTAL ADJUSTED NET PLANT (Rate Base)</b>          | <b>\$2,117,723,954</b> | <b>\$1,517,613</b> | <b>\$2,116,206,341</b> | <b>\$7,400,380</b> | <b>\$671,027,416</b> | <b>\$71,156,479</b> | <b>\$538,985,816</b> | <b>\$62,956,173</b> | <b>\$377,374,942</b> | <b>\$63,299,382</b> | <b>\$174,802,152</b> | <b>\$110,362,211</b> | <b>\$2,773</b> | <b>\$12,598,633</b> | <b>\$24,592,016</b> | <b>\$223,923</b> | <b>\$1,325,031</b> |
| <b>Return on Rate Base</b>                           |                        |                    |                        |                    |                      |                     |                      |                     |                      |                     |                      |                      |                |                     |                     |                  |                    |
|  |                        | 6.82%              |                        | 6.17%              | 11.16%               | 1.82%               | 10.27%               | 6.02%               | 9.43%                | 5.64%               | 6.11%                | -0.55%               | 7.35%          | -1.54%              | 13.72%              | 18.51%           | 38.04%             |
| Production Plant                                     | 97,449,457             | 75,689             | 97,373,768             | 248,363            | 35,867,617           | 724,511             | 29,424,082           | 2,004,619           | 21,020,257           | 2,191,607           | 5,723,209            | (491,774)            | 115            | (44,352)            | 433,989             | 15,570           | 255,947            |
| Transmission Plant                                   | 14,805,071             | 11,263             | 14,793,808             | 29,372             | 4,579,590            | 64,920              | 4,720,178            | 267,174             | 3,406,386            | 358,526             | 1,384,709            | (76,998)             | 4              | (1,498)             | 14,654              | 526              | 46,060             |
| Distribution Plant                                   | 76,596,628             | 16,547             | 76,580,131             | 178,742            | 34,418,628           | 504,101             | 21,222,700           | 1,519,092           | 11,153,759           | 1,018,448           | 3,566,361            | (61,637)             | 85             | (148,257)           | 2,924,840           | 34,604           | 229,264            |
| <b>TOTAL RETURN ON RATE BASE</b>                     | <b>\$188,851,205</b>   | <b>\$103,499</b>   | <b>\$188,747,707</b>   | <b>\$456,477</b>   | <b>\$74,865,235</b>  | <b>\$1,293,532</b>  | <b>\$55,366,961</b>  | <b>\$3,790,884</b>  | <b>\$35,580,602</b>  | <b>\$3,568,581</b>  | <b>\$10,674,279</b>  | <b>(8610,499)</b>    | <b>\$204</b>   | <b>(8194,106)</b>   | <b>\$3,373,483</b>  | <b>\$50,709</b>  | <b>\$531,277</b>   |

**ADJUSTED COST OF SERVICE STUDY  
(1996)**

|  | Total<br>Utility     | FERC<br>MURS.    | PA PUC<br>MURS.      | RA                 | RS                   | RI                  | GS/GM                | GMH                 | GL                  | GMH                 | L                   | MVPS                | AL           | SE                 | SM                 | SH              | TRAFIC<br>SIGNALS |
|--|----------------------|------------------|----------------------|--------------------|----------------------|---------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------|--------------------|--------------------|-----------------|-------------------|
| <b>Adjustments To Rate Base For Ratemaking</b>         |                      |                  |                      |                    |                      |                     |                      |                     |                     |                     |                     |                     |              |                    |                    |                 |                   |
| <b>Add: Regulatory Assets</b>                          |                      |                  |                      |                    |                      |                     |                      |                     |                     |                     |                     |                     |              |                    |                    |                 |                   |
| Production   | 455,273,723          | 444,747          | 454,829,476          | 1,610,617          | 128,629,198          | 15,939,406          | 114,599,737          | 13,371,844          | 89,280,023          | 15,562,397          | 37,562,076          | 35,606,124          | 627          | 1,152,011          | 1,266,063          | 33,677          | 263,676           |
| Transmission   | 32,670,171           | 30,775           | 32,639,396           | 88,732             | 7,648,988            | 665,475             | 8,361,823            | 876,816             | 6,732,793           | 1,183,063           | 4,274,755           | 2,594,172           | 9            | 18,115             | 19,906             | 530             | 22,217            |
| Distribution   | 56,844,571           | 16,324           | 56,822,927           | 203,324            | 21,233,783           | 1,932,919           | 14,441,457           | 1,747,863           | 8,070,626           | 1,236,262           | 3,930,709           | 319,253             | 81           | 847,442            | 1,903,603          | 13,329          | 41,790            |
| <b>Total</b>   | <b>544,788,465</b>   | <b>491,846</b>   | <b>544,296,869</b>   | <b>1,902,673</b>   | <b>158,211,970</b>   | <b>18,542,801</b>   | <b>137,603,017</b>   | <b>15,896,572</b>   | <b>104,083,493</b>  | <b>17,983,727</b>   | <b>45,767,540</b>   | <b>38,770,050</b>   | <b>717</b>   | <b>2,017,568</b>   | <b>3,189,572</b>   | <b>47,535</b>   | <b>329,683</b>    |
| <b>Phillips</b>  |                      |                  |                      |                    |                      |                     |                      |                     |                     |                     |                     |                     |              |                    |                    |                 |                   |
| Production   | 78,399,252           | 76,500           | 78,322,752           | 277,352            | 22,150,264           | 2,744,805           | 19,734,356           | 2,294,054           | 15,374,239          | 2,679,883           | 6,468,282           | 6,131,462           | 108          | 198,379            | 218,019            | 5,799           | 45,750            |
| Transmission   | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                 |
| Distribution   | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                 |
| <b>Total</b>   | <b>78,399,252</b>    | <b>76,500</b>    | <b>78,322,752</b>    | <b>277,352</b>     | <b>22,150,264</b>    | <b>2,744,805</b>    | <b>19,734,356</b>    | <b>2,294,054</b>    | <b>15,374,239</b>   | <b>2,679,883</b>    | <b>6,468,282</b>    | <b>6,131,462</b>    | <b>108</b>   | <b>198,379</b>     | <b>218,019</b>     | <b>5,799</b>    | <b>45,750</b>     |
| <b>Brunel Island</b>                                   |                      |                  |                      |                    |                      |                     |                      |                     |                     |                     |                     |                     |              |                    |                    |                 |                   |
| Production   | 28,758,563           | 28,062           | 28,730,501           | 101,739            | 8,125,202            | 1,006,855           | 7,238,994            | 841,509             | 5,639,608           | 983,040             | 2,372,707           | 2,249,155           | 40           | 72,770             | 79,974             | 2,127           | 16,782            |
| Transmission   | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                 |
| Distribution   | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                 |
| <b>Total</b>   | <b>28,758,563</b>    | <b>28,062</b>    | <b>28,730,501</b>    | <b>101,739</b>     | <b>8,125,202</b>     | <b>1,006,855</b>    | <b>7,238,994</b>     | <b>841,509</b>      | <b>5,639,608</b>    | <b>983,040</b>      | <b>2,372,707</b>    | <b>2,249,155</b>    | <b>40</b>    | <b>72,770</b>      | <b>79,974</b>      | <b>2,127</b>    | <b>16,782</b>     |
| <b>Warwick</b>   |                      |                  |                      |                    |                      |                     |                      |                     |                     |                     |                     |                     |              |                    |                    |                 |                   |
| Production   | 15,294,914           | 14,924           | 15,279,990           | 54,109             | 4,321,296            | 535,484             | 3,849,976            | 447,547             | 2,999,361           | 522,818             | 1,261,897           | 1,196,187           | 21           | 38,702             | 42,533             | 1,131           | 8,925             |
| Transmission   | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                 |
| Distribution   | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                 |
| <b>Total</b>   | <b>15,294,914</b>    | <b>14,924</b>    | <b>15,279,990</b>    | <b>54,109</b>      | <b>4,321,296</b>     | <b>535,484</b>      | <b>3,849,976</b>     | <b>447,547</b>      | <b>2,999,361</b>    | <b>522,818</b>      | <b>1,261,897</b>    | <b>1,196,187</b>    | <b>21</b>    | <b>38,702</b>      | <b>42,533</b>      | <b>1,131</b>    | <b>8,925</b>      |
| <b>Deferred Taxes</b>                                  |                      |                  |                      |                    |                      |                     |                      |                     |                     |                     |                     |                     |              |                    |                    |                 |                   |
| Production   | (383,558,497)        | (374,269)        | (383,184,228)        | (1,356,911)        | (108,367,383)        | (13,428,613)        | (96,547,850)         | (11,223,372)        | (75,216,534)        | (13,110,990)        | (31,645,256)        | (29,997,407)        | (528)        | (970,545)          | (1,066,632)        | (28,372)        | (22,856)          |
| Transmission   | (37,049,551)         | (34,909)         | (37,014,651)         | (100,627)          | (8,674,322)          | (754,681)           | (9,709,571)          | (937,649)           | (7,635,312)         | (1,343,919)         | (4,847,779)         | (2,941,916)         | (11)         | (20,543)           | (22,575)           | (601)           | (25,194)          |
| Distribution   | (65,377,577)         | (12,084)         | (65,365,493)         | (233,843)          | (25,226,288)         | (2,228,823)         | (16,609,298)         | (2,910,236)         | (12,282,173)        | (1,821,843)         | (4,320,732)         | (397,274)           | (93)         | (974,633)          | (2,189,346)        | (13,330)        | (48,063)          |
| <b>Total</b>   | <b>(485,985,625)</b> | <b>(421,262)</b> | <b>(485,557,391)</b> | <b>(1,691,381)</b> | <b>(142,267,993)</b> | <b>(16,412,117)</b> | <b>(122,866,669)</b> | <b>(14,171,258)</b> | <b>(92,134,021)</b> | <b>(15,876,753)</b> | <b>(41,013,787)</b> | <b>(33,537,099)</b> | <b>(632)</b> | <b>(1,965,741)</b> | <b>(3,278,561)</b> | <b>(44,302)</b> | <b>(127,083)</b>  |
| <b>Working Capital</b>                                 |                      |                  |                      |                    |                      |                     |                      |                     |                     |                     |                     |                     |              |                    |                    |                 |                   |
| Production   | 63,590,000           | 62,050           | 63,527,950           | 224,962            | 17,966,182           | 2,226,324           | 16,006,628           | 1,860,718           | 12,470,117          | 2,173,666           | 5,746,433           | 4,973,237           | 88           | 160,906            | 176,836            | 4,704           | 17,106            |
| Transmission   | 1,240,000            | 1,168            | 1,238,832            | 3,368              | 290,318              | 25,258              | 324,965              | 31,382              | 255,544             | 44,979              | 162,249             | 98,462              | 0            | 688                | 756                | 20              | 643               |
| Distribution   | 5,110,000            | 1,492            | 5,108,508            | 18,278             | 1,971,720            | 174,208             | 1,298,203            | 157,123             | 725,502             | 111,183             | 353,348             | 66,723              | 7            | 76,180             | 171,123            | 1,195           | 3,757             |
| <b>Total</b>   | <b>69,940,000</b>    | <b>64,710</b>    | <b>69,875,290</b>    | <b>246,607</b>     | <b>20,228,221</b>    | <b>2,425,790</b>    | <b>17,629,797</b>    | <b>2,049,223</b>    | <b>13,451,168</b>   | <b>2,329,778</b>    | <b>5,762,050</b>    | <b>5,118,442</b>    | <b>95</b>    | <b>237,774</b>     | <b>348,715</b>     | <b>5,922</b>    | <b>41,716</b>     |
| <b>Total Net Adjustment To Rate Base</b>               | <b>251,195,569</b>   | <b>247,559</b>   | <b>250,948,010</b>   | <b>891,097</b>     | <b>70,768,959</b>    | <b>8,843,618</b>    | <b>63,189,481</b>    | <b>7,357,598</b>    | <b>49,413,847</b>   | <b>8,622,492</b>    | <b>20,618,690</b>   | <b>19,878,197</b>   | <b>349</b>   | <b>599,452</b>     | <b>600,253</b>     | <b>18,213</b>   | <b>143,764</b>    |
| <b>Rate Base Adjusted For Ratemaking</b>               | <b>2,368,919,523</b> | <b>1,765,172</b> | <b>2,367,154,351</b> | <b>8,291,477</b>   | <b>741,796,375</b>   | <b>80,000,097</b>   | <b>602,175,296</b>   | <b>70,313,771</b>   | <b>426,787,789</b>  | <b>71,921,874</b>   | <b>195,420,848</b>  | <b>130,240,408</b>  | <b>3,123</b> | <b>13,198,087</b>  | <b>23,192,269</b>  | <b>292,136</b>  | <b>1,170,811</b>  |
| <b>Adjustments To Rate Base For Ratemaking Summary</b> |                      |                  |                      |                    |                      |                     |                      |                     |                     |                     |                     |                     |              |                    |                    |                 |                   |
| Production Plant                                       | 257,757,955          | 251,515          | 257,506,440          | 911,868            | 72,824,759           | 9,074,261           | 64,881,833           | 7,542,300           | 50,546,814          | 8,810,813           | 21,266,160          | 20,158,777          | 355          | 652,223            | 716,795            | 19,067          | 150,415           |
| Transmission Plant                                     | (3,139,380)          | (2,957)          | (3,136,423)          | (8,527)            | (735,015)            | (63,948)            | (822,733)            | (79,451)            | (646,975)           | (113,874)           | (410,775)           | (249,282)           | (1)          | (1,741)            | (1,913)            | (51)            | (2,135)           |
| Distribution Plant                                     | (3,421,006)          | (999)            | (3,422,002)          | (12,244)           | (1,320,783)          | (116,696)           | (869,620)            | (105,251)           | (685,921)           | (24,444)            | (236,695)           | (31,298)            | (5)          | (51,030)           | (114,629)          | (803)           | (2,316)           |
| <b>Total</b>   | <b>251,195,569</b>   | <b>247,559</b>   | <b>250,948,010</b>   | <b>891,097</b>     | <b>70,768,959</b>    | <b>8,843,618</b>    | <b>63,189,481</b>    | <b>7,357,598</b>    | <b>49,413,847</b>   | <b>8,622,492</b>    | <b>20,618,690</b>   | <b>19,878,197</b>   | <b>349</b>   | <b>599,452</b>     | <b>600,253</b>     | <b>18,213</b>   | <b>143,764</b>    |
| <b>Rate Base Adjusted For Ratemaking</b>               |                      |                  |                      |                    |                      |                     |                      |                     |                     |                     |                     |                     |              |                    |                    |                 |                   |
| Production Plant                                       | 1,395,210,021        | 1,361,346        | 1,393,848,676        | 4,938,311          | 394,311,156          | 48,879,239          | 351,319,136          | 40,833,513          | 273,491,247         | 47,685,475          | 114,989,523         | 109,071,683         | 1,923        | 3,530,915          | 3,880,486          | 101,220         | 817,845           |
| Transmission Plant                                     | 171,921,489          | 162,194          | 171,759,295          | 467,646            | 40,312,480           | 3,507,254           | 45,127,220           | 4,357,570           | 35,883,854          | 6,245,642           | 22,265,245          | 13,672,068          | 50           | 95,470             | 104,912            | 2,791           | 117,095           |
| Distribution Plant                                     | 802,788,013          | 241,632          | 801,546,381          | 2,885,521          | 307,172,739          | 27,613,604          | 203,728,940          | 25,122,668          | 117,812,688         | 12,990,757          | 38,166,080          | 7,496,637           | 1,150        | 9,571,702          | 21,206,871         | 106,125         | 598,859           |
| <b>Total</b>   | <b>2,368,919,523</b> | <b>1,765,172</b> | <b>2,367,154,351</b> | <b>8,291,477</b>   | <b>741,796,375</b>   | <b>80,000,097</b>   | <b>602,175,296</b>   | <b>70,313,771</b>   | <b>426,787,789</b>  | <b>71,921,874</b>   | <b>195,420,848</b>  | <b>130,240,408</b>  | <b>3,123</b> | <b>13,198,087</b>  | <b>23,192,269</b>  | <b>292,136</b>  | <b>1,170,811</b>  |
| <b>Adjusted Return for Ratemaking</b>                  |                      |                  |                      |                    |                      |                     |                      |                     |                     |                     |                     |                     |              |                    |                    |                 |                   |
| Production Plant                                       | 119,530,508          | 92,841           | 119,437,666          | 304,609            | 43,992,535           | 888,561             | 36,089,025           | 2,458,776           | 75,786,049          | 2,688,327           | 7,021,826           | (603,271)           | 141          | (54,401)           | 532,317            | 19,108          | 314,061           |
| Transmission Plant                                     | 14,539,683           | 11,061           | 14,528,621           | 28,846             | 4,497,586            | 63,757              | 4,635,664            | 262,390             | 3,345,586           | 352,106             | 1,559,625           | (75,620)            | 4            | (1,471)            | 14,392             | 517             | 45,241            |
| Distribution Plant                                     | 76,270,348           | 16,479           | 76,253,869           | 127,982            | 34,270,670           | 501,979             | 21,133,369           | 1,512,754           | 11,107,938          | 1,814,231           | 3,551,902           | (41,464)            | 85           | (142,421)          | 2,909,116          | 34,656          | 228,292           |
| <b>Total</b>   | <b>210,340,539</b>   | <b>120,381</b>   | <b>210,220,157</b>   | <b>511,442</b>     | <b>82,760,791</b>    | <b>1,452,297</b>    | <b>61,858,058</b>    | <b>4,233,920</b>    | <b>90,239,573</b>   | <b>4,854,664</b>    | <b>11,133,358</b>   | <b>(870,355)</b>    | <b>230</b>   | <b>(182,421)</b>   | <b>3,455,825</b>   | <b>54,681</b>   | <b>387,594</b>    |

**ADJUSTED COST OF SERVICE STUDY  
(1996)**

|   | Total<br>Utility     | FERC<br>JURIS.   | PA PUC<br>JURIS.     | RA                 | RS                   | RH                  | GS&GM                | GMM                 | GL                   | GLH                 | L                   | HYPS                | AL           | SE                 | SM                 | SH              | TRAF&C<br>SIGNALS |
|---|----------------------|------------------|----------------------|--------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|---------------------|---------------------|--------------|--------------------|--------------------|-----------------|-------------------|
| <b>Power Production (O&amp;M) Expenses</b>            |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                   |
| (1) Production Plant Expense                          | \$374,343,840        | \$369,847        | \$373,973,993        | \$1,167,875        | \$98,210,706         | \$11,090,329        | \$86,549,800         | \$10,449,525        | \$80,444,638         | \$13,191,595        | \$38,509,330        | \$32,111,098        | \$446        | \$914,794          | \$1,005,298        | \$26,751        | \$301,811         |
| (2) Transmission Plant Expense                        | 11,112,079           | 10,702           | 11,101,377           | 30,857             | 2,659,951            | 231,420             | 2,974,410            | 287,527             | 2,341,342            | 412,108             | 1,240,499           | 902,128             | 3            | 6,299              | 6,922              | 184             | 7,726             |
| (3) Distribution Plant Expense                        | 38,601,510           | 9,031            | 38,592,479           | 146,425            | 15,496,632           | 1,419,441           | 9,685,560            | 1,941,431           | 4,708,660            | 504,223             | 1,821,942           | 1,934,363           | 63           | 575,506            | 1,212,153          | 11,541          | 34,334            |
| <b>Total</b>  | <b>424,057,429</b>   | <b>389,580</b>   | <b>423,667,849</b>   | <b>1,345,156</b>   | <b>116,367,294</b>   | <b>12,741,190</b>   | <b>99,209,770</b>    | <b>11,778,482</b>   | <b>87,494,639</b>    | <b>14,107,926</b>   | <b>41,571,771</b>   | <b>34,947,589</b>   | <b>512</b>   | <b>1,496,599</b>   | <b>2,224,373</b>   | <b>38,476</b>   | <b>343,869</b>    |
| <b>Corporate and Accounting Expense</b>               |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                   |
| Production  | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                 |
| Transmission  | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                 |
| Distribution  | 39,197,755           | 61               | 39,197,694           | 170,411            | 30,279,853           | 1,386,779           | 6,586,016            | 443,779             | 206,289              | 32,534              | 14,761              | 2,381               | 62           | 31                 | 22,124             | 432             | 52,249            |
| <b>(4) TOTAL CORPORATE &amp; ACCOUNTING EXPENSE</b>   | <b>39,197,755</b>    | <b>61</b>        | <b>39,197,694</b>    | <b>170,411</b>     | <b>30,279,853</b>    | <b>1,386,779</b>    | <b>6,586,016</b>     | <b>443,779</b>      | <b>206,289</b>       | <b>32,534</b>       | <b>14,761</b>       | <b>2,381</b>        | <b>62</b>    | <b>31</b>          | <b>22,124</b>      | <b>432</b>      | <b>52,249</b>     |
| <b>General Expense</b>                                |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                   |
| Production  | 60,049,381           | 58,957           | 59,990,424           | 200,051            | 14,367,873           | 1,942,789           | 14,507,502           | 1,717,198           | 17,332,749           | 2,083,956           | 5,557,937           | 4,920,741           | 77           | 149,379            | 164,163            | 4,368           | 41,644            |
| Transmission  | 2,354,792            | 2,255            | 2,352,537            | 6,502              | 560,461              | 48,761              | 626,892              | 60,583              | 493,329              | 86,833              | 274,642             | 190,082             | 1            | 1,327              | 1,459              | 39              | 1,626             |
| Distribution  | 30,472,271           | 7,689            | 30,464,582           | 113,768            | 12,081,700           | 1,098,315           | 7,683,790            | 858,403             | 3,918,380            | 478,569             | 1,649,505           | 1,163,416           | 48           | 440,408            | 942,524            | 8,326           | 25,738            |
| <b>(5) TOTAL GENERAL EXPENSE</b>                      | <b>92,876,444</b>    | <b>68,901</b>    | <b>92,808,043</b>    | <b>320,321</b>     | <b>29,010,034</b>    | <b>3,089,864</b>    | <b>22,820,174</b>    | <b>2,636,186</b>    | <b>16,744,457</b>    | <b>2,649,358</b>    | <b>7,482,084</b>    | <b>6,274,239</b>    | <b>126</b>   | <b>591,115</b>     | <b>1,108,146</b>   | <b>12,932</b>   | <b>69,008</b>     |
| <b>O&amp;M, Corp./Acct., &amp; General Expense</b>    |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                   |
| Production  | 434,393,221          | 428,804          | 433,964,417          | 1,367,926          | 114,578,579          | 13,033,117          | 101,057,302          | 12,166,723          | 92,777,386           | 15,275,551          | 44,067,266          | 37,031,839          | 523          | 1,064,173          | 1,169,461          | 31,119          | 343,451           |
| Transmission  | 13,466,871           | 12,957           | 13,453,913           | 37,358             | 3,220,411            | 280,181             | 3,601,302            | 348,110             | 2,834,671            | 498,941             | 1,515,141           | 1,092,210           | 4            | 7,627              | 8,381              | 223             | 9,354             |
| Distribution  | 108,272,036          | 16,781           | 108,255,256          | 430,603            | 52,838,192           | 3,904,535           | 23,957,356           | 2,343,615           | 8,833,528            | 1,015,326           | 3,486,708           | 3,100,161           | 173          | 1,015,945          | 2,176,803          | 20,499          | 112,311           |
| <b>TOTAL O &amp; M EXPENSE (1+2+3+4)</b>              | <b>\$556,132,128</b> | <b>\$458,542</b> | <b>\$555,673,586</b> | <b>\$1,835,888</b> | <b>\$175,657,182</b> | <b>\$17,217,833</b> | <b>\$128,615,960</b> | <b>\$14,858,447</b> | <b>\$104,445,585</b> | <b>\$16,799,818</b> | <b>\$49,069,615</b> | <b>\$41,224,210</b> | <b>\$700</b> | <b>\$2,087,744</b> | <b>\$3,354,645</b> | <b>\$51,840</b> | <b>\$466,117</b>  |
| <b>Depreciation &amp; Amortization Expense</b>        |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                   |
| (1) Production Plant Expense                          | \$228,409,836        | \$222,851        | \$228,186,985        | \$808,963          | \$64,577,395         | \$8,008,616         | \$57,539,581         | \$6,686,504         | \$44,750,234         | \$7,805,295         | \$18,999,988        | \$17,846,852        | \$315        | \$578,152          | \$635,391          | \$16,901        | \$137,799         |
| (2) Transmission Plant Expense                        | 6,144,059            | 5,808            | 6,138,251            | 16,746             | 1,443,537            | 125,990             | 1,615,016            | 156,039             | 1,270,630            | 223,648             | 785,996             | 489,579             | 2            | 3,419              | 3,757              | 100             | 4,191             |
| (3) Distribution Plant Expense                        | 35,776,133           | 10,257           | 35,765,876           | 124,192            | 13,228,038           | 1,186,825           | 8,395,688            | 1,048,148           | 4,991,985            | 762,906             | 2,457,150           | 328,535             | 50           | 982,030            | 2,447,975          | 8,404           | 26,249            |
| <b>Total</b>  | <b>270,352,328</b>   | <b>238,915</b>   | <b>270,113,413</b>   | <b>949,901</b>     | <b>79,248,960</b>    | <b>9,321,031</b>    | <b>67,550,286</b>    | <b>7,890,691</b>    | <b>51,012,849</b>    | <b>8,791,849</b>    | <b>22,043,134</b>   | <b>18,664,965</b>   | <b>367</b>   | <b>1,563,601</b>   | <b>2,687,123</b>   | <b>25,405</b>   | <b>163,241</b>    |
| <b>Corporate &amp; Acct. Depr. &amp; Amortization</b> |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                   |
| Production  | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                 |
| Transmission  | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                 |
| Distribution  | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                 |
| <b>(4) TOTAL CORPORATE &amp; ACCOUNTING DEPR.</b>     | <b>\$0</b>           | <b>\$0</b>       | <b>\$0</b>           | <b>\$0</b>         | <b>\$0</b>           | <b>\$0</b>          | <b>\$0</b>           | <b>\$0</b>          | <b>\$0</b>           | <b>\$0</b>          | <b>\$0</b>          | <b>\$0</b>          | <b>\$0</b>   | <b>\$0</b>         | <b>\$0</b>         | <b>\$0</b>      | <b>\$0</b>        |
| <b>General Plant Depreciation &amp; Amortization</b>  |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                   |
| Production  | 11,416,869           | 11,140           | 11,405,728           | 40,389             | 3,225,626            | 399,711             | 2,823,810            | 334,071             | 2,238,869            | 390,257             | 941,942             | 892,892             | 16           | 28,889             | 31,749             | 845             | 660               |
| Transmission  | 450,310              | 424              | 449,885              | 1,223              | 105,430              | 9,173               | 118,012              | 11,396              | 92,801               | 16,334              | 58,921              | 35,757              | 0            | 250                | 274                | 7               | 366               |
| Distribution  | 2,111,599            | 2,024            | 2,109,575            | 23,432             | 2,744,048            | 242,445             | 1,806,213            | 218,668             | 1,009,499            | 154,664             | 491,255             | 65,024              | 10           | 106,020            | 238,152            | 1,668           | 5,278             |
| <b>(5) TOTAL GENERAL PLANT DEPREC. &amp; AMORT.</b>   | <b>18,978,777</b>    | <b>13,640</b>    | <b>18,965,136</b>    | <b>67,049</b>      | <b>6,075,103</b>     | <b>651,329</b>      | <b>4,796,035</b>     | <b>564,135</b>      | <b>3,341,361</b>     | <b>541,256</b>      | <b>1,492,618</b>    | <b>993,674</b>      | <b>26</b>    | <b>135,159</b>     | <b>270,175</b>     | <b>2,519</b>    | <b>12,307</b>     |
| <b>Depreciation &amp; Amortization Expense</b>        |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                   |
| Production  | 239,826,705          | 233,991          | 239,592,713          | 849,352            | 67,803,020           | 8,408,327           | 60,413,391           | 7,020,575           | 46,989,103           | 8,195,552           | 19,741,930          | 18,739,744          | 331          | 607,041            | 567,140            | 17,746          | 139,465           |
| Transmission  | 6,594,369            | 6,232            | 6,588,136            | 17,949             | 1,548,967            | 134,763             | 1,733,028            | 167,435             | 1,363,431            | 239,983             | 844,917             | 525,336             | 2            | 3,668              | 4,031              | 107             | 4,499             |
| Distribution  | 42,110,032           | 12,332           | 42,097,699           | 149,630            | 15,922,086           | 1,429,221           | 10,202,401           | 1,266,816           | 6,001,675            | 917,371             | 2,848,905           | 393,559             | 61           | 1,088,050          | 2,486,127          | 10,071          | 31,477            |
| <b>TOTAL DEPR. &amp; AMORT. EXPENSE (1+2+3+4+5)</b>   | <b>289,331,105</b>   | <b>252,556</b>   | <b>289,078,549</b>   | <b>1,016,950</b>   | <b>85,324,073</b>    | <b>9,972,361</b>    | <b>72,348,820</b>    | <b>8,454,827</b>    | <b>54,354,210</b>    | <b>9,353,108</b>    | <b>23,535,752</b>   | <b>19,658,639</b>   | <b>393</b>   | <b>1,698,759</b>   | <b>1,157,298</b>   | <b>27,924</b>   | <b>175,441</b>    |

**ADJUSTED COST OF SERVICE STUDY  
(1996)**

|   | Total<br>Utility     | FERC<br>JURIS.   | PA PUC<br>JURIS.     | RA                 | RS                   | RII                 | GS/GM                | GMI                 | GL                   | GMH                 | L                   | HVPS                | AL             | SE                 | SM                 | SH               | TRAFFIC<br>SIGNALS |
|---|----------------------|------------------|----------------------|--------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|---------------------|---------------------|----------------|--------------------|--------------------|------------------|--------------------|
| <b>Total O&amp;M And Depr./Amort. Expense</b> |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |                |                    |                    |                  |                    |
| Production                                    | 674,219,923          | 662,795          | 673,537,130          | 2,217,278          | 182,381,599          | 21,441,444          | 161,470,693          | 19,187,298          | 139,766,489          | 23,471,103          | 63,809,196          | 33,771,583          | 853            | 1,671,214          | 1,830,601          | 48,864           | 487,913            |
| Transmission                                  | 20,061,239           | 19,189           | 20,042,030           | 53,327             | 4,769,378            | 414,944             | 5,334,330            | 515,545             | 4,198,102            | 738,923             | 2,360,058           | 1,617,343           | 6              | 11,295             | 12,412             | 330              | 13,853             |
| Distribution                                  | 151,182,068          | 29,111           | 151,152,953          | 580,233            | 73,830,228           | 5,333,806           | 24,159,257           | 3,610,431           | 14,835,203           | 1,932,897           | 4,433,113           | 3,493,720           | 234            | 2,193,995          | 4,662,929          | 30,329           | 143,780            |
| <b>TOTAL O&amp;M AND DEPR./AMORT. EXPENSE</b> | <b>\$845,463,233</b> | <b>\$711,098</b> | <b>\$844,732,133</b> | <b>\$2,852,838</b> | <b>\$260,981,255</b> | <b>\$27,190,194</b> | <b>\$200,964,781</b> | <b>\$23,313,274</b> | <b>\$158,799,795</b> | <b>\$26,142,923</b> | <b>\$72,604,368</b> | <b>\$60,882,848</b> | <b>\$1,093</b> | <b>\$3,786,504</b> | <b>\$6,511,943</b> | <b>\$79,765</b>  | <b>\$640,554</b>   |
| <b>Taxes</b>                                  |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |                |                    |                    |                  |                    |
| Production                                    | 61,543,977           | 10,617           | 61,533,360           | 85,259             | 30,695,330           | (1,196,974)         | 20,440,090           | 704,204             | 11,270,444           | 302,320             | 2,007,345           | (4,975,630)         | 49             | (154,472)          | 2,631,722          | 26,487           | 297,185            |
| Transmission                                  | 2,503,261            | 1,151            | 2,502,110            | 5,487              | 1,113,540            | (1,422)             | 768,551              | 43,010              | 471,263              | 33,276              | 83,763              | (80,089)            | 3              | (3,603)            | 58,375             | 841              | 9,113              |
| Distribution                                  | 23,701,737           | 13,264           | 23,688,472           | 52,619             | 9,257,074            | 49,703              | 7,112,288            | 428,358             | 4,753,894            | 455,265             | 1,394,549           | (65,152)            | 24             | (72,308)           | 336,862            | 6,025            | 74,263             |
| <b>TOTAL TAXES</b>                            | <b>87,748,975</b>    | <b>27,032</b>    | <b>87,721,942</b>    | <b>143,365</b>     | <b>41,065,944</b>    | <b>(1,148,693)</b>  | <b>28,320,929</b>    | <b>1,175,572</b>    | <b>16,495,601</b>    | <b>790,862</b>      | <b>3,395,657</b>    | <b>(5,120,871)</b>  | <b>76</b>      | <b>(737,375)</b>   | <b>2,426,960</b>   | <b>33,354</b>    | <b>380,561</b>     |
| <b>Total O&amp;M, Depr. Amort. And Tax</b>    |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |                |                    |                    |                  |                    |
| Production                                    | 735,763,902          | 673,412          | 735,090,490          | 2,302,537          | 213,076,929          | 20,244,470          | 181,910,784          | 19,891,502          | 151,036,933          | 23,773,423          | 65,816,541          | 50,795,952          | 902            | 1,516,742          | 3,868,373          | 75,351           | 780,098            |
| Transmission                                  | 22,564,500           | 20,340           | 22,544,160           | 60,815             | 5,882,918            | 413,522             | 6,102,881            | 358,555             | 4,669,365            | 772,199             | 2,443,821           | 1,537,456           | 9              | 7,692              | 70,787             | 1,171            | 22,960             |
| Distribution                                  | 174,883,605          | 44,378           | 174,839,427          | 632,851            | 83,082,352           | 5,383,509           | 41,272,045           | 4,038,789           | 19,589,097           | 2,388,162           | 7,739,662           | 3,428,569           | 258            | 2,024,695          | 4,992,792          | 36,396           | 218,031            |
| <b>TOTAL O&amp;M, DEPR. AMORT. AND TAX</b>    | <b>\$933,212,207</b> | <b>\$738,130</b> | <b>\$932,474,077</b> | <b>\$2,996,203</b> | <b>\$302,047,199</b> | <b>\$26,041,501</b> | <b>\$229,285,710</b> | <b>\$24,488,846</b> | <b>\$175,295,396</b> | <b>\$26,933,785</b> | <b>\$75,000,925</b> | <b>\$55,761,977</b> | <b>\$1,169</b> | <b>\$3,549,129</b> | <b>\$8,938,903</b> | <b>\$113,118</b> | <b>\$1,021,113</b> |
| <b>Cost of Service (Summary)</b>              |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |                |                    |                    |                  |                    |
| Production Cost                               | \$855,294,410        | \$766,253        | \$854,528,156        | \$2,607,147        | \$257,069,464        | \$21,133,031        | \$217,999,809        | \$22,350,278        | \$176,822,963        | \$26,461,751        | \$72,838,367        | \$30,192,681        | \$1,044        | \$1,462,341        | \$4,400,641        | \$94,459         | \$1,094,151        |
| Less: Off-System Revenues                     | (33,441,134)         | (32,631)         | (33,408,503)         | (118,304)          | (9,448,176)          | (1,170,794)         | (8,417,679)          | (978,527)           | (6,557,869)          | (1,143,102)         | (2,759,049)         | (2,615,370)         | (40)           | (84,618)           | (92,996)           | (2,474)          | (19,515)           |
| Less: Other Revenues                          | (17,725,476)         | (17,296)         | (17,708,179)         | (62,202)           | (5,008,006)          | (620,580)           | (4,661,288)          | (518,668)           | (3,475,292)          | (665,901)           | (1,462,479)         | (1,386,271)         | (24)           | (44,852)           | (49,292)           | (1,311)          | (10,344)           |
| Total Retail Production Cost                  | 804,127,800          | 716,326          | 803,411,474          | 2,426,135          | 242,613,282          | 19,341,657          | 205,120,348          | 20,853,083          | 166,789,116          | 24,712,748          | 68,616,890          | 46,191,034          | 973            | 1,332,871          | 4,258,352          | 90,675           | 1,064,191          |
| Add: Gross Receipts Tax                       | 23,924,835           | 34,561           | 23,890,275           | 111,401            | 11,189,060           | 887,819             | 3,411,234            | 706,232             | 2,763,544            | 962,944             | 2,479,033           | 1,043,311           | 22             | 61,254             | 201,021            | 4,208            | 49,112             |
| Total Retail Production Cost/wGRT             | 828,052,635          | 750,887          | 827,301,748          | 2,537,536          | 253,802,342          | 20,229,516          | 208,531,582          | 21,559,314          | 169,552,660          | 25,675,692          | 71,095,911          | 47,234,345          | 995            | 1,394,125          | 4,459,373          | 94,883           | 1,113,414          |
|   | 2.889%               | 4.603%           | 2.889%               | 4.390%             | 4.409%               | 4.389%              | 4.636%               | 3.276%              | 1.630%               | 3.825%              | 3.487%              | 2.209%              | 2.231%         | 4.394%             | 4.508%             | 4.435%           | 4.413%             |
| Transmission Cost                             | 37,104,183           | 31,401           | 37,072,782           | 89,660             | 10,380,504           | 477,279             | 10,738,545           | 820,945             | 8,014,951            | 1,124,305           | 3,803,447           | 1,461,837           | 13             | 6,221              | 85,179             | 1,688            | 68,297             |
| Less: Off-System Revenues                     | (2,201,621)          | (2,074)          | (2,199,547)          | (5,980)            | (515,460)            | (44,846)            | (576,975)            | (55,719)            | (453,718)            | (79,861)            | (288,073)           | (174,819)           | (1)            | (1,221)            | (1,341)            | (36)             | (1,491)            |
| Less: Other Revenues                          | (6,246,853)          | (5,884)          | (6,240,969)          | (16,964)           | (1,462,561)          | (122,245)           | (1,642,104)          | (158,095)           | (1,282,325)          | (226,996)           | (817,375)           | (496,631)           | (2)            | (3,464)            | (3,806)            | (101)            | (4,249)            |
| Total Transmission Cost                       | 28,655,709           | 23,443           | 28,632,266           | 66,714             | 8,402,483            | 305,188             | 8,524,466            | 607,131             | 6,273,858            | 817,849             | 2,697,999           | 790,986             | 10             | 1,537              | 80,031             | 1,551            | 62,467             |
| Add: Gross Receipts Tax                       | 1,318,882            | 1,079            | 1,317,803            | 3,071              | 386,725              | 14,046              | 392,339              | 27,943              | 288,755              | 37,642              | 124,176             | 36,405              | 0              | 71                 | 3,683              | 71               | 2,875              |
| Total Retail Transmission Cost/wGRT           | 29,974,591           | 24,522           | 29,950,069           | 69,785             | 8,789,208            | 319,234             | 8,916,806            | 635,074             | 6,562,612            | 855,491             | 2,822,175           | 827,392             | 11             | 1,607              | 83,714             | 1,622            | 65,312             |
| Distribution Cost                             | 251,154,153          | 60,857           | 251,093,296          | 810,839            | 117,358,022          | 5,885,488           | 62,405,414           | 5,531,543           | 30,697,035           | 3,402,413           | 11,291,569          | 3,387,105           | 342            | 1,877,224          | 7,908,908          | 71,051           | 446,143            |
| Less: Off-System Revenues                     | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0              | 0                  | 0                  | 0                | 0                  |
| Less: Other Revenues                          | (14,106,307)         | (4,118)          | (14,104,188)         | (50,463)           | (5,443,764)          | (480,974)           | (3,584,237)          | (433,803)           | (2,003,068)          | (306,836)           | (975,566)           | (128,998)           | (128)          | (210,327)          | (472,457)          | (3,308)          | (10,374)           |
| Total Retail Distribution Cost                | 237,048,846          | 56,738           | 236,989,108          | 760,376            | 111,914,258          | 5,404,514           | 58,821,176           | 5,117,739           | 28,693,967           | 3,095,583           | 10,316,003          | 3,258,106           | 322            | 1,666,897          | 7,436,451          | 67,743           | 435,971            |
| Add: Gross Receipts Tax                       | 10,910,060           | 2,611            | 10,907,448           | 34,996             | 5,150,865            | 248,743             | 2,707,251            | 235,544             | 1,320,643            | 142,475             | 474,793             | 149,955             | 15             | 76,719             | 342,263            | 3,118            | 20,060             |
| Total Retail Distribution Cost/wGRT           | 247,958,906          | 59,350           | 247,896,556          | 795,372            | 117,065,123          | 5,653,258           | 61,528,427           | 5,353,284           | 30,014,610           | 3,238,058           | 10,790,796          | 3,408,061           | 337            | 1,743,616          | 7,778,714          | 70,861           | 456,031            |
| Total Retail Trans. & Distr. Cost             | 277,930,497          | 83,872           | 277,846,625          | 865,157            | 125,854,332          | 5,972,492           | 70,445,233           | 5,968,158           | 36,577,223           | 4,093,548           | 13,612,973          | 4,235,453           | 348            | 1,745,223          | 7,862,429          | 72,484           | 521,374            |
| Total Retail Prod., Trans., & Distr. Cost     | \$1,105,983,132      | \$834,758        | \$1,105,148,374      | \$3,402,693        | \$379,656,673        | \$26,202,008        | \$278,976,815        | \$27,547,673        | \$206,129,883        | \$29,789,240        | \$84,708,924        | \$51,469,797        | \$1,343        | \$3,139,348        | \$17,321,607       | \$1,014,000      | \$1,634,000        |
| Total kWh's                                   | 12,406,325,000       | 12,808,000       | 12,393,517,000       | 33,848,000         | 2,977,268,000        | 309,038,000         | 2,621,147,000        | 328,256,000         | 2,884,887,000        | 455,220,000         | 1,509,474,000       | 1,201,824,000       | 13,000         | 28,618,000         | 31,448,000         | 837,000          | 11,639,000         |
| <b>Average Retail Cost (\$/kWh)</b>           |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |                |                    |                    |                  |                    |
| Retail Production Cost                        | \$0.0667             | \$0.0586         | \$0.0668             | \$0.0750           | \$0.0852             | \$0.0655            | \$0.0796             | \$0.0657            | \$0.0588             | \$0.0564            | \$0.0471            | \$0.0393            | \$0.0766       | \$0.0487           | \$0.1418           | \$0.1134         | \$0.0457           |
| Retail Transmission Cost                      | 0.0024               | 0.0019           | 0.0024               | 0.0021             | 0.0030               | 0.0010              | 0.0034               | 0.0019              | 0.0023               | 0.0019              | 0.0019              | 0.0007              | 0.0008         | 0.0001             | 0.0027             | 0.0019           | 0.0056             |
| Retail Distribution Cost                      | 0.0200               | 0.0046           | 0.0200               | 0.0235             | 0.0393               | 0.0183              | 0.0235               | 0.0163              | 0.0104               | 0.0071              | 0.0071              | 0.0028              | 0.0259         | 0.0609             | 0.2474             | 0.0847           | 0.0392             |
| Retail Trans. & Distr. Cost                   | 0.0224               | 0.0065           | 0.0224               | 0.0256             | 0.0423               | 0.0193              | 0.0269               | 0.0182              | 0.0127               | 0.0090              | 0.0090              | 0.0035              | 0.0268         | 0.0610             | 0.2500             | 0.0866           | 0.0448             |
| Retail Total Cost (\$/kWh)                    | 0.0891               | 0.0652           | 0.0892               | 0.1005             | 0.1275               | 0.0848              | 0.1064               | 0.0839              | 0.0715               | 0.0654              | 0.0561              | 0.0428              | 0.1033         | 0.1097             | 0.3918             | 0.2000           | 0.1405             |

**ADJUSTED COST OF SERVICE STUDY  
(1996)**

|  | Total Utility      | FERC JURIS.    | PA PUC JURIS.      | RA               | RS                 | RH                | GS/GM              | GMH               | GL                 | GMH               | L                 | HVPS              | AL             | SE               | SM               | SH            | TRAFFIC SIGNALS  |
|--|--------------------|----------------|--------------------|------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|-------------------|----------------|------------------|------------------|---------------|------------------|
| <b>Alloc Total Retail Production Cost</b>                      | <b>855,294,410</b> | <b>766,253</b> | <b>854,528,156</b> | <b>2,007,147</b> | <b>257,069,464</b> | <b>21,133,031</b> | <b>217,999,809</b> | <b>22,350,278</b> | <b>176,822,983</b> | <b>26,461,751</b> | <b>72,838,367</b> | <b>50,192,681</b> | <b>1,044</b>   | <b>1,462,341</b> | <b>4,400,641</b> | <b>94,459</b> | <b>1,094,161</b> |
| # Production Energy (501, 509, 518, 547, 555)                  | 216,684,908        | 216,007        | 216,468,901        | 610,126          | 53,667,081         | 5,570,595         | 46,864,505         | 5,836,239         | 49,527,428         | 7,802,418         | 25,501,777        | 19,780,882        | 728            | 513,858          | 566,866          | 15,089        | 209,808          |
| 100 less: Off-System Sales (33,177,904)                        | (33,177,904)       | (32,374)       | (33,145,529)       | (117,373)        | (9,373,805)        | (1,161,572)       | (8,351,413)        | (970,824)         | (6,506,249)        | (1,134,104)       | (2,737,322)       | (2,594,783)       | (46)           | (83,932)         | (92,264)         | (2,454)       | (19,136)         |
| 100 less: Transmission Off-System Sales Less Revenue (262,231) | (262,231)          | (232)          | (262,924)          | (231)            | (26,371)           | (2,216)           | (16,259)           | (2,702)           | (15,620)           | (8,998)           | (22,742)          | (17,165,512)      | (18)           | (431,240)        | (473,870)        | (12,613)      | (190,293)        |
| <b>Net Production Energy</b>                                   | <b>183,243,774</b> | <b>183,375</b> | <b>183,060,398</b> | <b>491,827</b>   | <b>44,218,905</b>  | <b>4,399,801</b>  | <b>38,446,832</b>  | <b>4,857,713</b>  | <b>42,969,560</b>  | <b>6,659,316</b>  | <b>22,742,737</b> | <b>17,165,512</b> | <b>182</b>     | <b>431,240</b>   | <b>473,870</b>   | <b>12,613</b> | <b>190,293</b>   |
| 12 less: Transmission Loss - Energy                            | 1,636,832          | 1,632          | 1,635,200          | 4,609            | 405,400            | 42,080            | 354,013            | 44,087            | 374,129            | 58,939            | 192,640           | 149,424           | 2              | 3,897            | 4,282            | 114           | 1,381            |
| 13 less: Distribution Loss - Energy                            | 10,482,125         | 4,364          | 10,477,761         | 44,502           | 3,914,720          | 406,341           | 3,124,777          | 363,816           | 1,716,389          | 260,136           | 551,676           | 8                 | 12             | 37,630           | 41,347           | 1,102         | 15,310           |
| 12 less: Spinning Reserve                                      | 0                  | 0              | 0                  | 0                | 0                  | 0                 | 0                  | 0                 | 0                  | 0                 | 0                 | 0                 | 0              | 0                | 0                | 0             | 0                |
| <b>Net Production Energy Less Loss &amp; Ancillary</b>         | <b>171,124,818</b> | <b>177,380</b> | <b>170,947,438</b> | <b>442,711</b>   | <b>39,898,785</b>  | <b>3,951,380</b>  | <b>34,968,047</b>  | <b>4,449,810</b>  | <b>40,879,042</b>  | <b>6,340,241</b>  | <b>21,998,422</b> | <b>17,016,080</b> | <b>168</b>     | <b>389,713</b>   | <b>428,241</b>   | <b>11,399</b> | <b>173,398</b>   |
| <b>Production Capacity Cost</b>                                | <b>638,609,502</b> | <b>550,247</b> | <b>638,059,255</b> | <b>1,997,020</b> | <b>203,402,383</b> | <b>15,562,436</b> | <b>171,135,304</b> | <b>16,514,038</b> | <b>127,295,555</b> | <b>18,659,333</b> | <b>47,336,590</b> | <b>30,411,799</b> | <b>815</b>     | <b>946,483</b>   | <b>3,833,774</b> | <b>79,371</b> | <b>884,351</b>   |
| less: Other Revenue (17,725,476)                               | (17,725,476)       | (17,296)       | (17,708,179)       | (62,707)         | (3,008,006)        | (620,580)         | (4,461,788)        | (518,668)         | (3,475,999)        | (605,901)         | (1,462,429)       | (1,386,277)       | (24)           | (44,852)         | (49,292)         | (1,311)       | (10,344)         |
| <b>Net Production Capacity Cost</b>                            | <b>620,884,026</b> | <b>532,951</b> | <b>620,351,075</b> | <b>1,934,313</b> | <b>198,394,377</b> | <b>14,941,857</b> | <b>166,673,516</b> | <b>15,995,370</b> | <b>123,819,556</b> | <b>18,053,432</b> | <b>45,874,160</b> | <b>29,025,522</b> | <b>791</b>     | <b>901,631</b>   | <b>3,784,482</b> | <b>78,060</b> | <b>874,009</b>   |
| 129 less: Transmission Loss - Demand                           | 2,653,834          | 2,302          | 2,651,532          | 8,353            | 840,517            | 66,077            | 709,330            | 69,076            | 328,568            | 78,197            | 197,621           | 130,420           | 3              | 4,072            | 15,506           | 323           | 3,569            |
| 129 less: Distribution Loss - Demand                           | 18,456,212         | 7,684          | 18,448,528         | 58,092           | 5,845,415          | 459,337           | 4,930,979          | 480,390           | 3,675,954          | 543,825           | 1,375,753         | 907,010           | 24             | 28,317           | 107,839          | 2,248         | 24,872           |
| 129 less: Reactive Power                                       | 4,021,675          | 3,488          | 4,018,187          | 12,658           | 1,273,737          | 100,135           | 1,074,478          | 104,679           | 801,004            | 118,501           | 299,781           | 197,641           | 5              | 6,170            | 23,499           | 490           | 5,409            |
| 129 less: Regulation & Frequency Control                       | 5,187,040          | 5,002          | 5,181,978          | 14,594           | 1,253,069          | 109,454           | 1,406,109          | 135,991           | 1,107,378          | 158,796           | 426,677           | 2,979             | 3,274          | 87               | 1,634            | 87            | 1,634            |
| 129 less: Operating Spinning Reserve                           | 8,913,265          | 8,698          | 8,904,567          | 25,078           | 2,161,831          | 188,083           | 2,416,219          | 233,683           | 1,902,887          | 334,934           | 891,484           | 733,190           | 3              | 5,120            | 5,626            | 150           | 6,779            |
| 129 less: Operating Reserve Supplemental (Q.S.)                | 9,882,219          | 9,648          | 9,872,571          | 22,819           | 2,399,055          | 208,065           | 2,600,239          | 259,217           | 2,110,816          | 321,332           | 988,897           | 813,306           | 3              | 3,672            | 6,241            | 106           | 6,965            |
| <b>Total Net Retail Production Cost</b>                        | <b>571,764,781</b> | <b>490,349</b> | <b>571,274,432</b> | <b>1,779,707</b> | <b>182,837,426</b> | <b>13,718,848</b> | <b>153,550,239</b> | <b>14,716,863</b> | <b>114,036,396</b> | <b>16,606,099</b> | <b>42,712,741</b> | <b>26,611,613</b> | <b>728</b>     | <b>826,270</b>   | <b>3,497,480</b> | <b>72,078</b> | <b>807,947</b>   |
| <b>Generation Products &amp; Schedule</b>                      |                    |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |                |                  |                  |               |                  |
| 12 add: Transmission Loss - Energy                             | 1,636,832          | 1,632          | 1,635,200          | 4,609            | 405,400            | 42,080            | 354,013            | 44,087            | 374,129            | 58,939            | 192,640           | 149,424           | 2              | 3,897            | 4,282            | 114           | 1,381            |
| 12 add: Transmission Loss - Demand                             | 2,653,834          | 2,302          | 2,651,532          | 8,353            | 840,517            | 66,077            | 709,330            | 69,076            | 328,568            | 78,197            | 197,621           | 130,420           | 3              | 4,072            | 15,506           | 323           | 3,569            |
| 13 add: Distribution Loss - Energy                             | 10,482,125         | 4,364          | 10,477,761         | 44,502           | 3,914,720          | 406,341           | 3,124,777          | 363,816           | 1,716,389          | 260,136           | 551,676           | 8                 | 12             | 37,630           | 41,347           | 1,102         | 15,310           |
| 13 add: Distribution Loss - Demand                             | 18,456,212         | 7,684          | 18,448,528         | 58,092           | 5,845,415          | 459,337           | 4,930,979          | 480,390           | 3,675,954          | 543,825           | 1,375,753         | 907,010           | 24             | 28,317           | 107,839          | 2,248         | 24,872           |
| Ancillary Services   |                    |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |                |                  |                  |               |                  |
| 1 add: Reactive from Generation                                | 4,021,675          | 3,488          | 4,018,187          | 12,658           | 1,273,737          | 100,135           | 1,074,478          | 104,679           | 801,004            | 118,501           | 299,781           | 197,641           | 5              | 6,170            | 23,499           | 490           | 5,409            |
| 1 add: Regulation & Frequency Control                          | 5,187,040          | 5,002          | 5,181,978          | 14,594           | 1,253,069          | 109,454           | 1,406,109          | 135,991           | 1,107,378          | 158,796           | 426,677           | 2,979             | 3,274          | 87               | 1,634            | 87            | 1,634            |
| 1 add: Spinning Reserve  | 8,913,265          | 8,698          | 8,904,567          | 25,078           | 2,161,831          | 188,083           | 2,416,219          | 233,683           | 1,902,887          | 334,934           | 891,484           | 733,190           | 3              | 5,120            | 5,626            | 150           | 6,779            |
| 1 add: Reserve Supplemental (Q.S.)                             | 9,882,219          | 9,648          | 9,872,571          | 22,819           | 2,399,055          | 208,065           | 2,600,239          | 259,217           | 2,110,816          | 321,332           | 988,897           | 813,306           | 3              | 3,672            | 6,241            | 106           | 6,965            |
| <b>Subtotal Generation Products</b>                            | <b>61,238,201</b>  | <b>43,221</b>  | <b>61,194,980</b>  | <b>215,089</b>   | <b>18,961,870</b>  | <b>1,838,410</b>  | <b>17,131,686</b>  | <b>1,853,534</b>  | <b>11,641,287</b>  | <b>1,892,546</b>  | <b>4,776,938</b>  | <b>50</b>         | <b>134,049</b> | <b>104,013</b>   | <b>4,233</b>     | <b>68,730</b> |                  |
| <b>Net Production Energy Less Loss &amp; Ancillary</b>         | <b>171,124,818</b> | <b>177,380</b> | <b>170,947,438</b> | <b>442,711</b>   | <b>39,898,785</b>  | <b>3,951,380</b>  | <b>34,968,047</b>  | <b>4,449,810</b>  | <b>40,879,042</b>  | <b>6,340,241</b>  | <b>21,998,422</b> | <b>17,016,080</b> | <b>168</b>     | <b>389,713</b>   | <b>428,241</b>   | <b>11,399</b> | <b>173,398</b>   |
| <b>Total Net Retail Production Cost</b>                        | <b>571,764,781</b> | <b>490,349</b> | <b>571,274,432</b> | <b>1,779,707</b> | <b>182,837,426</b> | <b>13,718,848</b> | <b>153,550,239</b> | <b>14,716,863</b> | <b>114,036,396</b> | <b>16,606,099</b> | <b>42,712,741</b> | <b>26,611,613</b> | <b>728</b>     | <b>826,270</b>   | <b>3,497,480</b> | <b>72,078</b> | <b>807,947</b>   |
| <b>Subtotal Generation Products</b>                            | <b>61,238,201</b>  | <b>43,221</b>  | <b>61,194,980</b>  | <b>215,089</b>   | <b>18,961,870</b>  | <b>1,838,410</b>  | <b>17,131,686</b>  | <b>1,853,534</b>  | <b>11,641,287</b>  | <b>1,892,546</b>  | <b>4,776,938</b>  | <b>50</b>         | <b>134,049</b> | <b>104,013</b>   | <b>4,233</b>     | <b>68,730</b> |                  |
| <b>Total Retail Production Cost</b>                            | <b>804,127,800</b> | <b>710,949</b> | <b>803,416,500</b> | <b>2,437,507</b> | <b>241,699,081</b> | <b>19,508,638</b> | <b>205,649,973</b> | <b>21,020,206</b> | <b>166,556,724</b> | <b>24,838,886</b> | <b>68,938,120</b> | <b>46,190,217</b> | <b>947</b>     | <b>1,350,032</b> | <b>4,089,734</b> | <b>87,710</b> | <b>1,050,075</b> |
| add: Gross Receipts Tax  | 23,924,833         | 34,561         | 23,890,273         | 111,491          | 11,189,060         | 687,852           | 3,411,234          | 706,232           | 2,763,564          | 982,944           | 2,479,053         | 1,043,311         | 22             | 61,234           | 201,021          | 4,208         | 49,135           |
| <b>Total Retail Production Cost W/GR1</b>                      | <b>828,052,633</b> | <b>745,510</b> | <b>827,307,125</b> | <b>2,548,998</b> | <b>252,887,141</b> | <b>20,396,497</b> | <b>209,061,207</b> | <b>21,726,438</b> | <b>169,320,289</b> | <b>25,821,830</b> | <b>71,417,174</b> | <b>47,233,528</b> | <b>969</b>     | <b>1,411,286</b> | <b>4,290,755</b> | <b>91,918</b> | <b>1,099,210</b> |
| <b>Net Production Energy Less Loss &amp; Ancillary</b>         | <b>171,124,818</b> | <b>177,380</b> | <b>170,947,438</b> | <b>442,711</b>   | <b>39,898,785</b>  | <b>3,951,380</b>  | <b>34,968,047</b>  | <b>4,449,810</b>  | <b>40,879,042</b>  | <b>6,340,241</b>  | <b>21,998,422</b> | <b>17,016,080</b> | <b>168</b>     | <b>389,713</b>   | <b>428,241</b>   | <b>11,399</b> | <b>173,398</b>   |
| <b>Total Net Retail Production Cost</b>                        | <b>571,764,781</b> | <b>490,349</b> | <b>571,274,432</b> | <b>1,779,707</b> | <b>182,837,426</b> | <b>13,718,848</b> | <b>153,550,239</b> | <b>14,716,863</b> | <b>114,036,396</b> | <b>16,606,099</b> | <b>42,712,741</b> | <b>26,611,613</b> | <b>728</b>     | <b>826,270</b>   | <b>3,497,480</b> | <b>72,078</b> | <b>807,947</b>   |
| <b>Net Reactive Power, Reg./Freq. CH &amp; Spinning Re</b>     | <b>18,121,980</b>  | <b>12,248</b>  | <b>18,104,732</b>  | <b>52,331</b>    | <b>4,693,638</b>   | <b>392,672</b>    | <b>4,896,806</b>   | <b>475,352</b>    | <b>3,811,269</b>   | <b>648,369</b>    | <b>1,210,061</b>  | <b>1,337,808</b>  | <b>9</b>       | <b>14,269</b>    | <b>33,399</b>    | <b>727</b>    | <b>15,942</b>    |
| <b>Total Basic Service</b>                                     | <b>761,011,579</b> | <b>684,977</b> | <b>760,336,602</b> | <b>2,274,749</b> | <b>227,429,848</b> | <b>18,067,900</b> | <b>193,415,092</b> | <b>19,641,025</b> | <b>158,726,706</b> | <b>23,594,690</b> | <b>65,921,224</b> | <b>44,985,200</b> | <b>906</b>     | <b>1,230,232</b> | <b>3,558,119</b> | <b>84,204</b> | <b>1,066,687</b> |
| <b>Total Basic Service (\$/kWh)</b>                            | <b>0.0613</b>      | <b>0.0535</b>  | <b>0.0613</b>      | <b>0.0672</b>    | <b>0.0764</b>      | <b>0.0585</b>     | <b>0.0738</b>      | <b>0.0598</b>     | <b>0.0550</b>      | <b>0.0518</b>     | <b>0.0437</b>     | <b>0.0374</b>     | <b>0.0697</b>  | <b>0.0430</b>    | <b>0.1259</b>    | <b>0.1006</b> | <b>0.0650</b>    |
| <b>Transmission Cost</b>                                       | <b>37,104,183</b>  | <b>31,401</b>  | <b>37,072,782</b>  | <b>89,660</b>    | <b>10,380,504</b>  | <b>477,279</b>    | <b>10,738,545</b>  | <b>870,945</b>    | <b>8,014,951</b>   | <b>1,124,305</b>  | <b>3,803,447</b>  | <b>1,461,837</b>  | <b>13</b>      | <b>6,221</b>     | <b>63,179</b>    | <b>1,688</b>  | <b>68,119</b>    |
| less: Off-System Revenues (2,201,621)                          | (2,201,621)        | (2,074)        | (2,199,547)        | (5,980)          | (515,460)          | (44,846)          | (576,975)          | (55,719)          | (453,718)          | (79,861)          | (288,073)         | (174,819)         | (1)            | (1,221)          | (1,341)          | (36)          | (1,497)          |
| less: Other Revenues (6,246,853)                               | (6,246,853)        | (5,884)        | (6,240,969)        | (16,968)         | (1,462,561)        | (127,243)         | (1,637,104)        | (158,095)         | (1,287,375)        | (226,596)         | (817,375)         | (496,031)         | (2)            | (3,464)          | (3,806)          | (101)         | (4,248)          |
| add: Gross Receipts Tax  | 1,318,887          | 1,072          | 1,317,803          | 3,071            | 386,725            | 14,046            | 392,337            | 72,843            | 288,753            | 37,442            | 124,176           | 36,405            | 0              | 71               | 3,683            | 71            | 2,812            |
| <b>Total Retail Transmission Cost</b>                          | <b>29,974,597</b>  | <b>24,522</b>  | <b>29,950,069</b>  | <b>69,785</b>    |                    |                   |                    |                   |                    |                   |                   |                   |                |                  |                  |               |                  |

**ADJUSTED COST OF SERVICE STUDY  
(1996)**

|  | Total<br>UTILITY   | FERC<br>JURIS. | PA PUC<br>JURIS.   | RA               | RS                 | RH                | GI/GM              | GMH               | GL                 | GLH               | L                 | HVPS              | AL         | SE               | SM               | SH            | TRAFFIC<br>SIGNALS |
|--|--------------------|----------------|--------------------|------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|-------------------|------------|------------------|------------------|---------------|--------------------|
| <b>Basis for Retail Rates</b>          |                    |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                    |
| <b>Transmission</b>                    |                    |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                    |
| Reactive Power                         | 4,021,675          | 3,488          | 4,018,187          | 12,658           | 1,273,737          | 100,135           | 1,074,478          | 104,679           | 801,004            | 118,501           | 299,781           | 197,641           | 5          | 6,170            | 23,499           | 490           | 3,409              |
| Regulation & Frequency Control         | 5,187,040          | 4,499          | 5,182,541          | 16,327           | 1,642,829          | 129,151           | 1,385,831          | 135,012           | 1,033,111          | 132,840           | 386,649           | 254,911           | 7          | 7,950            | 30,308           | 632           | 6,976              |
| Operating Spinning Reserve             | 8,913,265          | 7,731          | 8,905,534          | 28,053           | 2,822,992          | 221,929           | 2,381,373          | 232,000           | 1,775,270          | 262,635           | 664,408           | 438,032           | 11         | 13,675           | 52,080           | 1,085         | 11,988             |
| Gross Receipts Tax                     | 542,753            | 758            | 541,995            | 2,619            | 264,702            | 20,713            | 80,519             | 15,975            | 59,804             | 21,239            | 48,804            | 20,116            | 1          | 1,278            | 4,998            | 102           | 1,173              |
| Total Retail Transmission Cost         | 29,976,321         | 24,522         | 29,950,069         | 69,283           | 8,789,208          | 319,234           | 8,916,806          | 635,075           | 6,562,612          | 855,490           | 2,822,175         | 827,392           | 11         | 1,602            | 83,715           | 1,623         | 63,337             |
| <b>Total</b>                           | <b>48,639,324</b>  | <b>40,998</b>  | <b>48,598,326</b>  | <b>129,444</b>   | <b>14,793,468</b>  | <b>791,162</b>    | <b>13,839,007</b>  | <b>1,122,740</b>  | <b>10,231,801</b>  | <b>1,410,706</b>  | <b>4,221,818</b>  | <b>1,738,091</b>  | <b>34</b>  | <b>30,689</b>    | <b>194,599</b>   | <b>3,932</b>  | <b>99,835</b>      |
| \$/kWh                                 | 0.0039             | 0.0032         | 0.0039             | 0.0038           | 0.0050             | 0.0026            | 0.0053             | 0.0034            | 0.0035             | 0.0031            | 0.0028            | 0.0014            | 0.0027     | 0.0011           | 0.0062           | 0.0047        | 0.0078             |
| <b>Distribution</b>                    |                    |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                    |
| Loss Demand                            | 18,456,212         | 16,007         | 18,440,205         | 58,092           | 5,845,415          | 439,537           | 4,930,979          | 480,390           | 3,675,954          | 543,825           | 1,375,753         | 907,010           | 24         | 28,317           | 107,839          | 2,248         | 24,827             |
| Loss Energy                            | 10,482,125         | 4,364          | 10,477,761         | 44,502           | 3,914,720          | 406,341           | 3,124,772          | 363,816           | 1,716,389          | 260,136           | 551,676           | 8                 | 12         | 37,630           | 41,347           | 1,102         | 15,310             |
| Gross Receipts Tax                     | 881,657            | 983            | 880,674            | 4,711            | 450,127            | 39,747            | 133,970            | 28,591            | 89,346             | 31,977            | 69,636            | 20,487            | 1          | 3,031            | 7,043            | 155           | 1,853              |
| Total Distribution Cost                | 29,819,994         | 21,354         | 29,798,640         | 107,305          | 10,210,262         | 885,625           | 8,189,721          | 872,807           | 5,482,179          | 835,938           | 1,937,066         | 915,505           | 37         | 69,018           | 156,229          | 3,463         | 42,040             |
| <b>Total</b>                           | <b>77,773,900</b>  | <b>62,704</b>  | <b>77,695,196</b>  | <b>236,749</b>   | <b>24,993,730</b>  | <b>1,676,787</b>  | <b>22,028,728</b>  | <b>1,995,547</b>  | <b>15,713,980</b>  | <b>2,246,644</b>  | <b>6,158,884</b>  | <b>2,653,596</b>  | <b>71</b>  | <b>100,707</b>   | <b>353,828</b>   | <b>7,395</b>  | <b>141,875</b>     |
| \$/kWh                                 | 0.0224             | 0.0063         | 0.0224             | 0.0267           | 0.0427             | 0.0212            | 0.0266             | 0.0190            | 0.0123             | 0.0089            | 0.0085            | 0.0036            | 0.0288     | 0.0633           | 0.2523           | 0.0888        | 0.0478             |
| <b>Net Production Energy</b>           | <b>183,243,774</b> | <b>181,375</b> | <b>183,060,398</b> | <b>491,822</b>   | <b>44,218,903</b>  | <b>4,399,801</b>  | <b>38,446,832</b>  | <b>4,857,713</b>  | <b>42,969,560</b>  | <b>6,859,316</b>  | <b>22,742,737</b> | <b>17,165,512</b> | <b>181</b> | <b>431,240</b>   | <b>473,870</b>   | <b>12,615</b> | <b>180,291</b>     |
| Add: Gross Receipt Taxes               | 5,451,966          | 8,847          | 5,443,119          | 22,583           | 2,039,378          | 201,948           | 1,649,386          | 164,516           | 711,967            | 266,873           | 821,670           | 307,713           | 4          | 19,818           | 22,370           | 583           | 8,783              |
| <b>Net Production Energy w/GRT</b>     | <b>188,695,740</b> | <b>192,222</b> | <b>188,503,517</b> | <b>514,405</b>   | <b>46,258,281</b>  | <b>4,601,749</b>  | <b>39,096,219</b>  | <b>5,022,229</b>  | <b>43,681,526</b>  | <b>7,126,189</b>  | <b>23,564,407</b> | <b>17,473,225</b> | <b>186</b> | <b>451,058</b>   | <b>496,240</b>   | <b>13,201</b> | <b>189,074</b>     |
| <b>Net Production Capacity</b>         | <b>620,884,026</b> | <b>532,951</b> | <b>620,351,075</b> | <b>1,934,313</b> | <b>198,394,377</b> | <b>14,941,857</b> | <b>166,673,516</b> | <b>15,995,370</b> | <b>123,819,556</b> | <b>18,053,432</b> | <b>45,874,160</b> | <b>29,025,522</b> | <b>791</b> | <b>901,631</b>   | <b>3,784,482</b> | <b>78,060</b> | <b>874,029</b>     |
| Add: Gross Receipt Taxes               | 18,472,870         | 25,713         | 18,447,157         | 86,819           | 9,149,732          | 665,890           | 2,771,848          | 541,716           | 2,951,378          | 718,071           | 1,657,383         | 655,596           | 18         | 41,456           | 178,621          | 3,623         | 40,147             |
| <b>Net Production Capacity w/GRT</b>   | <b>639,356,896</b> | <b>558,664</b> | <b>638,797,832</b> | <b>2,021,132</b> | <b>207,544,109</b> | <b>15,607,747</b> | <b>169,445,364</b> | <b>16,537,086</b> | <b>126,770,934</b> | <b>18,771,503</b> | <b>47,531,544</b> | <b>29,681,118</b> | <b>809</b> | <b>943,087</b>   | <b>3,963,103</b> | <b>81,683</b> | <b>914,176</b>     |
| <b>Net Total Production Costs</b>      | <b>804,127,800</b> | <b>716,326</b> | <b>803,411,474</b> | <b>2,426,135</b> | <b>242,613,282</b> | <b>19,341,657</b> | <b>205,120,348</b> | <b>20,853,083</b> | <b>166,789,116</b> | <b>24,712,748</b> | <b>68,616,898</b> | <b>46,191,034</b> | <b>923</b> | <b>1,332,871</b> | <b>4,258,352</b> | <b>90,675</b> | <b>1,064,302</b>   |
| Add: Gross Receipt Taxes               | 23,924,835         | 34,561         | 23,890,275         | 111,401          | 11,189,060         | 887,859           | 3,411,234          | 706,232           | 2,763,544          | 982,944           | 2,479,053         | 1,043,311         | 22         | 61,254           | 201,021          | 4,208         | 49,132             |
| <b>Net Total Production Cost w/GRT</b> | <b>828,052,635</b> | <b>750,887</b> | <b>827,301,748</b> | <b>2,537,536</b> | <b>253,802,342</b> | <b>20,229,516</b> | <b>208,531,582</b> | <b>21,559,314</b> | <b>169,552,660</b> | <b>25,695,692</b> | <b>71,095,951</b> | <b>47,234,345</b> | <b>945</b> | <b>1,394,125</b> | <b>4,459,373</b> | <b>94,883</b> | <b>1,113,434</b>   |

### COST OF SERVICE STUDY

(By FERC Account - 1996)

| FERC<br>ACCT                       | Description of Account                    | Total<br>UTILITY | FERC<br>AURIS. | PA PUC<br>AURIS. | BA        | RS          | BH         | GS/GM       | GMH        | GL          | GAH        | L           | HVPS        | AL        | SE        | SM        | SH      | TRAFFIC<br>SIGNALS |
|------------------------------------|---|------------------|----------------|------------------|-----------|-------------|------------|-------------|------------|-------------|------------|-------------|-------------|-----------|-----------|-----------|---------|--------------------|
| <b>ELECTRIC PLANT IN SERVICE</b>   |   |                  |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| <b>Intangible Plant (P204)</b>     |   |                  |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 301                                | Total Organization                        | 100,275          |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
|                                    | Production                                | 60,321           | 59             | 60,263           | 213       | 17,043      | 2,152      | 15,184      | 1,765      | 11,829      | 2,062      | 4,977       | 4,718       | 0         | 153       | 168       | 4       | 35                 |
|                                    | Transmission                              | 2,379            | 2              | 2,377            | 6         | 557         | 48         | 624         | 60         | 490         | 86         | 311         | 189         | 0         | 1         | 1         | 0       | 2                  |
|                                    | Distribution                              | 37,574           | 11             | 37,563           | 134       | 14,498      | 1,281      | 9,546       | 1,155      | 5,335       | 817        | 2,598       | 344         | 0         | 560       | 1,258     | 9       | 26                 |
| 302                                | Total Franchises & Convents               | 6,830            |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
|                                    | Production                                | 4,109            | 4              | 4,105            | 15        | 1,161       | 144        | 1,034       | 120        | 806         | 140        | 339         | 321         | 0         | 10        | 11        | 0       | 7                  |
|                                    | Transmission                              | 162              | 0              | 162              | 0         | 38          | 3          | 42          | 4          | 33          | 6          | 21          | 13          | 0         | 0         | 0         | 0       | 1                  |
|                                    | Distribution                              | 2,559            | 1              | 2,558            | 9         | 987         | 87         | 650         | 79         | 363         | 56         | 177         | 23          | 0         | 38        | 86        | 1       | 7                  |
| 303                                | Total Miscellaneous Intangible Plant      | 43,993,420       |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
|                                    | Production                                | 26,464,671       | 25,824         | 26,438,848       | 93,624    | 7,477,105   | 926,544    | 6,661,585   | 774,387    | 3,189,771   | 904,629    | 2,183,451   | 2,069,753   | 36        | 66,965    | 73,595    | 1,958   | 15,441             |
|                                    | Transmission                              | 1,043,832        | 983            | 1,042,849        | 2,835     | 244,390     | 21,262     | 273,556     | 26,417     | 215,117     | 37,864     | 82,885      | 0           | 0         | 579       | 636       | 17      | 711                |
|                                    | Distribution                              | 16,484,916       | 4,812          | 16,480,104       | 58,964    | 6,360,791   | 561,996    | 4,188,019   | 506,880    | 2,340,494   | 358,517    | 1,139,905   | 150,729     | 23        | 245,758   | 552,044   | 3,865   | 12,119             |
|                                    | Total Intangible Plant                    | 44,100,525       | 31,696         | 44,068,829       | 155,801   | 14,116,570  | 1,513,478  | 11,190,239  | 1,310,868  | 7,764,239   | 1,304,177  | 3,468,360   | 2,308,975   | 60        | 314,065   | 627,800   | 5,854   | 28,141             |
|                                    | Total Intangible Plant - Class Percentage | 100%             | 0.0719%        | 99.9281%         | 0.3533%   | 32.0100%    | 3.4319%    | 25.2837%    | 2.9725%    | 17.6058%    | 2.9573%    | 7.8647%     | 5.2357%     | 0.0001%   | 0.7122%   | 1.4236%   | 0.0131% | 0.0645%            |
| <b>Intangible Plant Summary</b>    |   |                  |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
|                                    | Production                                | 26,529,102       | 25,887         | 26,503,215       | 93,852    | 7,495,309   | 928,800    | 6,677,803   | 776,273    | 3,202,406   | 906,831    | 2,188,767   | 2,074,792   | 37        | 67,128    | 73,774    | 1,962   | 15,481             |
|                                    | Transmission                              | 1,046,373        | 986            | 1,045,388        | 2,842     | 244,985     | 21,314     | 274,222     | 26,482     | 215,641     | 37,956     | 136,914     | 83,087      | 0         | 580       | 638       | 17      | 712                |
|                                    | Distribution                              | 16,525,049       | 4,824          | 16,520,226       | 59,107    | 6,376,277   | 563,368    | 4,198,215   | 508,114    | 2,346,192   | 359,390    | 1,142,080   | 151,026     | 23        | 246,356   | 553,388   | 3,875   | 12,149             |
|                                    | Total                                     | 44,100,525       | 31,696         | 44,068,829       | 155,801   | 14,116,570  | 1,513,478  | 11,190,239  | 1,310,868  | 7,764,239   | 1,304,177  | 3,468,360   | 2,308,975   | 60        | 314,065   | 627,800   | 5,854   | 28,141             |
| <b>Production Plant</b>            |   |                  |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| <b>A: Steam Production Plant</b>   |   |                  |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 310                                | Land & Land Rights                        | 8,026,760        | 7,805          | 8,018,955        | 29,319    | 2,312,380   | 292,915    | 2,065,771   | 237,847    | 1,532,553   | 272,041    | 617,257     | 611,035     | 11        | 20,502    | 22,532    | 599     | 4,192              |
| 311                                | Structures & Improvements                 | 128,853,875      |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 312                                | Boiler Plant Equipment                    | 484,460,835      |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 313                                | Engines and Engine Driven Motors          | 0                |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 314                                | Turbogenerators                           | 115,768,800      |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 315                                | Accessory Electric Equipment              | 78,729,366       |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 316                                | Misc Power Plant Equipment                | 24,280,712       |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
|                                    | Total A/C 311-316                         | 832,093,588      |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
|                                    | Energy                                    | 158,924,071      | 158,427        | 158,765,645      | 447,487   | 39,361,260  | 4,085,663  | 34,372,020  | 4,280,496  | 36,325,098  | 5,722,558  | 18,703,870  | 14,507,970  | 167       | 378,348   | 415,759   | 11,067  | 153,681            |
|                                    | Demand                                    | 673,169,517      | 654,604        | 672,514,912      | 2,458,875 | 193,929,258 | 24,565,497 | 173,247,265 | 19,947,235 | 128,528,363 | 22,814,871 | 51,766,642  | 962         | 1,719,418 | 1,889,677 | 50,260    | 351,529 |                    |
|                                    | Total Steam Production Plant              | 840,120,348      | 820,836        | 839,299,512      | 2,935,682 | 235,602,896 | 28,944,076 | 209,685,052 | 24,465,578 | 166,386,214 | 28,809,470 | 71,087,768  | 66,363,819  | 1,141     | 2,118,268 | 2,327,968 | 61,926  | 510,651            |
| <b>B: Nuclear Production Plant</b> |   |                  |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 320                                | Land & Land Rights                        | 617,903          | 601            | 617,302          | 2,257     | 178,008     | 22,549     | 159,024     | 18,310     | 117,977     | 20,942     | 47,517      | 47,038      | 1         | 1,578     | 1,735     | 46      | 375                |
| 321                                | Structures & Improvements                 | 229,416,299      |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 322                                | Reactor Plant Equipment                   | 899,156,421      |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 323                                | Turbogenerators                           | 119,726,878      |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 324                                | Accessory Electric Equipment              | 161,470,226      |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 325                                | Misc Power Plant Equipment                | 72,991,217       |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
|                                    | Total A/C 321-325                         | 1,482,761,041    |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
|                                    | Energy                                    | 164,231,399      | 163,717        | 164,067,682      | 462,431   | 40,675,744  | 4,222,106  | 35,519,886  | 4,423,445  | 37,538,188  | 5,913,665  | 19,328,492  | 14,992,470  | 173       | 390,983   | 429,643   | 11,436  | 139,019            |
|                                    | Demand                                    | 1,318,529,642    | 1,282,166      | 1,317,247,476    | 4,816,172 | 379,847,080 | 48,116,166 | 339,337,483 | 39,070,427 | 251,747,467 | 44,687,234 | 101,394,745 | 100,372,647 | 1,884     | 3,367,805 | 3,701,289 | 98,444  | 688,634            |
|                                    | Total Nuclear Production Plant            | 1,483,378,944    | 1,446,484      | 1,481,932,460    | 5,280,860 | 420,700,832 | 52,360,820 | 375,916,393 | 43,512,181 | 289,403,631 | 50,621,841 | 120,770,754 | 115,412,155 | 2,058     | 3,760,366 | 4,132,667 | 109,926 | 847,976            |
| <b>D: Other Production Plant</b>   |   |                  |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 340                                | Land & Land Rights                        | 393,704          | 383            | 393,321          | 1,438     | 113,420     | 14,367     | 101,324     | 11,666     | 75,170      | 13,343     | 30,276      | 29,971      | 1         | 1,006     | 1,105     | 29      | 206                |
| 341                                | Structures & Improvements                 | 8,150,271        |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 342                                | Fuel Holders, Products and Accessories    | 3,371,626        |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 343                                | Prime Movers                              | 436,877          |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 344                                | Generator                                 | 22,779,984       |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 345                                | Accessory Electric Equipment              | 6,674,134        |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
| 346                                | Misc Power Plant Equipment                | 1,092,833        |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
|                                    | Total A/C 341-346                         | 42,505,725       |                |                  |           |             |            |             |            |             |            |             |             |           |           |           |         |                    |
|                                    | Energy                                    | 1,980,242        | 1,974          | 1,978,268        | 5,576     | 490,453     | 50,909     | 428,286     | 53,336     | 452,622     | 71,305     | 233,056     | 180,774     | 2         | 4,714     | 5,180     | 138     | 1,917              |
|                                    | Demand                                    | 40,525,483       | 39,408         | 40,486,075       | 148,027   | 11,674,737  | 1,478,868  | 10,429,660  | 1,200,844  | 7,737,549   | 1,373,478  | 3,116,404   | 3,084,989   | 58        | 103,511   | 113,760   | 3,026   | 21,165             |
|                                    | Total Other Production Plant              | 42,899,429       | 41,765         | 42,857,664       | 155,041   | 12,278,610  | 1,544,143  | 10,959,269  | 1,265,846  | 8,265,341   | 1,458,126  | 3,379,736   | 3,295,734   | 61        | 109,231   | 120,046   | 3,193   | 23,288             |
|                                    | Production Plant - Energy Related         | 325,135,713      | 324,118        | 324,811,595      | 915,495   | 80,527,457  | 8,358,678  | 70,320,192  | 8,757,277  | 74,315,908  | 11,707,529 | 38,265,418  | 29,681,214  | 343       | 774,045   | 850,583   | 22,641  | 314,817            |
|                                    | Production Plant - Demand Related         | 2,041,263,008    | 1,984,967      | 2,039,278,041    | 7,456,088 | 588,054,882 | 74,490,362 | 525,340,522 | 60,486,328 | 389,739,279 | 69,181,909 | 156,972,839 | 153,390,494 | 2,917     | 5,213,820 | 5,730,098 | 152,404 | 1,066,099          |
|                                    | Total Production Plant                    | 2,366,398,721    | 2,309,085      | 2,364,089,636    | 8,371,583 | 668,582,339 | 82,849,039 | 595,660,714 | 69,243,606 | 464,055,186 | 80,889,437 | 195,238,257 | 185,071,708 | 3,259     | 5,987,865 | 6,580,681 | 175,045 | 1,380,915          |
|                                    | Total Production Plant - Class Percentage | 100%             | 0.0976%        | 99.9024%         | 0.3538%   | 28.2532%    | 3.5011%    | 25.1716%    | 2.9261%    | 19.6102%    | 3.4183%    | 8.2504%     | 7.8208%     | 0.0001%   | 0.2530%   | 0.2781%   | 0.0074% | 0.0584%            |



**COST OF SERVICE STUDY**  
(By FERC Account - 1996)

| FERC<br>ACCT | Description of Account                           | Total<br>Utility | FERC<br>JURIS. | PA-PUC<br>JURIS. | RA         | RS          | RH          | GS/GM       | GMH         | GL          | GLH         | L           | HVPS        | AL      | SE         | SM         | SH      | TRAFIC<br>SIGNALS |
|--------------|--|------------------|----------------|------------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------|------------|------------|---------|-------------------|
| 368          | Line Transformer                                 | 150,946,402      |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
|              | Primary  | 8                | 0              | 20,227,095       | 120,697    | 9,519,297   | 1,251,889   | 7,692,232   | 865,923     | 532,222     | 53,538      | 0           | 0           | 46      | 81,986     | 90,105     | 2,397   | 16,000            |
|              | Secondary Network                                | 7                | 0              | 20,521,775       | 0          | 0           | 0           | 4,183,884   | 785,902     | 11,287,076  | 1,885,925   | 2,378,987   | 0           | 0       | 0          | 0          | 0       | 0                 |
|              | Capacity   | 4                | 37,327         | 68,372,716       | 252,943    | 31,114,787  | 1,730,863   | 13,893,462  | 1,924,140   | 10,171,560  | 1,603,548   | 3,836,387   | 3,621,588   | 54      | 95,761     | 105,243    | 2,799   | 19,581            |
|              | Customer   | 17               | 35             | 21,991,368       | 97,802     | 17,149,073  | 787,354     | 1,734,596   | 108,018     | 3,417       | 345         | 0           | 0           | 69      | 0          | 2,024,310  | 28,057  | 58,311            |
|              | Direct Assignment                                | 64               | 0              | 19,796,091       | 0          | 2,681,576   | 163,089     | 5,025,226   | 1,242,730   | 8,831,158   | 1,852,313   | 0           | 0           | 0       | 0          | 0          | 0       | 0                 |
| 369          | Services   | 57,792,430       |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
|              | Capacity   | 4                | 6,877          | 12,596,963       | 46,602     | 5,732,577   | 318,894     | 2,559,726   | 354,503     | 1,874,004   | 295,437     | 706,814     | 667,240     | 10      | 17,643     | 19,390     | 516     | 1,048             |
|              | Customer   | 18               | 78             | 45,188,590       | 222,304    | 38,979,754  | 1,789,653   | 3,942,727   | 245,523     | 7,766       | 784         | 0           | 0           | 0       | 0          | 0          | 0       | 0                 |
| 370          | Meters   | 40               | 5,109          | 59,652,919       | 144,779    | 25,386,063  | 1,165,534   | 27,424,151  | 1,907,818   | 2,648,314   | 474,592     | 398,473     | 98,086      | 0       | 0          | 0          | 0       | 0                 |
| 371          | Installations on Cust Premises                   | 20               | 0              | 37,793           | 0          | 0           | 0           | 4,564       | 0           | 13,825      | 0           | 2,218       | 17,186      | 0       | 0          | 0          | 0       | 0                 |
| 372          | Leased Property on Customer Premise              | 0                | 0              | 0                | 0          | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0       | 0          | 0          | 0       | 0                 |
| 373          | Street Lights & Signal Systems                   | 19               | 0              | 22,510,688       | 0          | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0       | 6,749,768  | 15,760,920 | 0       | 0                 |
|              | Total Distribution Plant                         | 1,233,225,730    | 359,992        | 1,232,865,738    | 4,411,052  | 475,846,599 | 42,042,559  | 313,302,916 | 37,919,335  | 175,090,817 | 26,820,438  | 85,275,511  | 11,273,923  | 1,748   | 18,384,996 | 41,298,065 | 289,165 | 906,616           |
|              | Total Distribution Plant - Class Percentage      | 100%             | 0.0292%        | 99.9708%         | 0.3577%    | 38.5855%    | 3.4092%     | 25.4052%    | 3.0748%     | 14.1978%    | 2.1748%     | 6.9148%     | 0.9143%     | 0.0001% | 1.4908%    | 3.3488%    | 0.0234% | 0.0735%           |
|              | General Plant                                    |                  |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
| 389          | Land & Land Rights                               | 6,199,971        |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
|              | Production                                       | 100              | 3,639          | 3,726,014        | 13,194     | 1,053,745   | 130,577     | 938,814     | 109,134     | 731,392     | 127,489     | 307,713     | 291,689     | 5       | 9,437      | 10,372     | 276     | 2,310             |
|              | Transmission                                     | 101              | 139            | 148,968          | 400        | 34,442      | 2,996       | 38,552      | 3,723       | 30,316      | 5,336       | 19,248      | 11,681      | 0       | 82         | 90         | 2       | 181               |
|              | Distribution                                     | 102              | 678            | 2,322,533        | 8,310      | 896,423     | 79,202      | 590,215     | 71,434      | 329,845     | 50,526      | 160,646     | 21,242      | 3       | 34,635     | 77,799     | 545     | 1,008             |
| 390          | Structures & Improvements                        | 64,438,073       |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
|              | Production                                       | 100              | 37,825         | 38,725,527       | 137,133    | 10,951,871  | 1,357,128   | 9,757,361   | 1,134,261   | 7,601,565   | 1,325,028   | 3,198,146   | 3,031,611   | 53      | 98,086     | 107,796    | 2,867   | 27,670            |
|              | Transmission                                     | 101              | 1,440          | 1,527,483        | 4,153      | 357,963     | 31,143      | 400,683     | 38,694      | 315,086     | 53,459      | 200,053     | 121,404     | 0       | 848        | 932        | 25      | 1,144             |
|              | Distribution                                     | 102              | 7,048          | 24,138,750       | 86,366     | 9,316,782   | 823,167     | 6,134,278   | 742,437     | 3,428,170   | 525,128     | 1,669,642   | 220,776     | 34      | 359,967    | 808,591    | 3,662   | 12,757            |
| 391          | Office Furniture & Equipment                     | 48,657,786       |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
|              | Production                                       | 100              | 28,562         | 29,242,004       | 103,550    | 8,269,859   | 1,024,780   | 7,367,873   | 856,491     | 5,740,012   | 1,000,541   | 2,414,950   | 2,289,197   | 40      | 74,065     | 81,398     | 7,165   | 12,081            |
|              | Transmission                                     | 101              | 1,088          | 1,153,416        | 3,136      | 270,301     | 23,517      | 302,559     | 29,218      | 237,925     | 41,878      | 151,062     | 91,673      | 0       | 640        | 703        | 19      | 260               |
|              | Distribution                                     | 102              | 5,322          | 18,227,394       | 65,216     | 7,035,189   | 621,581     | 4,632,050   | 560,621     | 2,588,643   | 396,529     | 1,260,762   | 166,710     | 26      | 271,814    | 610,574    | 4,275   | 11,815            |
| 392          | Transportation Equipment                         | 16,877,412       |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
|              | Production                                       | 100              | 9,907          | 10,142,865       | 35,917     | 2,868,479   | 353,455     | 2,555,616   | 297,082     | 1,990,977   | 347,047     | 837,648     | 794,030     | 14      | 25,690     | 28,234     | 751     | 1,225             |
|              | Transmission                                     | 101              | 377            | 400,074          | 1,088      | 93,757      | 8,157       | 104,946     | 10,135      | 82,526      | 14,526      | 52,397      | 31,798      | 0       | 222        | 244        | 6       | 222               |
|              | Distribution                                     | 102              | 1,846          | 6,324,190        | 22,621     | 2,440,222   | 215,601     | 1,606,670   | 194,457     | 897,895     | 137,540     | 437,307     | 57,825      | 9       | 94,281     | 211,783    | 1,481   | 4,649             |
| 393          | Stores Equipment                                 | 2,340,839        |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
|              | Production                                       | 100              | 1,374          | 1,406,781        | 4,982      | 397,848     | 49,300      | 354,455     | 41,204      | 276,142     | 48,134      | 116,179     | 110,129     | 2       | 3,563      | 3,916      | 104     | 850               |
|              | Transmission                                     | 101              | 52             | 55,541           | 151        | 13,004      | 1,131       | 14,556      | 1,406       | 11,446      | 7,267       | 4,410       | 0           | 31      | 34         | 1          | 1       | 1                 |
|              | Distribution                                     | 102              | 256            | 876,887          | 3,137      | 338,450     | 29,903      | 272,840     | 26,970      | 124,535     | 19,076      | 60,653      | 8,020       | 1       | 13,076     | 29,374     | 206     | 643               |
| 394          | Tools, Shop & Garage Equipment                   | 9,830,485        |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
|              | Production                                       | 100              | 5,770          | 5,907,854        | 20,921     | 1,670,785   | 207,400     | 1,488,555   | 173,040     | 1,159,673   | 202,142     | 487,900     | 462,494     | 8       | 14,964     | 16,445     | 437     | 5,411             |
|              | Transmission                                     | 101              | 220            | 233,028          | 634        | 54,610      | 4,751       | 61,127      | 5,903       | 48,069      | 8,461       | 30,520      | 18,521      | 0       | 129        | 142        | 4       | 1,000             |
|              | Distribution                                     | 102              | 1,075          | 3,682,538        | 13,176     | 1,421,341   | 125,580     | 935,828     | 113,264     | 522,992     | 80,112      | 254,716     | 33,681      | 5       | 54,916     | 123,356    | 864     | 2,708             |
| 395          | Laboratory Equipment                             | 6,289,389        |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
|              | Production                                       | 100              | 3,692          | 3,779,751        | 13,385     | 1,068,942   | 132,461     | 952,354     | 110,708     | 741,940     | 129,328     | 312,151     | 295,896     | 5       | 9,574      | 10,521     | 180     | 2,208             |
|              | Transmission                                     | 101              | 141            | 149,087          | 405        | 34,938      | 3,040       | 39,108      | 3,777       | 30,753      | 5,413       | 19,526      | 11,849      | 0       | 83         | 91         | 2       | 181               |
|              | Distribution                                     | 102              | 688            | 2,356,717        | 8,430      | 909,352     | 80,344      | 598,728     | 72,465      | 334,602     | 51,254      | 162,963     | 21,548      | 3       | 35,134     | 78,921     | 553     | 1,718             |
| 396          | Power Operated Equipment                         | 1,304,358        |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
|              | Production                                       | 100              | 766            | 783,883          | 2,776      | 221,688     | 27,471      | 197,509     | 22,960      | 153,871     | 26,821      | 64,737      | 61,366      | 1       | 1,985      | 2,182      | 58      | 458               |
|              | Transmission                                     | 101              | 29             | 30,920           | 84         | 7,246       | 630         | 8,111       | 783         | 6,378       | 1,123       | 4,050       | 2,458       | 0       | 17         | 19         | 1       | 21                |
|              | Distribution                                     | 102              | 143            | 488,617          | 1,748      | 188,591     | 16,663      | 124,170     | 15,028      | 69,393      | 10,630      | 33,797      | 4,469       | 1       | 7,286      | 16,368     | 115     | 350               |
| 397          | Communication Equipment                          | 88,873,334       |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
|              | Production                                       | 100              | 52,168         | 53,410,454       | 189,134    | 15,104,878  | 1,871,758   | 13,457,404  | 1,564,379   | 10,484,120  | 1,827,486   | 4,410,900   | 4,181,214   | 74      | 135,280    | 148,673    | 3,955   | 31,198            |
|              | Transmission                                     | 101              | 1,986          | 2,106,712        | 5,727      | 493,704     | 42,953      | 552,623     | 53,367      | 434,569     | 76,490      | 275,914     | 167,441     | 1       | 1,169      | 1,285      | 34      | 4,434             |
|              | Distribution                                     | 102              | 9,721          | 33,292,293       | 119,116    | 12,849,756  | 1,135,317   | 8,460,428   | 1,023,973   | 4,728,190   | 724,259     | 2,302,779   | 304,495     | 47      | 496,468    | 1,115,217  | 7,809   | 24,480            |
| 398          | Misc Equipment                                   | 432,311          |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
|              | Production                                       | 100              | 254            | 259,807          | 920        | 73,475      | 9,105       | 65,462      | 7,610       | 50,998      | 8,890       | 21,456      | 20,339      | 0       | 658        | 723        | 19      | 150               |
|              | Transmission                                     | 101              | 10             | 10,247           | 28         | 2,401       | 209         | 2,688       | 260         | 2,114       | 372         | 814         | 0           | 6       | 6          | 0          | 0       | 0                 |
|              | Distribution                                     | 102              | 47             | 161,946          | 579        | 62,506      | 5,523       | 41,155      | 4,981       | 22,999      | 3,523       | 11,202      | 1,481       | 0       | 2,415      | 3,425      | 38      | 119               |
| 399          | Other Tangible Property                          | 0                |                |                  |            |             |             |             |             |             |             |             |             |         |            |            |         |                   |
|              | Production                                       | 100              | 0              | 0                | 0          | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0       | 0          | 0          | 0       | 0                 |
|              | Transmission                                     | 101              | 0              | 0                | 0          | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0       | 0          | 0          | 0       | 0                 |
|              | Distribution                                     | 102              | 0              | 0                | 0          | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0       | 0          | 0          | 0       | 0                 |
|              | Total General Plant                              | 245,243,958      | 176,263        | 245,067,695      | 866,413    | 78,502,549  | 8,416,484   | 62,006,715  | 7,289,765   | 43,177,098  | 7,252,556   | 19,287,626  | 12,840,261  | 335     | 1,746,522  | 1,491,211  | 32,355  | 157,000           |
|              | Total General & Intangible Plant                 | 289,344,483      | 207,959        | 289,136,524      | 1,022,215  | 92,619,119  | 9,929,963   | 73,156,954  | 8,600,633   | 50,941,336  | 8,556,732   | 22,755,986  | 15,149,237  | 395     | 2,060,587  | 4,119,010  | 38,409  | 185,918           |
|              | Total Electric Plant in Service                  | 4,201,155,690    | 3,171,113      | 4,197,984,576    | 14,652,750 | *****       | 141,180,648 | *****       | 123,664,389 | 754,423,974 | 127,590,733 | 344,118,086 | 236,286,025 | 5,493   | 26,600,547 | 52,187,974 | 507,680 | 2,685,701         |
|              | Total Gen. & Intangible Plant - Class Percentage | 100%             | 0.0719%        | 99.9281%         | 0.3533%    | 32.0100%    | 3.4319%     | 25.2837%</  |             |             |             |             |             |         |            |            |         |                   |

**COST OF SERVICE STUDY**  
(By FERC Account - 1996)

| FERC<br>ACCT  | Description of Account | Total<br>Utility     | FERC<br>JURIS.   | PA PUC<br>JURIS.     | RA                 | RS                   | RH                  | GS/GM                | GMI                 | GL                   | GLH                 | L                   | HVPS                | AL           | SE                 | SM                 | SH              | TRAFFIC<br>SIGNALS |
|---|------------------------|----------------------|------------------|----------------------|--------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|---------------------|---------------------|--------------|--------------------|--------------------|-----------------|--------------------|
| <b>General Plant Summary</b>  |                        |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                    |
| Production  |                        | 147,528,897          | 143,956          | 147,384,941          | 521,911            | 41,681,570           | 5,165,075           | 37,135,402           | 4,316,869           | 28,930,691           | 5,042,907           | 12,171,780          | 11,537,965          | 203          | 373,303            | 410,261            | 10,913          | 85,191             |
| Transmission  |                        | 5,818,906            | 5,481            | 5,813,425            | 15,804             | 1,362,366            | 118,528             | 1,524,952            | 147,265             | 1,199,182            | 211,072             | 761,380             | 462,050             | 2            | 3,226              | 3,546              | 94              | 3,957              |
| Distribution  |                        | 21,896,155           | 26,825           | 21,869,330           | 328,698            | 35,458,612           | 3,132,881           | 23,346,361           | 2,825,631           | 13,047,224           | 1,998,576           | 6,354,666           | 840,247             | 130          | 1,369,993          | 3,077,494          | 21,548          | 67,558             |
| <b>Total</b>  |                        | <b>245,243,958</b>   | <b>176,263</b>   | <b>245,067,695</b>   | <b>866,413</b>     | <b>78,502,549</b>    | <b>8,416,484</b>    | <b>62,006,715</b>    | <b>7,289,765</b>    | <b>43,177,098</b>    | <b>7,252,556</b>    | <b>19,287,626</b>   | <b>12,840,261</b>   | <b>335</b>   | <b>1,746,522</b>   | <b>3,491,210</b>   | <b>32,555</b>   | <b>152,646</b>     |
| <b>Total General &amp; Intangible Plant Summary</b>                                       |                        |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                    |
| Production  |                        | 174,057,999          | 169,842          | 173,888,156          | 615,763            | 49,176,879           | 4,093,875           | 43,813,205           | 5,093,141           | 34,133,097           | 5,949,739           | 14,360,547          | 13,612,757          | 240          | 440,431            | 484,035            | 12,875          | 101,572            |
| Transmission  |                        | 6,865,279            | 6,467            | 6,858,812            | 18,446             | 1,607,351            | 139,842             | 1,799,174            | 173,746             | 1,414,823            | 249,028             | 898,293             | 545,137             | 2            | 3,807              | 4,183              | 111             | 4,642              |
| Distribution  |                        | 108,421,204          | 31,849           | 108,389,555          | 382,893            | 41,834,889           | 3,698,245           | 27,544,576           | 3,698,245           | 13,393,416           | 2,352,966           | 7,497,146           | 991,343             | 154          | 1,616,349          | 3,630,792          | 25,422          | 77,710             |
| <b>Total</b>  |                        | <b>289,344,483</b>   | <b>207,959</b>   | <b>289,136,524</b>   | <b>1,022,215</b>   | <b>92,619,119</b>    | <b>9,929,963</b>    | <b>73,156,954</b>    | <b>8,600,633</b>    | <b>50,941,336</b>    | <b>8,556,732</b>    | <b>22,755,986</b>   | <b>15,149,237</b>   | <b>395</b>   | <b>2,060,587</b>   | <b>4,119,010</b>   | <b>38,409</b>   | <b>185,947</b>     |
| <b>Total Electric Plant in Service Summary (Excluding General &amp; Intangible Plant)</b> |                        |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                    |
| Production  |                        | 2,366,398,721        | 2,309,085        | 2,364,089,636        | 8,371,583          | 668,582,339          | 82,849,039          | 595,660,714          | 69,243,606          | 464,055,186          | 80,889,437          | 195,238,257         | 185,071,708         | 3,259        | 5,987,865          | 6,580,681          | 175,045         | 1,360,911          |
| Transmission  |                        | 312,186,756          | 294,078          | 311,892,678          | 847,900            | 73,091,533           | 6,359,087           | 81,814,322           | 7,900,816           | 64,336,635           | 11,324,125          | 40,848,332          | 24,789,158          | 90           | 173,099            | 190,218            | 5,061           | 212,365            |
| Distribution  |                        | 1,233,225,230        | 359,292          | 1,232,865,738        | 4,411,052          | 475,846,599          | 42,042,519          | 313,302,916          | 37,919,335          | 125,090,812          | 26,820,638          | 85,275,511          | 11,273,923          | 1,748        | 18,384,996         | 41,798,065         | 289,165         | 900,610            |
| <b>Total</b>  |                        | <b>3,911,811,207</b> | <b>2,963,155</b> | <b>3,908,848,052</b> | <b>13,630,535</b>  | <b>1,167,520,471</b> | <b>131,250,645</b>  | <b>990,777,951</b>   | <b>115,063,757</b>  | <b>703,482,638</b>   | <b>119,034,000</b>  | <b>321,362,100</b>  | <b>221,136,789</b>  | <b>5,098</b> | <b>24,545,960</b>  | <b>48,068,964</b>  | <b>469,271</b>  | <b>2,469,911</b>   |
| <b>Total Electric Plant in Service Summary (Including General &amp; Intangible Plant)</b> |                        |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                    |
| Production  |                        | 2,540,456,720        | 2,478,928        | 2,537,977,792        | 8,987,346          | 717,759,219          | 88,942,914          | 639,473,919          | 74,336,747          | 498,188,283          | 86,839,176          | 209,598,804         | 198,684,465         | 3,499        | 6,428,296          | 7,064,716          | 187,920         | 1,482,487          |
| Transmission  |                        | 319,052,035          | 300,545          | 318,751,491          | 866,546            | 74,690,884           | 6,498,929           | 83,613,495           | 8,074,563           | 65,751,458           | 11,573,153          | 41,746,625          | 25,334,295          | 92           | 176,906            | 194,401            | 5,172           | 216,971            |
| Distribution  |                        | 1,341,646,234        | 391,841          | 1,341,255,293        | 4,728,838          | 517,681,488          | 45,738,804          | 340,847,492          | 41,253,080          | 190,484,233          | 29,178,494          | 92,772,657          | 12,267,266          | 1,921        | 20,001,345         | 44,928,857         | 314,587         | 986,322            |
| <b>Total</b>  |                        | <b>4,201,155,690</b> | <b>3,171,113</b> | <b>4,197,984,576</b> | <b>14,632,750</b>  | <b>1,310,131,591</b> | <b>141,180,648</b>  | <b>1,064,135,906</b> | <b>123,664,390</b>  | <b>754,423,974</b>   | <b>127,590,733</b>  | <b>344,118,086</b>  | <b>236,786,025</b>  | <b>5,493</b> | <b>26,606,547</b>  | <b>52,187,974</b>  | <b>507,680</b>  | <b>2,685,781</b>   |
| <b>100 ACCUMULATED DEPRECIATION (P219)</b>  |                        |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                    |
| <b>Intangible Plant</b>   |                        |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                    |
| 301 Organization  |                        | 0                    |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                    |
| Production  | 100                    | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| Transmission  | 101                    | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| Distribution  | 102                    | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| 302 Franchises & Consents   |                        | 0                    |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                    |
| Production  | 100                    | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| Transmission  | 101                    | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| Distribution  | 102                    | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| 303 Miscellaneous Intangible Plant  |                        | 0                    |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                    |
| Production  | 100                    | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| Transmission  | 101                    | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| Distribution  | 102                    | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| Total Intangible Plant  |                        | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| <b>Intangible Plant Summary</b>   |                        |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                    |
| Production  |                        | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| Transmission  |                        | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| Distribution  |                        | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| <b>Total</b>  |                        | <b>0</b>             | <b>0</b>         | <b>0</b>             | <b>0</b>           | <b>0</b>             | <b>0</b>            | <b>0</b>             | <b>0</b>            | <b>0</b>             | <b>0</b>            | <b>0</b>            | <b>0</b>            | <b>0</b>     | <b>0</b>           | <b>0</b>           | <b>0</b>        | <b>0</b>           |
| <b>Production Plant</b>   |                        |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                    |
| <b>A: Steam Prod Plant</b>  |                        |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                    |
| 310 Land & Land Rights  | 112                    | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| 311 Structures & Improvements   | 112                    | (73,121,619)         | (71,446)         | (73,050,173)         | (255,402)          | (20,500,795)         | (2,517,769)         | (18,244,892)         | (2,129,052)         | (14,486,792)         | (2,507,774)         | (6,192,714)         | (5,778,136)         | (99)         | (184,345)          | (207,594)          | (5,389)         | (43,118)           |
| 312 Boiler Plant Equip  | 112                    | (218,157,215)        | (213,159)        | (217,944,056)        | (761,986)          | (61,163,805)         | (7,511,724)         | (54,433,353)         | (6,351,995)         | (43,221,119)         | (7,481,906)         | (18,475,867)        | (17,238,980)        | (266)        | (549,994)          | (641,446)          | (16,192)        | (13,113)           |
| 313 Engines and Engine Driven Motors  | 112                    | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| 314 Turbogenerators   | 112                    | (64,854,044)         | (63,368)         | (64,790,676)         | (226,524)          | (18,182,851)         | (2,233,095)         | (16,182,014)         | (1,888,329)         | (12,848,822)         | (2,224,230)         | (5,492,528)         | (5,124,875)         | (88)         | (163,502)          | (179,688)          | (4,789)         | (14,171)           |
| 315 Accessory Electric Equip  | 112                    | (40,961,416)         | (40,023)         | (40,921,393)         | (143,071)          | (11,484,177)         | (1,410,409)         | (10,220,461)         | (1,192,657)         | (8,115,240)          | (1,404,810)         | (3,469,047)         | (3,236,808)         | (56)         | (103,267)          | (113,490)          | (3,019)         | (3,891)            |
| 316 Misc Power Plant Equip  | 112                    | (14,257,747)         | (13,931)         | (14,243,816)         | (49,800)           | (3,997,384)          | (490,932)           | (3,557,512)          | (415,137)           | (2,824,732)          | (488,983)           | (1,207,497)         | (1,126,660)         | (19)         | (35,945)           | (39,503)           | (1,051)         | (8,661)            |
| <b>Total Steam Production Plant 311 - 316</b>   |                        | <b>(411,352,041)</b> | <b>(401,928)</b> | <b>(410,950,113)</b> | <b>(1,436,783)</b> | <b>(115,329,011)</b> | <b>(14,163,928)</b> | <b>(102,638,232)</b> | <b>(11,977,170)</b> | <b>(81,496,710)</b>  | <b>(14,107,704)</b> | <b>(34,837,654)</b> | <b>(32,505,409)</b> | <b>(558)</b> | <b>(1,037,047)</b> | <b>(1,139,719)</b> | <b>(10,342)</b> | <b>(24,910)</b>    |
| <b>B: Nuclear Production Plant</b>  |                        |                      |                  |                      |                    |                      |                     |                      |                     |                      |                     |                     |                     |              |                    |                    |                 |                    |
| 320 Land & Land Rights  | 113                    | 0                    | 0                | 0                    | 0                  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                  |
| 321 Structures & Improvements   | 113                    | (125,861,202)        | (122,731)        | (125,738,471)        | (448,064)          | (35,695,238)         | (4,442,629)         | (31,819,017)         | (3,691,898)         | (24,555,434)         | (4,795,156)         | (10,247,350)        | (9,792,537)         | (175)        | (319,057)          | (336,646)          | (9,157)         | (11,551)           |
| 322 Reactor Plant Equipment   | 113                    | (334,538,435)        | (326,218)        | (334,212,217)        | (1,190,951)        | (94,877,761)         | (11,808,486)        | (84,574,786)         | (9,813,025)         | (65,268,218)         | (11,416,503)        | (27,237,403)        | (26,028,513)        | (464)        | (848,052)          | (932,015)          | (24,791)        | (194,248)          |
| 323 Turbogenerators   | 113                    | (67,672,078)         | (65,989)         | (67,606,089)         | (240,911)          | (19,192,337)         | (2,388,678)         | (17,108,201)         | (1,985,027)         | (13,202,774)         | (2,309,386)         | (5,509,715)         | (5,265,175)         | (94)         | (171,548)          | (188,533)          | (5,015)         | (38,660)           |
| 324 Accessory Electric Equipment  | 113                    | (86,599,467)         | (84,464)         | (86,515,003)         | (308,293)          | (24,560,298)         | (3,056,775)         | (21,893,243)         | (2,540,225)         | (16,895,496)         | (2,955,305)         | (7,050,744)         | (6,737,807)         | (120)        | (219,529)          | (241,264)          | (6,417)         | (49,562)           |
| 325 Misc Power Plant Equipment  | 113                    | (36,502,357)         | (35,595)         | (36,466,762)         | (129,948)          | (10,352,359)         | (1,288,455)         | (9,228,174)          | (1,070,725)         | (7,121,583)          | (1,245,684)         | (2,971,944)         | (2,840,039)         | (51)         | (92,533)           | (101,695)          | (2,705)         | (20,867)           |
| <b>Total Nuclear Production Plant 321 - 325</b>   |                        | <b>(651,173,531)</b> | <b>(634,978)</b> | <b>(650,538,553)</b> | <b>(2,318,166)</b> | <b>(184,677,992)</b> | <b>(22,985,023)</b> | <b>(164,623,422)</b> | <b>(19,100,892)</b> | <b>(127,043,506)</b> | <b>(22,222,034)</b> | <b>(53,017,158)</b> | <b>(50,664,071)</b> | <b>(903)</b> | <b>(1,650,720)</b> | <b>(1,814,152)</b> | <b>(48,255)</b> | <b>(372,258)</b>   |

COST OF SERVICE STUDY

(By FERC Account - 1996)

| FERC ACCT                 | Description of Account                 | Total Utility | FERC JURIS.     | PA PUC JURIS. | RA              | RS          | RH            | GS/GM        | GMI           | GL           | GLH           | L            | HVPS         | AL           | SE          | SM           | SH           | TRAFFIC SIGNALS |
|---------------------------|--|---------------|-----------------|---------------|-----------------|-------------|---------------|--------------|---------------|--------------|---------------|--------------|--------------|--------------|-------------|--------------|--------------|-----------------|
| D: Other Production Plant |  |               |                 |               |                 |             |               |              |               |              |               |              |              |              |             |              |              |                 |
| 340                       | Land & Land Rights                     | 114           | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0           | 0            | 0            | 0               |
| 341                       | Structures & Improvements              | 114           | (3,289,817)     | (3,203)       | (3,286,614)     | (11,888)    | (941,550)     | (118,400)    | (840,373)     | (97,070)     | (633,895)     | (111,822)    | (239,238)    | (252,760)    | (5)         | (8,376)      | (9,206)      | (245)           |
| 342                       | Fuel Holders, Products and Accessories | 114           | (1,583,911)     | (1,542)       | (1,582,369)     | (5,724)     | (453,317)     | (57,005)     | (404,605)     | (46,735)     | (305,194)     | (53,838)     | (124,813)    | (121,694)    | (2)         | (4,033)      | (4,432)      | (118)           |
| 343                       | Prime Movers                           | 114           | (223,568)       | (218)         | (223,350)       | (808)       | (63,965)      | (8,046)      | (57,110)      | (6,597)      | (43,078)      | (7,599)      | (17,177)     | (10)         | (167)       | (626)        | (17)         |                 |
| 344                       | Generators                             | 114           | (10,856,250)    | (10,569)      | (10,845,681)    | (39,231)    | (3,107,072)   | (390,713)    | (2,773,193)   | (320,326)    | (2,091,825)   | (369,007)    | (855,475)    | (834,096)    | (15)        | (27,641)     | (30,378)     | (808)           |
| 345                       | Accessory Electric Equipment           | 114           | (1,919,779)     | (1,869)       | (1,917,910)     | (6,937)     | (549,443)     | (69,093)     | (490,401)     | (56,645)     | (369,911)     | (65,259)     | (151,279)    | (147,499)    | (1)         | (4,888)      | (5,372)      | (143)           |
| 346                       | Misc Power Plant Equipment             | 114           | (1,128,485)     | (1,099)       | (1,127,386)     | (4,078)     | (322,974)     | (40,614)     | (288,268)     | (33,297)     | (217,441)     | (38,358)     | (88,925)     | (86,703)     | (2)         | (2,873)      | (3,158)      | (84)            |
|                           | Total Other Production Plant 341 - 346 |               | (19,001,810)    | (18,499)      | (18,983,311)    | (68,667)    | (5,438,341)   | (683,873)    | (4,853,949)   | (560,670)    | (3,661,344)   | (645,878)    | (1,497,347)  | (1,459,931)  | (27)        | (48,381)     | (53,171)     | (1,414)         |
|                           | Total Production Plant                 |               | (1,081,527,382) | (1,055,406)   | (1,080,471,976) | (3,823,617) | (305,445,345) | (37,832,824) | (272,115,603) | (31,638,732) | (212,201,560) | (36,975,615) | (89,352,159) | (84,629,410) | (1,489)     | (2,736,148)  | (3,007,034)  | (19,987)        |
| Transmission Plant        |  |               |                 |               |                 |             |               |              |               |              |               |              |              |              |             |              |              |                 |
| 350                       | Total Land and Land Rights             | 0             | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0           | 0            | 0            | 0               |
| 352                       | Structures and Improvements            | 116           | (1,960,150)     | (1,861)       | (1,958,289)     | (5,367)     | (462,628)     | (40,249)     | (517,064)     | (50,008)     | (407,214)     | (71,675)     | (243,504)    | (156,901)    | (1)         | (1,096)      | (1,204)      | (32)            |
| 353                       | Station Equipment                      | 116           | (53,293,616)    | (50,607)      | (53,243,009)    | (145,913)   | (12,578,174)  | (1,094,322)  | (14,058,274)  | (1,359,635)  | (11,071,561)  | (1,948,746)  | (6,620,521)  | (4,265,916)  | (16)        | (29,788)     | (32,734)     | (871)           |
| 354                       | Poles & Fixtures                       | 117           | (23,349,334)    | (21,388)      | (23,327,946)    | (61,668)    | (5,315,955)   | (462,497)    | (5,962,635)   | (574,627)    | (4,679,210)   | (823,605)    | (3,602,591)  | (1,802,918)  | (7)         | (12,590)     | (13,835)     | (368)           |
| 355                       | Poles & Fixtures                       | 117           | (1,666,715)     | (1,527)       | (1,665,188)     | (4,402)     | (379,462)     | (33,014)     | (425,623)     | (41,018)     | (334,010)     | (58,790)     | (257,159)    | (128,695)    | (0)         | (899)        | (988)        | (26)            |
| 356                       | Ohvd Conductor & Devices               | 117           | (21,424,367)    | (19,625)      | (21,404,742)    | (56,584)    | (4,877,697)   | (424,368)    | (5,471,063)   | (527,254)    | (4,293,447)   | (755,505)    | (3,305,586)  | (1,654,282)  | (6)         | (11,552)     | (12,694)     | (338)           |
| 357                       | Underground Conduit                    | 1             | (8,072,593)     | (7,878)       | (8,064,715)     | (22,713)    | (1,957,934)   | (170,344)    | (2,188,328)   | (211,643)    | (1,723,413)   | (303,344)    | (807,407)    | (664,038)    | (2)         | (4,637)      | (5,095)      | (136)           |
| 358                       | Underground Conductors and Devices     | 1             | (7,918,705)     | (7,727)       | (7,910,978)     | (22,280)    | (1,920,610)   | (167,096)    | (2,146,612)   | (207,608)    | (1,690,559)   | (297,513)    | (792,011)    | (651,379)    | (2)         | (4,548)      | (4,996)      | (134)           |
| 359                       | Roads & Trails                         | 1             | (5,127)         | (5)           | (5,117)         | (14)        | (1,242)       | (108)        | (1,388)       | (134)        | (1,093)       | (192)        | (512)        | (421)        | (0)         | (3)          | (3)          | (4)             |
|                           | Total Transmission Plant               |               | (117,690,602)   | (110,619)     | (117,579,983)   | (318,941)   | (27,493,701)  | (2,391,999)  | (30,770,993)  | (2,971,927)  | (24,200,508)  | (4,259,619)  | (15,629,286) | (9,374,551)  | (34)        | (65,112)     | (71,551)     | (1,904)         |
| Distribution Plant        |  |               |                 |               |                 |             |               |              |               |              |               |              |              |              |             |              |              |                 |
| 360                       | Land & Land Rights                     | 0             | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0           | 0            | 0            | 0               |
| 361                       | Structures & Improvement               | 118           | (13,307,734)    | (6,674)       | (13,301,060)    | (45,909)    | (3,631,344)   | (471,526)    | (3,458,746)   | (398,977)    | (2,393,048)   | (308,621)    | (2,251,932)  | (253,639)    | (18)        | (35,623)     | (44,335)     | (919)           |
| 362                       | Station Equipment                      | 118           | (85,204,592)    | (42,733)      | (85,161,859)    | (293,936)   | (23,250,178)  | (3,019,007)  | (22,145,094)  | (2,554,503)  | (15,321,819)  | (1,975,985)  | (14,418,304) | (1,623,956)  | (113)       | (228,078)    | (283,860)    | (5,887)         |
| 363                       | Storage Battery Equipment              | 0             | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0           | 0            | 0            | 0               |
| 364                       | Poles, Towers, Fixtures*               | 119           | (66,699,658)    | (13,315)      | (66,686,343)    | (316,154)   | (35,828,787)  | (3,017,028)  | (15,629,547)  | (1,719,308)  | (3,353,914)   | (534,522)    | (830,721)    | 0            | (157)       | (1,705,092)  | (3,619,119)  | (36,429)        |
| 365                       | Ohvd Conductor & Devices               | 119           | (60,090,427)    | (11,995)      | (60,078,432)    | (284,827)   | (32,278,533)  | (2,718,072)  | (14,080,874)  | (1,548,943)  | (3,021,576)   | (481,556)    | (748,406)    | 0            | (141)       | (1,536,135)  | (3,260,502)  | (32,819)        |
| 366                       | Underground Conduit                    | 120           | (15,840,062)    | (4,192)       | (15,835,870)    | (34,707)    | (3,050,964)   | (352,443)    | (5,060,765)   | (793,561)    | (4,612,212)   | (764,106)    | (1,021,323)  | 0            | (14)        | (47,143)     | (90,768)     | (1,557)         |
| 367                       | Underground Lines                      | 120           | (34,037,405)    | (9,008)       | (34,028,397)    | (74,580)    | (6,555,964)   | (757,335)    | (10,874,600)  | (1,705,218)  | (9,910,803)   | (1,641,924)  | (2,194,637)  | 0            | (31)        | (101,301)    | (195,044)    | (3,346)         |
| 368                       | Line Transformers                      | 121           | (51,529,607)    | (12,754)      | (51,516,853)    | (160,940)   | (20,641,260)  | (1,342,702)  | (11,104,784)  | (1,681,866)  | (10,523,089)  | (1,841,956)  | (2,121,785)  | (1,236,326)  | (58)        | (60,679)     | (57,740)     | (11,352)        |
| 369                       | Services                               | 122           | (19,868,087)    | (2,391)       | (19,865,696)    | (92,446)    | (15,371,364)  | (724,884)    | (2,235,436)   | (206,279)    | (646,922)     | (101,836)    | (242,991)    | (229,386)    | (3)         | (6,065)      | (6,606)      | (177)           |
| 370                       | Meters                                 | 40            | (25,120,856)    | (2,151)       | (25,118,705)    | (60,909)    | (10,690,502)  | (490,826)    | (11,548,775)  | (803,415)    | (11,115,250)  | (199,859)    | (167,804)    | (41,306)     | 0           | 0            | 0            | 0               |
| 371                       | Installations on Cust Premises         | 20            | 37,544          | 0             | 37,544          | 0           | 0             | 0            | 4,334         | 0            | 13,734        | 0            | 2,203        | 17,073       | 0           | 0            | 0            | 0               |
| 372                       | Leased Property on Customer Premise    | 0             | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0           | 0            | 0            | 0               |
| 373                       | Street Lights & Signal Systems         | 19            | (14,747,084)    | 0             | (14,747,084)    | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0            | 0            | (4,421,873) | (10,325,211) | 0            | 0               |
|                           | Total Distribution Plant               |               | (386,407,968)   | (105,215)     | (386,302,753)   | (1,364,467) | (151,298,896) | (12,893,821) | (96,134,098)  | (11,412,068) | (50,884,899)  | (7,850,365)  | (23,995,699) | (3,367,540)  | (534)       | (8,141,988)  | (18,583,245) | (92,481)        |
| General Plant             |  |               |                 |               |                 |             |               |              |               |              |               |              |              |              |             |              |              |                 |
| 389                       | Land & Land Rights                     | 0             | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0           | 0            | 0            | 0               |
|                           | Production                             | 0             | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0           | 0            | 0            | 0               |
|                           | Transmission                           | 0             | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0           | 0            | 0            | 0               |
|                           | Distribution                           | 0             | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0           | 0            | 0            | 0               |
| 390                       | Structures & Improvements              | 100           | (13,588,593)    | (13,259)      | (13,575,334)    | (48,072)    | (3,839,206)   | (475,745)    | (3,420,468)   | (397,618)    | (2,664,748)   | (464,492)    | (1,121,118)  | (1,062,739)  | (19)        | (34,384)     | (37,788)     | (1,005)         |
|                           | Production                             | 101           | (535,968)       | (505)         | (535,463)       | (1,456)     | (125,485)     | (10,917)     | (140,460)     | (13,564)     | (110,454)     | (19,441)     | (70,129)     | (42,568)     | (0)         | (297)        | (327)        | (91)            |
|                           | Transmission                           | 102           | (8,464,372)     | (2,471)       | (8,461,901)     | (30,276)    | (3,266,022)   | (288,563)    | (2,150,387)   | (260,263)    | (1,201,754)   | (184,085)    | (585,297)    | (77,393)     | (12)        | (126,181)    | (181,454)    | (1,985)         |
| 391                       | Office Furniture & Equipment           | 100           | (12,202,513)    | (11,907)      | (12,190,606)    | (43,169)    | (3,447,595)   | (427,217)    | (3,071,569)   | (357,060)    | (2,392,936)   | (417,112)    | (1,006,761)  | (954,336)    | (17)        | (30,877)     | (33,934)     | (903)           |
|                           | Production                             | 101           | (481,297)       | (453)         | (480,844)       | (1,307)     | (112,685)     | (9,804)      | (126,133)     | (12,181)     | (99,188)      | (17,458)     | (62,976)     | (38,217)     | (0)         | (267)        | (293)        | (8)             |
|                           | Transmission                           | 102           | (7,600,979)     | (2,219)       | (7,598,760)     | (27,187)    | (2,932,878)   | (259,129)    | (1,931,041)   | (233,716)    | (1,079,171)   | (165,308)    | (525,593)    | (69,499)     | (11)        | (113,316)    | (124,540)    | (1,782)         |
| 392                       | Transportation Equipment               | 100           | (5,721,685)     | (5,583)       | (5,716,102)     | (20,243)    | (1,616,557)   | (200,320)    | (1,440,240)   | (167,423)    | (1,122,033)   | (195,582)    | (472,064)    | (447,482)    | (8)         | (14,478)     | (15,911)     | (423)           |
|                           | Production                             | 101           | (225,677)       | (213)         | (225,464)       | (613)       | (52,837)      | (4,597)      | (59,143)      | (5,711)      | (46,508)      | (8,186)      | (29,529)     | (17,920)     | (0)         | (125)        | (138)        | (8)             |
|                           | Transmission                           | 102           | (3,564,053)     | (1,040)       | (3,563,013)     | (12,748)    | (1,375,208)   | (121,504)    | (905,453)     | (109,588)    | (506,017)     | (77,512)     | (246,448)    | (32,588)     | (5)         | (53,133)     | (119,152)    | (810)           |
| 393                       | Stores Equipment                       | 100           | (529,931)       | (517)         | (529,414)       | (1,875)     | (149,722)     | (18,553)     | (133,392)     | (15,506)     | (103,920)     | (18,114)     | (43,722)     | (41,445)     | (1)         | (1,341)      | (1,474)      | (39)            |
|                           | Production                             | 101           | (20,902)        | (20)          | (20,882)        | (57)        | (4,894)       | (426)        | (5,278)       | (529)        | (4,308)       | (758)        | (2,735)      | (1,660)      | (0)         | (12)         | (13)         | (8)             |
|                           | Transmission                           | 102           | (330,096)       | (96)          | (330,000)       | (1,181)     | (127,369)     | (11,253)     | (83,861)      | (10,150)     | (46,866)      | (7,179)      | (22,826)     | (3,018)      | (0)         | (4,921)      | (11,054)     | (27)            |
| 394                       | Tools, Shop & Garage Equipment         | 100           | (2,126,093)     | (2,075)       | (2,124,019)     | (7,521)     | (600,688)     | (74,436)     | (535,172)     | (62,212)     | (416,931)     | (72,675)     | (175,412)    | (166,278)    | (3)         | (5,380)      | (5,914)      | (157)           |
|                           | Production                             | 101           | (83,858)        | (79)          | (83,779)        | (228)       | (19,634)      | (1,708)      | (21,977)      | (2,122)      | (17,282)      | (3,042)      | (10,973)     | (6,659)      | (0)         | (46)         | (51)         | (11)            |
|                           | Transmission                           | 102           | (1,324,349)     | (387)         | (1,323,963)     | (4,737)     | (511,007)     | (45,149)     | (336,453)     | (40,721)     | (188,028)     | (28,802)     | (91,577)     | (12,109)     | (2)         | (19,743)     | (44,350)     | (311)           |
| 395                       | Laboratory Equipment                   | 100           | (1,333,738)     | (1,301)       | (1,332,437)     | (4,718)     | (376,823)     | (46,695)     | (335,723)     | (39,027)     | (261,549)     | (45,591)     | (110,039)    | (104,309)    | (2)         | (3,375)      | (1,106)      | (94)            |
|                           | Production                             | 101           | (52,606)        | (50)          | (52,556)        | (143)       | (12,317)      | (6,072)      | (13,786)      | (11,331)     | (10,876)      | (6,883)      | (4,177)      | (0)          | (29)        | (32)         | (11)         |                 |
|                           | Transmission                           | 102           | (830,789)       | (243)         | (830,546)       | (2,972)     | (320,564)     | (28,323)     | (211,063)     | (25,545)     | (117,954)     | (18,068)     | (57,448)     | (7,396)      | (1)         | (12,385)     | (7,821)      | (195)           |
| 396                       | Power Operated Equipment               |               |                 |               |                 |             |               |              |               |              |               |              |              |              |             |              |              |                 |

**COST OF SERVICE STUDY**  
(By FERC Account - 1996)

| FERC ACCT  | Description of Account                       | Total Utility | FERC JURIS.     | PA FUC JURIS. | RA              | RS          | RH            | GS/GM        | GMH           | GL           | GLH           | L            | HVPS          | AL            | SE      | SM           | SH           | TRAFFIC SIGNALS |             |
|--|--|---------------|-----------------|---------------|-----------------|-------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|---------------|---------|--------------|--------------|-----------------|-------------|
| 397  | Communication Equipment                      |               |                 |               |                 |             |               |              |               |              |               |              |               |               |         |              |              |                 |             |
|  | Production                                   | 100           | (29,833,969)    | (29,111)      | (29,804,858)    | (105,543)   | (8,429,038)   | (1,044,503)  | (7,509,691)   | (872,977)    | (5,850,497)   | (1,019,800)  | (2,461,433)   | (2,333,260)   | (41)    | (75,491)     | (82,965)     | (2,207)         | (17,410)    |
|  | Transmission                                 | 101           | (1,176,726)     | (1,108)       | (1,175,618)     | (3,196)     | (75,504)      | (73,969)     | (308,383)     | (29,781)     | (242,504)     | (42,684)     | (153,970)     | (93,438)      | (0)     | (652)        | (712)        | (19)            | (800)       |
|  | Distribution                                 | 102           | (18,583,661)    | (5,425)       | (18,578,236)    | (66,471)    | (7,170,603)   | (633,546)    | (4,721,208)   | (571,412)    | (2,638,469)   | (404,161)    | (1,285,029)   | (169,919)     | (26)    | (277,046)    | (622,327)    | (4,357)         | (13,667)    |
| 398  | Misc Equipment                               |               |                 |               |                 |             |               |              |               |              |               |              |               |               |         |              |              |                 |             |
|  | Production                                   | 100           | (101,842)       | (99)          | (101,743)       | (360)       | (28,774)      | (3,566)      | (25,635)      | (2,980)      | (19,971)      | (3,481)      | (8,407)       | (7,965)       | (0)     | (258)        | (283)        | (8)             | (55)        |
|  | Transmission                                 | 101           | (4,017)         | (4)           | (4,013)         | (11)        | (940)         | (82)         | (1,053)       | (102)        | (828)         | (1,464)      | (526)         | (319)         | (0)     | (2)          | (7)          | (0)             | (1)         |
|  | Distribution                                 | 102           | (63,437)        | (19)          | (63,418)        | (227)       | (24,477)      | (2,163)      | (16,116)      | (1,951)      | (9,007)       | (1,380)      | (4,387)       | (580)         | (0)     | (946)        | (2,124)      | (15)            | (47)        |
|  | Subtotal                                     |               | (109,636,269)   | (78,798)      | (109,557,471)   | (387,330)   | (35,094,551)  | (3,762,588)  | (27,720,092)  | (3,258,888)  | (19,302,314)  | (3,242,254)  | (8,622,530)   | (5,740,237)   | (150)   | (780,782)    | (1,560,745)  | (14,554)        | (70,458)    |
| 399  | Other Tangible Property                      |               |                 |               |                 |             |               |              |               |              |               |              |               |               |         |              |              |                 |             |
|  | Production                                   | 100           | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0             | 0             | 0       | 0            | 0            | 0               | 0           |
|  | Transmission                                 | 101           | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0             | 0             | 0       | 0            | 0            | 0               | 0           |
|  | Distribution                                 | 102           | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0             | 0             | 0       | 0            | 0            | 0               | 0           |
|  | Total General Plant                          |               | (109,636,269)   | (78,798)      | (109,557,471)   | (387,330)   | (35,094,551)  | (3,762,588)  | (27,720,092)  | (3,258,888)  | (19,302,314)  | (3,242,254)  | (8,622,530)   | (5,740,237)   | (150)   | (780,782)    | (1,560,745)  | (14,554)        | (70,458)    |
|  | Total Accumulated Depreciation               |               | (1,695,262,221) | (1,350,037)   | (1,693,912,184) | (5,894,355) | (519,332,492) | (56,881,232) | (426,740,785) | (49,281,615) | (306,589,281) | (52,327,854) | (137,599,674) | (103,061,737) | (2,207) | (11,724,031) | (23,222,574) | (188,925)       | (1,065,421) |
|  | NET PLANT IN SERVICE                         |               | 2,505,893,468   | 1,821,076     | 2,504,072,392   | 8,758,395   | 790,807,098   | 84,299,416   | 637,194,121   | 74,382,774   | 447,834,694   | 75,262,879   | 206,518,413   | 133,224,288   | 3,286   | 14,882,517   | 28,965,399   | 318,754         | 1,670,338   |
|  | Total Accumulated Depr. - Class Percentage   |               | 100%            | 0.0796%       | 99.9204%        | 0.3477%     | 30.6343%      | 3.3553%      | 25.1728%      | 2.9070%      | 18.0851%      | 3.0867%      | 8.1167%       | 6.0794%       | 0.0001% | 0.6916%      | 1.3699%      | 0.0111%         | 0.0628%     |
|  | NET PLANT IN SERVICE - Class Percentage      |               | 100%            | 0.0727%       | 99.9273%        | 0.3495%     | 31.5579%      | 3.3640%      | 25.4278%      | 2.9683%      | 17.8713%      | 3.0034%      | 8.2413%       | 5.3164%       | 0.0001% | 0.5939%      | 1.1559%      | 0.0127%         | 0.0647%     |
| <b>Total General &amp; Intangible Plant Accumulated Depreciation Summary</b>                   |  |               |                 |               |                 |             |               |              |               |              |               |              |               |               |         |              |              |                 |             |
|  | Production                                   |               | (65,932,768)    | (64,355)      | (65,888,413)    | (233,320)   | (18,633,739)  | (2,309,046)  | (16,601,375)  | (1,929,855)  | (12,933,460)  | (2,254,431)  | (5,441,392)   | (5,158,045)   | (91)    | (166,885)    | (183,407)    | (4,879)         | (38,487)    |
|  | Transmission                                 |               | (2,601,341)     | (2,450)       | (2,598,890)     | (7,045)     | (609,046)     | (52,988)     | (681,729)     | (65,835)     | (536,094)     | (94,360)     | (340,375)     | (206,559)     | (1)     | (1,442)      | (1,385)      | (42)            | (1,700)     |
|  | Distribution                                 |               | (11,082,160)    | (11,922)      | (11,070,168)    | (146,941)   | (15,851,766)  | (1,400,554)  | (10,436,987)  | (1,263,198)  | (5,832,759)   | (893,463)    | (2,840,763)   | (375,632)     | (58)    | (612,453)    | (1,175,753)  | (9,633)         | (30,201)    |
|  | Total  |               | (109,636,269)   | (78,798)      | (109,557,471)   | (387,330)   | (35,094,551)  | (3,762,588)  | (27,720,092)  | (3,258,888)  | (19,302,314)  | (3,242,254)  | (8,622,530)   | (5,740,237)   | (150)   | (780,782)    | (1,560,745)  | (14,554)        | (70,458)    |
| <b>Total Plant Accumulated Depreciation Summary (Including General &amp; Intangible Plant)</b> |  |               |                 |               |                 |             |               |              |               |              |               |              |               |               |         |              |              |                 |             |
|  | Production                                   |               | (1,147,480,150) | (1,119,761)   | (1,146,360,389) | (4,056,937) | (324,079,084) | (40,141,870) | (288,716,978) | (33,568,587) | (225,135,020) | (39,230,046) | (94,793,551)  | (89,787,455)  | (1,579) | (2,963,033)  | (3,190,441)  | (84,865)        | (670,511)   |
|  | Transmission                                 |               | (120,291,943)   | (113,069)     | (120,178,874)   | (326,004)   | (28,102,747)  | (2,444,987)  | (31,452,722)  | (3,037,761)  | (24,736,602)  | (4,353,979)  | (15,969,661)  | (9,531,110)   | (35)    | (66,554)     | (13,136)     | (1,946)         | (81,065)    |
|  | Distribution                                 |               | (422,490,128)   | (112,202)     | (422,377,921)   | (1,511,811) | (162,156,662) | (14,294,375) | (106,571,085) | (12,625,266) | (56,217,659)  | (8,263,828)  | (26,836,962)  | (3,243,172)   | (592)   | (8,744,443)  | (19,958,977) | (102,114)       | (312,854)   |
|  | Total  |               | (1,695,262,221) | (1,350,037)   | (1,693,912,184) | (5,894,355) | (519,332,492) | (56,881,232) | (426,740,785) | (49,281,615) | (306,589,281) | (52,327,854) | (137,599,674) | (103,061,737) | (2,207) | (11,724,031) | (23,222,574) | (188,925)       | (1,065,421) |
| <b>Total Net Electric Plant in Service Summary (Excluding General &amp; Intangible Plant)</b>  |  |               |                 |               |                 |             |               |              |               |              |               |              |               |               |         |              |              |                 |             |
|  | Production                                   |               | 1,284,871,339   | 1,253,629     | 1,283,617,660   | 4,547,967   | 363,136,995   | 45,016,215   | 323,545,111   | 37,604,874   | 251,853,626   | 43,913,822   | 105,886,098   | 100,442,297   | 1,771   | 3,251,717    | 3,573,647    | 95,058          | 748,461     |
|  | Transmission                                 |               | 194,496,154     | 183,459       | 194,312,695     | 528,959     | 45,597,832    | 3,967,089    | 51,043,329    | 4,928,889    | 40,136,127    | 7,064,506    | 25,219,045    | 15,464,607    | 56      | 107,987      | 118,667      | 3,157           | 132,444     |
|  | Distribution                                 |               | 846,817,762     | 254,272       | 846,562,965     | 3,046,585   | 324,547,703   | 29,148,232   | 212,168,818   | 26,502,262   | 124,205,918   | 18,970,073   | 61,279,812    | 7,908,383     | 1,214   | 10,263,008   | 22,714,820   | 196,684         | 623,967     |
|  | Total  |               | 2,326,185,255   | 1,691,915     | 2,324,493,340   | 8,123,511   | 733,282,530   | 78,132,041   | 591,757,258   | 69,041,030   | 416,195,671   | 69,948,400   | 192,384,956   | 123,815,288   | 3,041   | 13,602,712   | 26,407,134   | 294,899         | 1,504,868   |
| <b>Total Net Electric Plant in Service Summary (Including General &amp; Intangible Plant)</b>  |  |               |                 |               |                 |             |               |              |               |              |               |              |               |               |         |              |              |                 |             |
|  | Production                                   |               | 1,392,976,569   | 1,359,166     | 1,391,617,403   | 4,930,409   | 393,680,135   | 48,801,044   | 350,756,941   | 40,768,160   | 273,053,263   | 47,609,130   | 114,805,253   | 108,897,009   | 1,920   | 3,525,263    | 3,874,275    | 103,055         | 811,546     |
|  | Transmission                                 |               | 198,760,093     | 187,476       | 198,572,617     | 540,539     | 46,594,138    | 5,036,943    | 52,160,773    | 5,036,801    | 41,014,856    | 7,219,174    | 25,776,964    | 15,803,185    | 58      | 110,351      | 121,265      | 3,226           | 135,344     |
|  | Distribution                                 |               | 914,156,806     | 274,434       | 913,883,322     | 3,287,846   | 350,530,826   | 31,844,429   | 234,276,602   | 28,572,814   | 133,766,575   | 20,434,575   | 65,936,195    | 8,524,094     | 1,309   | 11,263,902   | 24,999,860   | 212,473         | 671,468     |
|  | Total  |               | 2,505,893,468   | 1,821,076     | 2,504,072,392   | 8,758,395   | 790,807,098   | 84,299,416   | 637,194,121   | 74,382,774   | 447,834,694   | 75,262,879   | 206,518,413   | 133,224,288   | 3,286   | 14,882,517   | 28,965,399   | 318,754         | 1,670,338   |
| <b>Additions To Plant</b>  |  |               |                 |               |                 |             |               |              |               |              |               |              |               |               |         |              |              |                 |             |
| 105  | Add: Land/Plant Held For Future Use (P214)   |               |                 |               |                 |             |               |              |               |              |               |              |               |               |         |              |              |                 |             |
|  | Production                                   | 100           | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0             | 0             | 0       | 0            | 0            | 0               | 0           |
|  | Transmission                                 | 101           | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0             | 0             | 0       | 0            | 0            | 0               | 0           |
|  | Distribution                                 | 102           | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0             | 0             | 0       | 0            | 0            | 0               | 0           |
|  | Total  |               | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0             | 0             | 0       | 0            | 0            | 0               | 0           |
| 106  | CWP - Construction Work in Progress (P216.1) |               | 0               |               |                 |             |               |              |               |              |               |              |               |               |         |              |              |                 |             |
|  | Production                                   | 100           | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0             | 0             | 0       | 0            | 0            | 0               | 0           |
|  | Transmission                                 | 101           | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0             | 0             | 0       | 0            | 0            | 0               | 0           |
|  | Distribution                                 | 102           | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0             | 0             | 0       | 0            | 0            | 0               | 0           |
|  | Total  |               | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0             | 0             | 0       | 0            | 0            | 0               | 0           |
| <b>Deductions To Plant</b>   |  |               |                 |               |                 |             |               |              |               |              |               |              |               |               |         |              |              |                 |             |
| Less: Accum. Deferred Income Taxes (P273-277)  |  |               |                 |               |                 |             |               |              |               |              |               |              |               |               |         |              |              |                 |             |
|  | Intangible Plant                             | 0             | 0               | 0             | 0               | 0           | 0             | 0            | 0             | 0            | 0             | 0            | 0             | 0             | 0       | 0            | 0            | 0               | 0           |
|  | Production Plant                             | 100           | (240,024,770)   | (234,211)     | (239,790,559)   | (849,133)   | (67,814,574)  | (8,403,411)  | (60,418,105)  | (7,023,407)  | (47,069,303)  | (8,204,648)  | (19,803,095)  | (18,771,897)  | (331)   | (607,352)    | (667,481)    | (17,755)        | (140,167)   |
|  | Transmission Plant                           | 101           | (23,087,876)    | (21,749)      | (23,066,127)    | (62,707)    | (5,403,509)   | (470,288)    | (6,050,606)   | (584,308)    | (4,758,037)   | (837,479)    | (3,020,952)   | (1,833,290)   | (7)     | (12,802)     | (14,068)     | (374)           | (15,701)    |
|  | Distribution Plant                           | 102           | (99,290,960)    | (28,984)      | (99,261,976)    | (355,148)   | (38,311,936)  | (3,384,981)  | (25,225,023)  | (3,053,007)  | (14,097,123)  | (2,159,349)  | (6,865,805)   | (907,861)     | (141)   | (1,480,235)  | (3,175,040)  | (7,287)         | (72,995)    |
|  | General Plant                                |               | (25,765,908)    |               |                 |             |               |              |               |              |               |              |               |               |         |              |              |                 |             |
|  | Production                                   | 100           | (15,499,733)    | (15,124)      | (15,484,609)    | (54,833)    | (4,379,164)   | (542,655)    | (3,901,533)   | (453,340)    | (3,039,326)   | (529,820)    | (1,278,796)   | (1,212,206)   | (21)    | (39,220)     | (43,103)     | (1,147)         | (9,045)     |
|  | Transmission                                 | 101           | (611,348)       | (576)         | (610,772)       | (1,660)     | (143,133)     | (12,453)     | (160,215)     | (15,472)     | (125,989)     | (22,176)     | (79,992)      | (48,544)      | (0)     | (339)        | (372)        | (10)            | (416)       |
|  | Distribution                                 | 102           | (9,654,827)     | (2,818)       | (9,652,009)     | (34,534)    | (3,725,366)   | (329,148)    | (2,452,824)   | (226,867)    | (1,370,772)   | (209,975)    | (667,615)     | (88,278)      | (14)    | (143,935)    | (343,319)    | (2,264)         | (7,096)     |
|  | Total  |               | (88,169,514)    | (303,463)     | (88,066,051)    | (1,358,015) | (119,779,682) | (13,142,937) | (98,208,305)  | (11,426,601) | (70,460,752)  | (11,963,498) | (31,716,255)  | (22,862,077)  | (513)   | (1,283,882)  | (4,173,383)  | (44,831)        | (245,121)   |
|  | Rate Base Prior To Extraordinary Adjustment  |               | 2,117,723,954   | 1,517,613     | 2,116,206,341   | 7,400,380   | 671,027,416   | 71,156,479   | 538,965,816   | 62,956,173   | 377,373,942   | 63,299,382   | 174,802,157   | 110,362,211   | 2,773   | 12,598,635   | 24,392,016   | 273,923         | 1,175,057   |

**COST OF SERVICE STUDY**  
(By FERC Account - 1996)

| FERC<br>ACCI   | Description of Account                    | Total<br>Utility     | FERC<br>JURIS.   | PA PUC<br>JURIS.     | RA                 | RS                   | RH                  | GS/GM               | GMH                 | GL                  | GLH                 | L                   | HVPS                | AL           | SE                 | SM                 | SH              | TRAFFIC<br>SUPPORTS |
|--|---|----------------------|------------------|----------------------|--------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------|--------------------|--------------------|-----------------|---------------------|
| <b>Total Accumulated Deferred Income Taxes Summary</b>         |   |                      |                  |                      |                    |                      |                     |                     |                     |                     |                     |                     |                     |              |                    |                    |                 |                     |
|  | Production                                | (255,524,503)        | (249,336)        | (255,275,167)        | (903,966)          | (72,193,738)         | (8,946,066)         | (64,319,638)        | (7,476,947)         | (50,108,830)        | (8,734,468)         | (21,081,890)        | (19,984,103)        | (352)        | (646,572)          | (710,584)          | (18,901)        | (149,113)           |
|  | Transmission                              | (23,699,224)         | (22,324)         | (23,676,900)         | (64,367)           | (5,548,642)          | (482,741)           | (6,210,821)         | (599,779)           | (4,884,026)         | (839,655)           | (3,100,944)         | (1,881,835)         | (7)          | (13,141)           | (14,440)           | (384)           | (16,117)            |
|  | Distribution                              | (108,245,287)        | (31,802)         | (108,913,985)        | (389,682)          | (42,037,302)         | (3,714,129)         | (27,677,847)        | (3,349,875)         | (15,467,826)        | (2,369,373)         | (7,533,420)         | (996,139)           | (154)        | (1,624,170)        | (3,648,352)        | (25,545)        | (80,097)            |
|  | <b>Total</b>                              | <b>(388,169,514)</b> | <b>(303,463)</b> | <b>(387,866,051)</b> | <b>(1,358,015)</b> | <b>(119,779,682)</b> | <b>(13,142,937)</b> | <b>(98,208,305)</b> | <b>(11,426,601)</b> | <b>(70,460,752)</b> | <b>(11,963,498)</b> | <b>(31,716,255)</b> | <b>(22,862,077)</b> | <b>(513)</b> | <b>(2,283,882)</b> | <b>(4,373,383)</b> | <b>(44,831)</b> | <b>(245,121)</b>    |
| <b>Net Rate Base Prior To Extraordinary Adjustment Summary</b> |   |                      |                  |                      |                    |                      |                     |                     |                     |                     |                     |                     |                     |              |                    |                    |                 |                     |
|  | Production                                | 1,137,452,066        | 1,109,831        | 1,136,342,236        | 4,026,443          | 321,486,397          | 39,854,978          | 286,437,303         | 33,291,213          | 222,944,433         | 38,874,662          | 93,723,363          | 88,912,906          | 1,568        | 2,878,691          | 3,163,691          | 84,153          | 662,434             |
|  | Transmission                              | 175,060,869          | 165,151          | 174,895,718          | 476,172            | 41,047,496           | 3,571,202           | 45,949,953          | 4,437,022           | 36,130,830          | 6,359,519           | 22,676,020          | 13,921,351          | 51           | 97,211             | 106,824            | 2,847           | 119,727             |
|  | Distribution                              | 805,211,019          | 242,631          | 804,968,388          | 2,892,265          | 308,493,524          | 27,230,300          | 206,598,560         | 25,222,939          | 118,298,679         | 18,065,201          | 58,402,775          | 2,322,955           | 1,155        | 9,672,733          | 21,321,501         | 186,928         | 593,376             |
|  | <b>Total</b>                              | <b>2,117,723,954</b> | <b>1,517,613</b> | <b>2,116,206,341</b> | <b>7,400,380</b>   | <b>671,027,416</b>   | <b>71,156,479</b>   | <b>538,983,816</b>  | <b>62,956,173</b>   | <b>377,373,942</b>  | <b>63,299,382</b>   | <b>174,802,137</b>  | <b>110,262,211</b>  | <b>2,773</b> | <b>12,598,635</b>  | <b>24,592,016</b>  | <b>273,923</b>  | <b>1,375,031</b>    |
| <b>Adjustments To Rate Base For Rate Making</b>                |   |                      |                  |                      |                    |                      |                     |                     |                     |                     |                     |                     |                     |              |                    |                    |                 |                     |
|  | <b>Add:</b>                               |                      |                  |                      |                    |                      |                     |                     |                     |                     |                     |                     |                     |              |                    |                    |                 |                     |
|  | <b>Regulatory Assets</b>                  | <b>544,788,485</b>   |                  |                      |                    |                      |                     |                     |                     |                     |                     |                     |                     |              |                    |                    |                 |                     |
|  | Production                                | 100 455,273,723      | 444,247          | 454,829,476          | 1,610,617          | 128,629,198          | 15,939,406          | 114,599,737         | 13,321,844          | 89,280,023          | 15,562,397          | 37,562,076          | 35,606,124          | 627          | 1,152,011          | 1,266,063          | 33,677          | 265,777             |
|  | Transmission                              | 101 32,670,171       | 30,775           | 32,639,396           | 88,732             | 7,648,988            | 665,475             | 8,561,823           | 826,816             | 6,732,793           | 1,185,063           | 4,274,755           | 2,594,172           | 9            | 18,115             | 19,906             | 530             | 22,271              |
|  | Distribution                              | 102 56,844,591       | 16,594           | 56,827,997           | 203,324            | 21,933,783           | 1,937,919           | 14,441,457          | 1,747,863           | 8,070,676           | 1,236,267           | 3,930,709           | 519,755             | 81           | 847,442            | 1,903,603          | 13,379          | 41,790              |
|  | Phillips                                  | 78,399,252           |                  |                      |                    |                      |                     |                     |                     |                     |                     |                     |                     |              |                    |                    |                 |                     |
|  | Production                                | 100 78,399,252       | 76,500           | 78,322,752           | 277,352            | 22,150,264           | 2,744,805           | 19,734,356          | 2,294,054           | 15,374,239          | 2,679,883           | 6,468,782           | 6,131,462           | 108          | 198,379            | 218,019            | 5,769           | 45,750              |
|  | Transmission                              | 101 0                | 0                | 0                    | 0                  | 0                    | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                   |
|  | Distribution                              | 102 0                | 0                | 0                    | 0                  | 0                    | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                   |
|  | Brunel Island                             | 28,758,563           |                  |                      |                    |                      |                     |                     |                     |                     |                     |                     |                     |              |                    |                    |                 |                     |
|  | Production                                | 100 28,758,563       | 28,062           | 28,730,501           | 101,739            | 8,125,202            | 1,006,855           | 7,238,994           | 841,509             | 5,639,608           | 983,040             | 2,372,707           | 2,249,155           | 40           | 72,770             | 79,974             | 2,127           | 16,762              |
|  | Transmission                              | 101 0                | 0                | 0                    | 0                  | 0                    | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                   |
|  | Distribution                              | 102 0                | 0                | 0                    | 0                  | 0                    | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                   |
|  | Warwick                                   | 15,294,914           |                  |                      |                    |                      |                     |                     |                     |                     |                     |                     |                     |              |                    |                    |                 |                     |
|  | Production                                | 100 15,294,914       | 14,924           | 15,279,990           | 54,109             | 4,321,296            | 535,484             | 3,849,976           | 447,547             | 2,999,361           | 522,818             | 1,261,897           | 1,196,187           | 21           | 38,702             | 42,533             | 1,131           | 6,271               |
|  | Transmission                              | 101 0                | 0                | 0                    | 0                  | 0                    | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                   |
|  | Distribution                              | 102 0                | 0                | 0                    | 0                  | 0                    | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0            | 0                  | 0                  | 0               | 0                   |
|  | Deferred Taxes                            | (485,985,645)        |                  |                      |                    |                      |                     |                     |                     |                     |                     |                     |                     |              |                    |                    |                 |                     |
|  | Production                                | 100 (383,558,497)    | (374,269)        | (383,184,228)        | (1,356,911)        | (108,367,383)        | (13,428,613)        | (96,547,858)        | (11,223,372)        | (75,216,534)        | (13,110,990)        | (31,645,256)        | (29,997,407)        | (528)        | (970,545)          | (1,066,632)        | (28,372)        | (22,927)            |
|  | Transmission                              | 101 (37,049,551)     | (34,900)         | (37,014,651)         | (100,627)          | (8,674,372)          | (754,681)           | (9,709,521)         | (937,649)           | (7,635,312)         | (1,343,919)         | (4,847,779)         | (2,941,916)         | (11)         | (20,543)           | (22,575)           | (601)           | (25,196)            |
|  | Distribution                              | 102 (65,377,597)     | (19,084)         | (65,358,513)         | (233,843)          | (25,226,288)         | (2,228,823)         | (16,609,280)        | (2,010,236)         | (9,282,175)         | (1,421,845)         | (4,520,752)         | (597,776)           | (93)         | (974,653)          | (2,189,354)        | (15,300)        | (48,061)            |
|  | Working Capital                           | 69,940,000           |                  |                      |                    |                      |                     |                     |                     |                     |                     |                     |                     |              |                    |                    |                 |                     |
|  | Production                                | 100 63,590,000       | 62,050           | 63,527,950           | 224,962            | 17,966,182           | 2,226,324           | 16,006,628          | 1,860,718           | 12,470,117          | 2,173,666           | 5,246,453           | 4,973,257           | 88           | 160,906            | 176,836            | 4,704           | 37,104              |
|  | Transmission                              | 101 1,240,000        | 1,168            | 1,238,832            | 3,368              | 290,318              | 25,258              | 324,965             | 31,382              | 255,544             | 44,979              | 162,249             | 98,662              | 0            | 688                | 756                | 20              | 747                 |
|  | Distribution                              | 102 5,110,000        | 1,492            | 5,108,508            | 18,278             | 1,971,720            | 174,208             | 1,298,203           | 157,123             | 725,507             | 111,133             | 353,348             | 46,723              | 7            | 76,160             | 171,123            | 1,198           | 3,757               |
|  | <b>Total Net Adjustment To Rate Base</b>  | <b>251,195,569</b>   | <b>247,559</b>   | <b>250,948,010</b>   | <b>891,097</b>     | <b>70,768,959</b>    | <b>8,843,618</b>    | <b>63,189,481</b>   | <b>7,357,598</b>    | <b>49,413,847</b>   | <b>8,622,492</b>    | <b>20,618,690</b>   | <b>19,878,197</b>   | <b>349</b>   | <b>599,452</b>     | <b>600,253</b>     | <b>18,213</b>   | <b>145,764</b>      |
|  | <b>Rate Base Adjusted For Rate Making</b> | <b>2,368,919,523</b> | <b>1,765,172</b> | <b>2,367,154,351</b> | <b>8,291,477</b>   | <b>741,796,375</b>   | <b>80,000,097</b>   | <b>602,175,296</b>  | <b>70,313,771</b>   | <b>426,787,789</b>  | <b>71,921,874</b>   | <b>195,420,848</b>  | <b>130,240,408</b>  | <b>3,123</b> | <b>13,198,087</b>  | <b>25,192,269</b>  | <b>292,136</b>  | <b>1,520,801</b>    |
| <b>Extraordinary Adjustment Summary</b>                        |   |                      |                  |                      |                    |                      |                     |                     |                     |                     |                     |                     |                     |              |                    |                    |                 |                     |
|  | Production                                | 257,757,955          | 251,515          | 257,506,440          | 911,868            | 72,824,759           | 9,024,261           | 64,881,833          | 7,542,300           | 50,546,814          | 8,810,813           | 21,266,160          | 20,158,777          | 355          | 652,223            | 716,795            | 19,067          | 150,415             |
|  | Transmission                              | (3,139,380)          | (2,937)          | (3,136,423)          | (8,527)            | (735,015)            | (63,948)            | (822,733)           | (79,451)            | (646,975)           | (113,876)           | (410,775)           | (249,282)           | (1)          | (1,741)            | (1,913)            | (51)            | (7,159)             |
|  | Distribution                              | (3,423,006)          | (999)            | (3,422,007)          | (12,241)           | (1,320,785)          | (116,696)           | (869,628)           | (105,251)           | (585,991)           | (2,444)             | (2,366,892)         | (31,298)            | (5)          | (51,030)           | (114,629)          | (803)           | (2,519)             |
|  | <b>Total</b>                              | <b>251,195,569</b>   | <b>247,559</b>   | <b>250,948,010</b>   | <b>891,097</b>     | <b>70,768,959</b>    | <b>8,843,618</b>    | <b>63,189,481</b>   | <b>7,357,598</b>    | <b>49,413,847</b>   | <b>8,622,492</b>    | <b>20,618,690</b>   | <b>19,878,197</b>   | <b>349</b>   | <b>599,452</b>     | <b>600,253</b>     | <b>18,213</b>   | <b>145,764</b>      |
| <b>Net Rate Base After Extraordinary Adjustment Summary</b>    |   |                      |                  |                      |                    |                      |                     |                     |                     |                     |                     |                     |                     |              |                    |                    |                 |                     |
|  | Production                                | 1,395,210,021        | 1,361,346        | 1,393,848,676        | 4,938,311          | 394,311,156          | 48,879,239          | 351,319,136         | 40,833,513          | 273,491,247         | 47,685,475          | 114,969,523         | 109,071,683         | 1,923        | 3,530,915          | 3,880,486          | 103,270         | 672,849             |
|  | Transmission                              | 171,921,489          | 162,194          | 171,759,295          | 467,646            | 40,312,480           | 3,507,254           | 45,127,220          | 4,357,570           | 35,483,854          | 6,245,642           | 22,265,245          | 13,672,068          | 50           | 95,470             | 104,912            | 2,791           | 117,692             |
|  | Distribution                              | 801,268,013          | 241,632          | 801,546,381          | 2,885,521          | 302,172,739          | 27,613,604          | 205,728,940         | 25,122,688          | 117,812,688         | 17,990,757          | 58,166,080          | 7,496,652           | 1,150        | 9,521,702          | 21,208,871         | 186,125         | 590,859             |
|  | <b>Total</b>                              | <b>2,368,919,523</b> | <b>1,765,172</b> | <b>2,367,154,351</b> | <b>8,291,477</b>   | <b>741,796,375</b>   | <b>80,000,097</b>   | <b>602,175,296</b>  | <b>70,313,771</b>   | <b>426,787,789</b>  | <b>71,921,874</b>   | <b>195,420,848</b>  | <b>130,240,408</b>  | <b>3,123</b> | <b>13,198,087</b>  | <b>25,192,269</b>  | <b>292,136</b>  | <b>1,520,801</b>    |
| <b>Adjusted Return for Rate Making @9.75%</b>                  |   |                      |                  |                      |                    |                      |                     |                     |                     |                     |                     |                     |                     |              |                    |                    |                 |                     |
|  | Production Plant                          | 134,079,683          | 130,825          | 133,948,858          | 474,572            | 37,893,302           | 4,697,295           | 33,761,769          | 3,924,101           | 26,282,509          | 4,582,574           | 11,050,493          | 10,481,789          | 185          | 339,321            | 372,915            | 9,919           | 78,115              |
|  | Transmission Plant                        | 16,521,655           | 15,587           | 16,506,068           | 44,941             | 3,874,029            | 337,047             | 4,336,726           | 418,763             | 3,409,998           | 600,206             | 2,139,690           | 1,313,886           | 5            | 9,175              | 10,082             | 268             | 11,251              |
|  | Distribution Plant                        | 27,051,828           | 23,221           | 27,028,607           | 227,299            | 29,519,300           | 2,653,667           | 19,770,551          | 2,414,290           | 11,321,299          | 1,728,912           | 5,589,790           | 720,422             | 110          | 919,861            | 2,937,986          | 17,867          | 56,782              |
|  | <b>Total</b>                              | <b>227,653,166</b>   | <b>169,633</b>   | <b>227,483,533</b>   | <b>796,811</b>     | <b>71,286,632</b>    | <b>7,688,009</b>    | <b>57,869,046</b>   | <b>6,757,153</b>    | <b>41,014,307</b>   | <b>6,911,692</b>    | <b>18,779,943</b>   | <b>12,516,103</b>   | <b>300</b>   | <b>1,268,356</b>   | <b>2,420,977</b>   | <b>28,074</b>   | <b>146,149</b>      |

**COST OF SERVICE STUDY**  
(By FERC Account - 1996)

| FERC ACCT                              | Description of Account                          | Total Utility | FERC JURIS.        | PA PUC JURIS.  | BA                 | BS             | RH                | GS/GM            | GMH               | GL               | GLH               | L                | HVPS              | AL                | SE             | SM             | ST             | TRAFFIC SIGNALS |                |
|--|---|---------------|--------------------|----------------|--------------------|----------------|-------------------|------------------|-------------------|------------------|-------------------|------------------|-------------------|-------------------|----------------|----------------|----------------|-----------------|----------------|
| <b>POWER PRODUCTION EXPENSE (P320)</b> |   |               |                    |                |                    |                |                   |                  |                   |                  |                   |                  |                   |                   |                |                |                |                 |                |
| <b>A: Steam Power Generation</b>       |   |               |                    |                |                    |                |                   |                  |                   |                  |                   |                  |                   |                   |                |                |                |                 |                |
| <b>Operation</b>                       |   |               |                    |                |                    |                |                   |                  |                   |                  |                   |                  |                   |                   |                |                |                |                 |                |
| 500                                    | Supervision & Engineering                       | 100           | 6,004,647          | 5,859          | 5,998,788          | 21,243         | 1,696,502         | 210,226          | 1,511,466         | 175,703          | 1,177,522         | 205,254          | 493,410           | 469,612           | 8              | 15,194         | 16,698         | 444             | 3,504          |
| 501                                    | Fuel  | 12            | 156,405,163        | 155,916        | 156,249,247        | 440,395        | 38,737,394        | 4,020,907        | 33,827,232        | 4,212,651        | 35,749,354        | 5,631,857        | 18,407,418        | 14,278,023        | 165            | 372,351        | 409,169        | 10,891          | 151,444        |
| 502                                    | Steam Expense                                   | 100           | 8,590,515          | 8,382          | 8,582,133          | 30,391         | 2,427,092         | 300,759          | 2,162,371         | 251,369          | 1,684,616         | 293,645          | 708,755           | 671,846           | 12             | 21,737         | 23,889         | 635             | 3,011          |
| 503                                    | Steam From Other Sources                        | 100           | 0                  | 0              | 0                  | 0              | 0                 | 0                | 0                 | 0                | 0                 | 0                | 0                 | 0                 | 0              | 0              | 0              | 0               | 0              |
| 504                                    | Steam Transferred - Credit                      | 12            | 0                  | 0              | 0                  | 0              | 0                 | 0                | 0                 | 0                | 0                 | 0                | 0                 | 0                 | 0              | 0              | 0              | 0               | 0              |
| 505                                    | Electric Expenses                               | 100           | 2,104,874          | 2,054          | 2,102,820          | 7,446          | 594,693           | 73,693           | 529,831           | 61,591           | 412,770           | 71,950           | 173,661           | 164,618           | 3              | 5,326          | 5,853          | 156             | 1,226          |
| 506                                    | Misc Steam Expense                              | 100           | 6,759,727          | 6,596          | 6,753,131          | 23,914         | 1,909,836         | 236,662          | 1,701,532         | 197,798          | 1,323,595         | 231,064          | 557,707           | 528,666           | 9              | 17,105         | 18,798         | 500             | 3,943          |
| 507                                    | Rents   | 100           | 335,478            | 327            | 335,151            | 1,187          | 94,783            | 11,745           | 84,445            | 9,816            | 65,788            | 11,467           | 27,678            | 26,237            | 0              | 849            | 933            | 25              | 194            |
| 509                                    | Allowances                                      | 12            | 2,068,025          | 2,062          | 2,065,963          | 5,823          | 512,195           | 53,165           | 447,271           | 55,701           | 472,685           | 74,466           | 243,387           | 188,787           | 2              | 4,923          | 5,410          | 144             | 2,064          |
|  | <b>Total Operation</b>                          |               | <b>182,268,429</b> | <b>181,196</b> | <b>182,087,233</b> | <b>530,398</b> | <b>45,972,495</b> | <b>4,907,158</b> | <b>40,264,149</b> | <b>4,964,629</b> | <b>40,888,331</b> | <b>6,519,704</b> | <b>20,614,017</b> | <b>16,327,792</b> | <b>200</b>     | <b>437,485</b> | <b>480,751</b> | <b>12,795</b>   | <b>167,224</b> |
| <b>Maintenance</b>                     |   |               |                    |                |                    |                |                   |                  |                   |                  |                   |                  |                   |                   |                |                |                |                 |                |
| 510                                    | Supervision & Engineering                       | 100           | 1,245,970          | 1,216          | 1,244,754          | 4,408          | 352,026           | 43,622           | 313,631           | 36,459           | 244,337           | 42,590           | 102,798           | 97,445            | 2              | 3,153          | 3,465          | 97              | 72             |
| 511                                    | Structures                                      | 100           | 960,939            | 938            | 960,001            | 3,400          | 271,496           | 33,642           | 241,884           | 28,118           | 188,442           | 32,847           | 79,282            | 75,153            | 1              | 2,432          | 2,672          | 71              | 541            |
| 512                                    | Boiler Equipment                                | 100           | 15,393,792         | 15,021         | 15,378,771         | 54,458         | 4,349,232         | 538,946          | 3,874,866         | 450,440          | 3,018,751         | 526,198          | 1,270,055         | 1,203,920         | 21             | 38,952         | 42,808         | 1,189           | 8,961          |
| 513                                    | Electric Plant                                  | 100           | 4,024,699          | 3,927          | 4,020,772          | 14,238         | 1,137,105         | 140,907          | 1,013,082         | 117,767          | 789,251           | 137,574          | 332,055           | 314,764           | 6              | 10,184         | 11,192         | 298             | 2,144          |
| 514                                    | Misc Steam Plant                                | 100           | 4,637,347          | 4,525          | 4,633,022          | 16,406         | 1,310,253         | 162,363          | 1,167,345         | 135,700          | 909,432           | 158,523          | 382,618           | 362,694           | 6              | 11,735         | 12,896         | 343             | 2,706          |
|  | <b>Total Maintenance</b>                        |               | <b>26,262,947</b>  | <b>25,627</b>  | <b>26,237,320</b>  | <b>92,910</b>  | <b>7,420,112</b>  | <b>919,482</b>   | <b>6,610,807</b>  | <b>768,485</b>   | <b>5,150,213</b>  | <b>897,733</b>   | <b>2,166,808</b>  | <b>2,053,977</b>  | <b>36</b>      | <b>66,455</b>  | <b>73,034</b>  | <b>1,943</b>    | <b>13,376</b>  |
|  | <b>Total Steam Expense - Class Percentage</b>   |               | <b>100%</b>        | <b>0.0992%</b> | <b>99.9008%</b>    | <b>0.2989%</b> | <b>25.6041%</b>   | <b>2.7941%</b>   | <b>22.4786%</b>   | <b>2.7493%</b>   | <b>22.0775%</b>   | <b>3.5570%</b>   | <b>10.9244%</b>   | <b>8.8149%</b>    | <b>0.0001%</b> | <b>0.2417%</b> | <b>0.2656%</b> | <b>0.0071%</b>  | <b>0.0819%</b> |
| <b>B: Nuclear Power Generation</b>     |   |               |                    |                |                    |                |                   |                  |                   |                  |                   |                  |                   |                   |                |                |                |                 |                |
| <b>Operation</b>                       |   |               |                    |                |                    |                |                   |                  |                   |                  |                   |                  |                   |                   |                |                |                |                 |                |
| 517                                    | Supervision & Engineering                       | 100           | 13,575,986         | 13,247         | 13,562,739         | 48,028         | 3,835,645         | 475,303          | 3,417,295         | 397,249          | 2,662,276         | 464,061          | 1,120,078         | 1,061,753         | 19             | 34,352         | 37,753         | 1,004           | 7,924          |
| 518                                    | Fuel  | 12            | 25,740,809         | 25,600         | 25,715,149         | 72,479         | 6,375,313         | 661,752          | 5,567,209         | 693,309          | 5,883,548         | 926,878          | 3,029,451         | 2,349,845         | 27             | 61,281         | 67,340         | 1,792           | 24,924         |
| 519                                    | Coolants & Water                                | 100           | 558,656            | 545            | 558,111            | 1,976          | 157,838           | 19,559           | 140,623           | 16,347           | 109,533           | 19,096           | 46,092            | 43,691            | 1              | 1,414          | 1,554          | 41              | 304            |
| 520                                    | Steam Expense                                   | 100           | 5,455,447          | 5,323          | 5,450,124          | 19,300         | 1,541,336         | 190,998          | 1,373,224         | 159,633          | 1,069,823         | 186,481          | 450,098           | 426,661           | 8              | 13,804         | 15,171         | 404             | 1,163          |
| 521                                    | Steam from Other Sources                        | 0             | 0                  | 0              | 0                  | 0              | 0                 | 0                | 0                 | 0                | 0                 | 0                | 0                 | 0                 | 0              | 0              | 0              | 0               | 0              |
| 522                                    | Steam Transferred - Credit                      | 0             | 0                  | 0              | 0                  | 0              | 0                 | 0                | 0                 | 0                | 0                 | 0                | 0                 | 0                 | 0              | 0              | 0              | 0               | 0              |
| 523                                    | Electric Expenses                               | 100           | 129,447            | 126            | 129,321            | 458            | 36,573            | 4,532            | 32,584            | 3,788            | 25,385            | 4,425            | 10,680            | 10,124            | 0              | 378            | 360            | 10              | 4              |
| 524                                    | Misc Nuclear Power Expense                      | 100           | 16,937,324         | 16,527         | 16,920,797         | 59,919         | 4,785,329         | 592,966          | 4,263,998         | 495,606          | 3,321,441         | 578,960          | 1,397,403         | 1,324,637         | 23             | 42,858         | 47,101         | 1,253           | 9,804          |
| 525                                    | Rents   | 100           | 46,273,120         | 45,104         | 46,178,016         | 163,523        | 13,059,491        | 1,618,299        | 11,635,105        | 1,352,543        | 9,064,440         | 1,580,022        | 3,813,610         | 3,615,026         | 64             | 116,962        | 128,541        | 3,419           | 26,974         |
|  | <b>Total Operation</b>                          |               | <b>108,620,789</b> | <b>106,533</b> | <b>108,514,256</b> | <b>365,683</b> | <b>29,791,524</b> | <b>3,563,430</b> | <b>26,429,437</b> | <b>3,118,474</b> | <b>22,136,466</b> | <b>3,759,924</b> | <b>9,867,413</b>  | <b>8,831,736</b>  | <b>141</b>     | <b>270,948</b> | <b>292,820</b> | <b>7,923</b>    | <b>21,265</b>  |
| <b>Maintenance</b>                     |   |               |                    |                |                    |                |                   |                  |                   |                  |                   |                  |                   |                   |                |                |                |                 |                |
| 528                                    | Supervision & Engineering                       | 100           | 3,295,342          | 3,216          | 3,292,126          | 11,458         | 931,038           | 115,372          | 829,491           | 96,426           | 646,223           | 112,643          | 271,880           | 257,723           | 5              | 8,338          | 9,164          | 244             | 1,911          |
| 529                                    | Structures                                      | 100           | 1,641,883          | 1,602          | 1,640,281          | 5,808          | 463,884           | 57,483           | 413,288           | 48,043           | 321,976           | 56,124           | 135,463           | 128,409           | 2              | 4,155          | 4,566          | 121             | 974            |
| 530                                    | Reactor Plant Equipment                         | 100           | 7,760,707          | 7,573          | 7,753,134          | 27,455         | 2,192,645         | 271,707          | 1,953,495         | 227,087          | 1,521,899         | 265,280          | 640,792           | 606,951           | 11             | 19,637         | 21,582         | 574             | 4,312          |
| 531                                    | Electric Plant                                  | 100           | 3,324,829          | 3,244          | 3,321,585          | 11,762         | 939,369           | 116,404          | 836,913           | 97,288           | 652,005           | 113,651          | 274,313           | 260,029           | 5              | 8,413          | 9,246          | 246             | 1,949          |
| 532                                    | Misc Nuclear Plant                              | 100           | 8,020,938          | 7,827          | 8,013,111          | 28,376         | 2,266,168         | 280,818          | 2,018,999         | 234,702          | 1,572,921         | 274,176          | 661,763           | 627,303           | 11             | 20,296         | 22,305         | 593             | 4,681          |
|  | <b>Total Maintenance</b>                        |               | <b>24,043,699</b>  | <b>23,461</b>  | <b>24,020,238</b>  | <b>85,059</b>  | <b>6,793,104</b>  | <b>841,784</b>   | <b>6,052,182</b>  | <b>703,547</b>   | <b>4,715,014</b>  | <b>821,874</b>   | <b>1,983,710</b>  | <b>1,880,414</b>  | <b>33</b>      | <b>60,839</b>  | <b>66,863</b>  | <b>1,779</b>    | <b>14,031</b>  |
|  | <b>Total Nuclear Expense - Class Percentage</b> |               | <b>100%</b>        | <b>0.0980%</b> | <b>99.9020%</b>    | <b>0.3398%</b> | <b>27.5768%</b>   | <b>3.3206%</b>   | <b>24.4840%</b>   | <b>2.8810%</b>   | <b>20.2401%</b>   | <b>3.4537%</b>   | <b>8.9332%</b>    | <b>8.0746%</b>    | <b>0.0001%</b> | <b>0.2501%</b> | <b>0.2749%</b> | <b>0.0073%</b>  | <b>0.0658%</b> |
| <b>D: Other Power Generation</b>       |   |               |                    |                |                    |                |                   |                  |                   |                  |                   |                  |                   |                   |                |                |                |                 |                |
| <b>Operation</b>                       |   |               |                    |                |                    |                |                   |                  |                   |                  |                   |                  |                   |                   |                |                |                |                 |                |
| 546                                    | Supervision & Engineering                       | 100           | 26,232             | 26             | 26,206             | 93             | 7,411             | 918              | 6,603             | 768              | 5,144             | 897              | 2,164             | 2,052             | 0              | 66             | 73             | 2               | 13             |
| 547                                    | Fuel  | 12            | 201,637            | 201            | 201,436            | 568            | 49,940            | 5,184            | 43,610            | 5,431            | 46,088            | 7,261            | 23,731            | 18,007            | 0              | 480            | 527            | 14              | 151            |
| 548                                    | Generation Expense                              | 100           | 25,322             | 25             | 25,297             | 90             | 7,154             | 887              | 6,374             | 741              | 4,966             | 866              | 2,089             | 1,900             | 0              | 64             | 70             | 2               | 15             |
| 549                                    | Misc Power Prod Exp                             | 100           | 130,029            | 127            | 129,902            | 460            | 36,737            | 4,552            | 32,730            | 3,805            | 25,499            | 4,445            | 10,728            | 10,169            | 0              | 329            | 362            | 10              | 66             |
| 550                                    | Rents   | 100           | 0                  | 0              | 0                  | 0              | 0                 | 0                | 0                 | 0                | 0                 | 0                | 0                 | 0                 | 0              | 0              | 0              | 0               | 0              |
|  | <b>Total Operation</b>                          |               | <b>383,220</b>     | <b>378</b>     | <b>382,842</b>     | <b>1,210</b>   | <b>101,243</b>    | <b>11,541</b>    | <b>89,317</b>     | <b>10,744</b>    | <b>81,697</b>     | <b>13,468</b>    | <b>38,712</b>     | <b>32,808</b>     | <b>0</b>       | <b>940</b>     | <b>1,011</b>   | <b>27</b>       | <b>193</b>     |
| <b>Maintenance</b>                     |   |               |                    |                |                    |                |                   |                  |                   |                  |                   |                  |                   |                   |                |                |                |                 |                |
| 551                                    | Supervision & Engineering                       | 100           | 26,391             | 26             | 26,365             | 93             | 7,456             | 924              | 6,643             | 772              | 5,175             | 902              | 2,177             | 2,064             | 0              | 67             | 73             | 2               | 15             |
| 552                                    | Structures                                      | 100           | 32,128             | 31             | 32,097             | 114            | 9,077             | 1,125            | 8,087             | 940              | 6,300             | 1,098            | 2,651             | 2,513             | 0              | 81             | 89             | 2               | 19             |
| 553                                    | Gen & Electric Plant                            | 100           | 36,380             | 35             | 36,345             | 129            | 10,278            | 1,274            | 9,157             | 1,065            | 7,134             | 1,244            | 3,002             | 2,845             | 0              | 92             | 101            | 3               | 21             |
| 554                                    | Misc Power Exp                                  | 100           | 17,924             | 17             | 17,907             | 63             | 5,064             | 628              | 4,512             | 524              | 3,515             | 613              | 1,479             | 1,402             | 0              | 45             | 50             | 1               | 10             |
|  | <b>Total Maintenance</b>                        |               | <b>112,823</b>     | <b>110</b>     | <b>112,713</b>     | <b>399</b>     | <b>31,876</b>     | <b>3,950</b>     | <b>28,399</b>     | <b>3,301</b>     | <b>22,125</b>     | <b>3,857</b>     | <b>8,824</b>      | <b>8,282</b>      | <b>0</b>       | <b>285</b>     | <b>314</b>     | <b>8</b>        | <b>64</b>      |
|  | <b>Total Other Power Production Expense</b>     |               | <b>496,043</b>     | <b>488</b>     | <b>495,555</b>     | <b>1,609</b>   | <b>133,119</b>    | <b>15,491</b>    | <b>117,717</b>    | <b>14,046</b>    | <b>103,822</b>    | <b>17,324</b>    | <b>48,021</b>     | <b>41,432</b>     | <b>1</b>       | <b>1,225</b>   | <b>1,346</b>   | <b>36</b>       | <b>167</b>     |
| <b>E: Other Power Supply Expense</b>   |   |               |                    |                |                    |                |                   |                  |                   |                  |                   |                  |                   |                   |                |                |                |                 |                |
| 555                                    | Purchased Power                                 | 12            | 32,269,274         | 32,168         | 32,237,106         | 90,862         | 7,992,240         | 829,587          | 6,979,183         | 869,148          | 7,375,752         | 1,161,956        | 3,797,790         | 2,945,820         | 34             | 76,871         | 84,419         | 2,247           | 11,245         |
|  | Energy Related                                  | 0             | 0                  | 0              | 0                  | 0              | 0                 | 0                | 0                 | 0                | 0                 | 0                | 0                 | 0                 | 0              | 0              | 0              | 0               | 0              |
|  | Demand Related                                  | 0             | 0                  | 0              | 0                  | 0              | 0                 | 0                | 0                 | 0                | 0                 | 0                | 0                 | 0                 | 0              | 0              | 0              | 0               | 0              |
| 556                                    | System Control & Load Dispatch                  | 100           | 0                  | 0              | 0                  | 0              | 0                 | 0                | 0                 | 0                | 0                 | 0                | 0                 | 0                 | 0              | 0              | 0              | 0               | 0              |
| 557                                    | Other Expense                                   | 100           | 382,659            | 373            | 382,286            | 1,354          | 108,113           | 13,397           | 96,321            | 11,197           | 75,040            |                  |                   |                   |                |                |                |                 |                |

**COST OF SERVICE STUDY**  
(By FERC Account - 1996)

| FERC ACCT  | Description of Account            | Total kWh         | FERC JURIS.    | PA PUC JURIS.     | RA             | RS                | RH               | GL/GM            | GMH              | GL               | GLH            | L                | HVPS             | AL             | SE             | JM               | SH             | TRAFF. SIGNALS |
|--|-----------------------------------|-------------------|----------------|-------------------|----------------|-------------------|------------------|------------------|------------------|------------------|----------------|------------------|------------------|----------------|----------------|------------------|----------------|----------------|
| <b>Transmission Expense</b>                          |                                   |                   |                |                   |                |                   |                  |                  |                  |                  |                |                  |                  |                |                |                  |                |                |
| <b>Operation</b>                                     |                                   |                   |                |                   |                |                   |                  |                  |                  |                  |                |                  |                  |                |                |                  |                |                |
| 560  | Supervision & Engineering         | 289,396           | 282            | 289,114           | 814            | 70,190            | 6,107            | 78,450           | 7,587            | 61,783           | 10,875         | 28,945           | 23,805           | 0              | 166            | 183              | 5              | 204            |
| 561  | Load Dispatching                  | 964,019           | 941            | 963,078           | 2,712          | 233,814           | 20,342           | 261,327          | 25,274           | 205,808          | 36,225         | 96,419           | 79,299           | 0              | 554            | 608              | 16             | 679            |
| 562  | Station Expense                   | 585,615           | 556            | 585,059           | 1,603          | 138,215           | 12,025           | 154,479          | 14,940           | 121,659          | 21,414         | 72,749           | 46,876           | 0              | 327            | 360              | 10             | 401            |
| 563  | Overhead Line Expense             | 3,116             | 3              | 3,113             | 8              | 709               | 62               | 796              | 77               | 624              | 110            | 481              | 241              | 0              | 2              | 2                | 0              | 2              |
| 564  | Underground Line Expense          | 33,965            | 33             | 33,932            | 96             | 8,238             | 717              | 9,207            | 890              | 7,251            | 1,276          | 3,397            | 2,794            | 0              | 20             | 21               | 1              | 24             |
| 565  | Transmission By Other             | 5,411,140         | 5,280          | 5,405,860         | 15,225         | 1,312,423         | 114,183          | 1,466,858        | 141,866          | 1,155,221        | 203,335        | 541,210          | 445,111          | 2              | 3,106          | 3,416            | 97             | 3,872          |
| 566  | Misc. Trans. Expense              | 64,163            | 60             | 64,107            | 174            | 15,023            | 1,307            | 16,816           | 1,624            | 13,224           | 2,320          | 8,396            | 5,093            | 0              | 36             | 39               | 1              | 44             |
| 567  | Rents                             | 484,227           | 458            | 485,769           | 1,321          | 113,839           | 9,904            | 127,425          | 12,305           | 100,204          | 17,637         | 63,621           | 38,609           | 0              | 270            | 296              | 8              | 311            |
|  | <b>Total Operation</b>            | <b>7,837,645</b>  | <b>7,614</b>   | <b>7,830,031</b>  | <b>21,953</b>  | <b>1,892,452</b>  | <b>164,646</b>   | <b>2,115,358</b> | <b>204,564</b>   | <b>1,665,774</b> | <b>293,199</b> | <b>815,217</b>   | <b>641,829</b>   | <b>2</b>       | <b>4,482</b>   | <b>4,925</b>     | <b>131</b>     | <b>5,497</b>   |
| <b>Maintenance</b>                                   |                                   |                   |                |                   |                |                   |                  |                  |                  |                  |                |                  |                  |                |                |                  |                |                |
| 568  | Supervision & Engineering         | 61,655            | 60             | 61,595            | 173            | 14,954            | 1,301            | 16,714           | 1,616            | 13,163           | 2,317          | 6,167            | 5,072            | 0              | 35             | 39               | 1              | 43             |
| 569  | Structures                        | 457,572           | 431            | 457,141           | 1,243          | 107,130           | 9,321            | 119,915          | 11,580           | 94,298           | 16,598         | 59,871           | 36,333           | 0              | 254            | 279              | 7              | 311            |
| 570  | Station Equipment                 | 438,228           | 413            | 437,815           | 1,190          | 102,601           | 8,926            | 114,846          | 11,091           | 90,312           | 15,896         | 57,340           | 34,797           | 0              | 243            | 267              | 7              | 298            |
| 571  | Overhead Lines                    | 2,275,982         | 2,144          | 2,273,838         | 6,182          | 532,870           | 46,361           | 596,463          | 57,601           | 469,043          | 82,558         | 297,803          | 180,724          | 1              | 1,202          | 1,387            | 37             | 1,548          |
| 572  | Underground Lines                 | 40,997            | 40             | 40,957            | 115            | 9,943             | 865              | 11,114           | 1,075            | 8,752            | 1,541          | 4,100            | 3,372            | 0              | 24             | 26               | 1              | 29             |
| 573  | Misc. Transmission Expense        | 0                 | 0              | 0                 | 0              | 0                 | 0                | 0                | 0                | 0                | 0              | 0                | 0                | 0              | 0              | 0                | 0              | 0              |
|  | <b>Total Maintenance</b>          | <b>3,274,434</b>  | <b>3,088</b>   | <b>3,271,346</b>  | <b>8,903</b>   | <b>767,499</b>    | <b>66,774</b>    | <b>859,051</b>   | <b>82,963</b>    | <b>675,568</b>   | <b>118,909</b> | <b>425,281</b>   | <b>260,299</b>   | <b>1</b>       | <b>1,818</b>   | <b>1,997</b>     | <b>53</b>      | <b>2,277</b>   |
|  | <b>Total Transmission Expense</b> | <b>11,112,079</b> | <b>10,702</b>  | <b>11,101,377</b> | <b>30,857</b>  | <b>2,659,951</b>  | <b>231,420</b>   | <b>2,974,410</b> | <b>287,527</b>   | <b>2,341,342</b> | <b>412,108</b> | <b>1,240,499</b> | <b>902,128</b>   | <b>3</b>       | <b>6,299</b>   | <b>6,922</b>     | <b>184</b>     | <b>7,776</b>   |
| <b>Total Transmission Expense - Class Percentage</b> |                                   | <b>100%</b>       | <b>0.0963%</b> | <b>99.9037%</b>   | <b>0.2777%</b> | <b>23.9375%</b>   | <b>2.0826%</b>   | <b>26.7674%</b>  | <b>2.5875%</b>   | <b>21.0702%</b>  | <b>3.7087%</b> | <b>11.1635%</b>  | <b>8.1184%</b>   | <b>0.0000%</b> | <b>0.0567%</b> | <b>0.0623%</b>   | <b>0.0017%</b> | <b>0.0693%</b> |
| <b>Distribution Expense</b>                          |                                   |                   |                |                   |                |                   |                  |                  |                  |                  |                |                  |                  |                |                |                  |                |                |
| <b>Operation</b>                                     |                                   |                   |                |                   |                |                   |                  |                  |                  |                  |                |                  |                  |                |                |                  |                |                |
| 580  | Supervision & Engineering         | 2,216,899         | 0              | 2,216,899         | 13,228         | 1,043,319         | 137,208          | 843,072          | 94,906           | 58,332           | 5,868          | 0                | 0                | 5              | 8,986          | 9,876            | 263            | 1,817          |
| 581  | Load Dispatching                  | 1,154,492         | 1,068          | 1,153,424         | 4,034          | 318,139           | 41,839           | 308,377          | 39,383           | 219,887          | 37,293         | 89,490           | 68,588           | 2              | 2,740          | 3,011            | 80             | 360            |
| 582  | Station Expense                   | 2,833,152         | 1,421          | 2,831,731         | 9,774          | 773,096           | 100,386          | 736,350          | 84,940           | 509,468          | 65,704         | 479,425          | 53,998           | 4              | 7,584          | 9,439            | 196            | 1,348          |
| 583  | Overhead Line Expense             | 3,631,484         |                |                   |                |                   |                  |                  |                  |                  |                |                  |                  |                |                |                  |                |                |
|  | Primary                           | 1,280,522         | 256            | 1,280,266         | 6,070          | 687,853           | 57,922           | 300,061          | 33,008           | 64,390           | 10,262         | 15,948           | 0                | 3              | 32,735         | 69,481           | 699            | 1,815          |
|  | Secondary                         | 2,350,962         | 469            | 2,350,463         | 11,143         | 1,262,857         | 106,341          | 550,894          | 60,600           | 118,215          | 18,840         | 29,280           | 0                | 6              | 60,099         | 127,563          | 1,284          | 1,348          |
| 584  | Underground Line Expense          | 802,063           |                |                   |                |                   |                  |                  |                  |                  |                |                  |                  |                |                |                  |                |                |
|  | Primary                           | 732,043           | 194            | 731,849           | 1,604          | 140,999           | 16,288           | 233,881          | 36,674           | 213,152          | 35,313         | 47,200           | 0                | 1              | 2,179          | 4,195            | 72             | 297            |
|  | Secondary                         | 70,020            | 19             | 70,002            | 153            | 13,487            | 1,558            | 22,371           | 3,508            | 20,388           | 3,378          | 4,515            | 0                | 0              | 208            | 401              | 7              | 29             |
| 585  | Street Lighting & Signal Expense  | 292,590           | 0              | 292,590           | 0              | 0                 | 0                | 35,334           | 0                | 107,032          | 0              | 17,172           | 133,052          | 0              | 0              | 0                | 0              | 0              |
| 586  | Meter Expense                     | 1,285,488         | 110            | 1,285,378         | 3,120          | 547,056           | 25,117           | 590,976          | 41,112           | 57,070           | 10,227         | 8,587            | 2,114            | 0              | 0              | 0                | 0              | 0              |
| 587  | Customer Install Expense          | 3,447,613         | 0              | 3,447,613         | 0              | 0                 | 0                | 416,344          | 0                | 1,261,166        | 0              | 202,334          | 1,567,769        | 0              | 0              | 0                | 0              | 0              |
| 588  | Misc. Distribution Expense        | 3,192,187         | 932            | 3,191,255         | 11,418         | 1,231,722         | 108,827          | 810,980          | 98,154           | 453,220          | 69,424         | 220,734          | 29,188           | 5              | 47,589         | 106,899          | 748            | 2,347          |
| 589  | Rents                             | 1,827,440         | 533            | 1,826,907         | 6,536          | 705,127           | 62,300           | 464,264          | 56,190           | 259,456          | 39,744         | 126,364          | 16,709           | 3              | 27,244         | 61,197           | 428            | 1,341          |
|  | <b>Total Operation</b>            | <b>20,683,408</b> | <b>5,002</b>   | <b>20,678,407</b> | <b>67,081</b>  | <b>6,723,655</b>  | <b>657,784</b>   | <b>5,312,906</b> | <b>548,476</b>   | <b>3,341,776</b> | <b>296,052</b> | <b>1,241,051</b> | <b>1,891,418</b> | <b>27</b>      | <b>189,364</b> | <b>392,062</b>   | <b>3,778</b>   | <b>12,976</b>  |
| <b>Maintenance</b>                                   |                                   |                   |                |                   |                |                   |                  |                  |                  |                  |                |                  |                  |                |                |                  |                |                |
| 590  | Supervision & Engineering         | 454,314           | 0              | 454,314           | 2,711          | 213,810           | 28,118           | 172,773          | 19,449           | 11,954           | 1,202          | 0                | 0                | 1              | 1,841          | 2,074            | 54             | 377            |
| 591  | Structures                        | 466,745           | 234            | 466,511           | 1,610          | 127,363           | 16,538           | 121,309          | 13,993           | 83,932           | 10,824         | 78,982           | 8,896            | 1              | 1,249          | 1,555            | 32             | 225            |
| 592  | Station Equipment                 | 1,457,120         | 731            | 1,456,389         | 5,027          | 397,611           | 51,629           | 378,713          | 43,686           | 262,025          | 33,792         | 246,574          | 27,772           | 2              | 3,900          | 4,854            | 101            | 204            |
| 593  | Overhead Lines                    | 13,504,784        |                |                   |                |                   |                  |                  |                  |                  |                |                  |                  |                |                |                  |                |                |
|  | Primary                           | 13,504,784        | 2,696          | 13,502,088        | 64,012         | 7,254,311         | 610,862          | 3,164,539        | 348,111          | 679,072          | 108,225        | 168,197          | 0                | 32             | 345,233        | 732,769          | 7,376          | 19,349         |
|  | Secondary                         | 845,121           | 0              | 845,121           | 0              | 0                 | 0                | 0                | 0                | 0                | 0              | 0                | 0                | 0              | 0              | 0                | 0              | 0              |
| 594  | Underground Lines                 | 845,121           | 224            | 844,897           | 1,852          | 162,779           | 18,804           | 270,009          | 42,339           | 246,077          | 40,768         | 54,491           | 0                | 1              | 2,515          | 4,843            | 83             | 337            |
|  | Primary                           | 845,121           | 0              | 845,121           | 0              | 0                 | 0                | 0                | 0                | 0                | 0              | 0                | 0                | 0              | 0              | 0                | 0              | 0              |
|  | Secondary                         | 0                 | 0              | 0                 | 0              | 0                 | 0                | 0                | 0                | 0                | 0              | 0                | 0                | 0              | 0              | 0                | 0              | 0              |
| 595  | Line Transformers                 | 105,029           |                |                   |                |                   |                  |                  |                  |                  |                |                  |                  |                |                |                  |                |                |
|  | Demand Related                    | 105,029           | 26             | 105,003           | 328            | 42,072            | 2,737            | 22,634           | 3,428            | 21,448           | 3,754          | 4,325            | 2,520            | 0              | 174            | 1,544            | 23             | 16             |
|  | Customer Related                  | 0                 | 0              | 0                 | 0              | 0                 | 0                | 0                | 0                | 0                | 0              | 0                | 0                | 0              | 0              | 0                | 0              | 0              |
| 596  | Street Lighting & Signal Systems  | 84,234            | 0              | 84,234            | 0              | 0                 | 0                | 0                | 0                | 0                | 0              | 0                | 0                | 0              | 0              | 0                | 0              | 0              |
| 597  | Meters                            | 596,821           | 1              | 596,820           | 2,359          | 419,177           | 19,198           | 140,058          | 9,528            | 5,225            | 820            | 391              | 64               | 0              | 0              | 0                | 0              | 0              |
| 598  | Misc. Distribution Plant Expense  | 403,934           | 118            | 403,816           | 1,445          | 155,860           | 13,771           | 102,620          | 12,420           | 57,350           | 8,785          | 27,931           | 3,693            | 1              | 6,022          | 13,577           | 95             | 297            |
|  | <b>Total Maintenance</b>          | <b>17,918,102</b> | <b>4,029</b>   | <b>17,914,073</b> | <b>79,344</b>  | <b>8,772,982</b>  | <b>761,657</b>   | <b>4,372,654</b> | <b>492,955</b>   | <b>1,367,084</b> | <b>208,171</b> | <b>580,892</b>   | <b>42,945</b>    | <b>37</b>      | <b>386,142</b> | <b>820,093</b>   | <b>7,763</b>   | <b>21,354</b>  |
|  | <b>Total Distribution Expense</b> | <b>38,601,510</b> | <b>9,031</b>   | <b>38,592,479</b> | <b>146,425</b> | <b>15,496,637</b> | <b>1,419,441</b> | <b>9,685,560</b> | <b>1,041,431</b> | <b>4,708,860</b> | <b>504,223</b> | <b>1,821,942</b> | <b>1,934,363</b> | <b>63</b>      | <b>575,506</b> | <b>1,212,155</b> | <b>11,541</b>  | <b>34,313</b>  |
| <b>Total Distribution Expense - Class Percentage</b> |                                   | <b>100%</b>       | <b>0.0234%</b> | <b>99.9766%</b>   | <b>0.3793%</b> | <b>40.1452%</b>   | <b>3.6772%</b>   | <b>25.0911%</b>  | <b>2.6979%</b>   | <b>12.1966%</b>  | <b>1.3062%</b> | <b>4.7199%</b>   | <b>5.0111%</b>   | <b>0.0002%</b> | <b>1.4909%</b> | <b>3.1402%</b>   | <b>0.0399%</b> | <b>0.0869%</b> |

**COST OF SERVICE STUDY**

(By FERC Account - 1996)

| FERC<br>ACCT  | Description of Account                            | Total<br>UTILITY | FERC<br>JULIS     | PA PUC<br>JULIS   | RA             | RS                | RH               | GS/GM            | GMH            | GL             | GLH           | L             | HYP'S        | AL        | SE        | SM            | SH         | TRAFFIC<br>SIGNALS |
|---|---|------------------|-------------------|-------------------|----------------|-------------------|------------------|------------------|----------------|----------------|---------------|---------------|--------------|-----------|-----------|---------------|------------|--------------------|
| <b>Customer Accounts Expense</b>                      |   |                  |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
| 901   | Supervision                                       | 3,406,371        |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 39               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Transmission                                      | 39               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Distribution                                      | 39               | 3,406,371         | 3,406,366         | 13,464         | 2,392,465         | 109,572          | 799,383          | 54,382         | 29,825         | 4,678         | 2,231         | 366          | 0         | 0         | 0             | 0          | 0                  |
| 902   | Meter Reading                                     | 4,382,518        |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 39               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Transmission                                      | 39               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Distribution                                      | 39               | 4,382,518         | 4,382,512         | 17,323         | 3,078,062         | 140,971          | 1,028,458        | 69,966         | 38,371         | 6,018         | 2,871         | 471          | 0         | 0         | 0             | 0          | 0                  |
| 903   | Cust Records & Contracts                          | 13,520,070       |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 39               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Transmission                                      | 39               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Distribution                                      | 39               | 13,520,070        | 13,520,051        | 53,441         | 9,495,822         | 434,897          | 3,172,794        | 215,845        | 118,376        | 18,567        | 8,856         | 1,452        | 0         | 0         | 0             | 0          | 0                  |
| 904   | Uncollectable Accounts                            | 11,000,000       |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Transmission                                      | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Distribution                                      | 13               | 11,000,000        | 10,999,981        | 52,994         | 9,416,428         | 431,261          | 974,866          | 63,696         | 12,124         | 2,011         | 493           | 57           | 38        | 19        | 13,604        | 266        | 17,111             |
| 905   | Misc Customer Accounts Expense                    | 187,178          |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Transmission                                      | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Distribution                                      | 13               | 187,178           | 187,178           | 902            | 160,232           | 7,338            | 16,589           | 1,084          | 206            | 34            | 8             | 1            | 1         | 0         | 231           | 5          | 547                |
|   | <b>Total Customer Accounts Expense</b>            |                  | <b>32,496,137</b> | <b>32,496,088</b> | <b>138,125</b> | <b>24,543,009</b> | <b>1,124,039</b> | <b>5,992,091</b> | <b>404,973</b> | <b>198,902</b> | <b>31,309</b> | <b>14,460</b> | <b>2,347</b> | <b>39</b> | <b>19</b> | <b>13,836</b> | <b>270</b> | <b>32,670</b>      |
|   | Customer Service & Info Expense                   |                  | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
| 907   | Customer Service & Info                           | 176,328          |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Transmission                                      | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Distribution                                      | 13               | 176,328           | 176,328           | 849            | 150,944           | 6,913            | 15,627           | 1,021          | 194            | 32            | 8             | 1            | 1         | 0         | 718           | 4          | 511                |
| 908   | Customer Assistance                               | 1,740,258        |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Transmission                                      | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Distribution                                      | 13               | 1,740,258         | 1,740,255         | 8,384          | 1,489,729         | 68,228           | 154,229          | 10,077         | 1,918          | 318           | 78            | 9            | 6         | 3         | 2,152         | 42         | 5,402              |
| 909   | Info, Instruct, Advertise                         | 220,069          |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Transmission                                      | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Distribution                                      | 13               | 220,069           | 220,069           | 1,060          | 188,388           | 8,628            | 19,503           | 1,274          | 243            | 40            | 10            | 1            | 1         | 0         | 272           | 5          | 1,111              |
| 910   | Misc. Customer Service & Info.                    | 30,974           |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Transmission                                      | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Distribution                                      | 13               | 30,974            | 30,974            | 149            | 26,515            | 1,214            | 2,745            | 179            | 34             | 6             | 1             | 0            | 0         | 0         | 38            | 1          | 96                 |
|   | <b>Total Customer Service &amp; Info. Expense</b> |                  | <b>2,167,629</b>  | <b>2,167,625</b>  | <b>10,443</b>  | <b>1,855,575</b>  | <b>84,983</b>    | <b>192,104</b>   | <b>12,552</b>  | <b>2,389</b>   | <b>396</b>    | <b>97</b>     | <b>11</b>    | <b>7</b>  | <b>4</b>  | <b>2,681</b>  | <b>57</b>  | <b>6,164</b>       |
| 911   | Supervision                                       | 18,837           |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Transmission                                      | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Distribution                                      | 13               | 18,837            | 18,837            | 91             | 16,125            | 739              | 1,669            | 109            | 21             | 3             | 1             | 0            | 0         | 0         | 23            | 0          | 55                 |
| 912   | Demonstration & Selling                           | 4,377,036        |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Transmission                                      | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Distribution                                      | 13               | 4,377,036         | 4,377,028         | 21,087         | 3,746,913         | 171,604          | 387,911          | 25,345         | 4,824          | 800           | 196           | 23           | 15        | 8         | 5,413         | 166        | 17,762             |
| 913   | Advertising                                       | 19,427           |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Transmission                                      | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Distribution                                      | 13               | 19,427            | 19,427            | 94             | 16,630            | 762              | 1,722            | 112            | 21             | 4             | 1             | 0            | 0         | 0         | 24            | 0          | 57                 |
| 916   | Misc. Sales Expense                               | 118,689          |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Transmission                                      | 13               | 0                 | 0                 | 0              | 0                 | 0                | 0                | 0              | 0              | 0             | 0             | 0            | 0         | 0         | 0             | 0          | 0                  |
|   | Distribution                                      | 13               | 118,689           | 118,689           | 572            | 101,602           | 4,653            | 10,519           | 687            | 131            | 22            | 5             | 1            | 0         | 0         | 147           | 3          | 141                |
|   | <b>Total Sales Expense</b>                        |                  | <b>4,533,989</b>  | <b>4,533,981</b>  | <b>21,843</b>  | <b>3,881,271</b>  | <b>177,757</b>   | <b>401,821</b>   | <b>26,254</b>  | <b>4,997</b>   | <b>829</b>    | <b>203</b>    | <b>23</b>    | <b>16</b> | <b>8</b>  | <b>5,607</b>  | <b>169</b> | <b>13,240</b>      |
| <b>Administrative &amp; General Expense Operation</b> |   |                  |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
| 920   | Salaries  | 26,338,845       |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 104              | 15,844,389        | 15,641            | 15,828,748     | 49,879            | 4,178,453        | 475,173          | 3,685,255      | 443,727        | 3,384,754     | 557,213       | 1,608,124    | 1,351,018 | 19        | 38,817        | 42,632     | 1,135              |
|   | Transmission                                      | 106              | 624,942           | 602               | 624,340        | 1,735             | 149,595          | 13,015           | 167,280        | 16,170         | 131,677       | 23,177        | 69,766       | 50,736    | 0         | 354           | 389        | 10                 |
|   | Distribution                                      | 107              | 9,869,514         | 2,309             | 9,867,205      | 37,437            | 3,962,132        | 362,918          | 2,476,374      | 266,270        | 1,203,947     | 128,918       | 465,879      | 494,572   | 16        | 147,144       | 109,920    | 2,931              |
| 921   | Office Supplies & Expenses                        | 5,596,877        |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 104              | 3,366,856         | 3,324             | 3,363,532      | 10,599            | 887,901          | 100,972          | 783,099        | 94,290         | 719,244       | 118,405       | 341,719      | 287,085   | 4         | 8,247         | 9,663      | 241                |
|   | Transmission                                      | 106              | 132,797           | 128               | 132,669        | 369               | 31,788           | 2,766            | 35,546         | 3,436          | 27,981        | 4,925         | 14,825       | 10,781    | 0         | 75            | 83         | 2                  |
|   | Distribution                                      | 107              | 2,097,224         | 491               | 2,096,733      | 7,955             | 841,934          | 77,118           | 526,217        | 56,581         | 255,833       | 27,394        | 98,986       | 105,094   | 3         | 31,267        | 65,856     | 677                |
| 922   | Admin Expenses Transferred - Credit               | (6,171,869)      |                   |                   |                |                   |                  |                  |                |                |               |               |              |           |           |               |            |                    |
|   | Production  | 104              | (3,712,748)       | (3,665)           | (3,709,083)    | (11,688)          | (979,119)        | (111,345)        | (863,550)      | (103,977)      | (793,135)     | (130,569)     | (376,825)    | (316,578) | (4)       | (9,095)       | (9,994)    | (266)              |
|   | Transmission                                      | 106              | (146,440)         | (141)             | (146,299)      | (407)             | (35,054)         | (3,050)          | (39,198)       | (3,789)        | (30,855)      | (5,431)       | (16,348)     | (11,889)  | (0)       | (83)          | (91)       | (2)                |
|   | Distribution                                      | 107              | (2,312,681)       | (541)             | (2,312,140)    | (8,773)           | (928,429)        | (85,041)         | (580,278)      | (62,394)       | (282,116)     | (30,209)      | (109,156)    | (115,891) | (4)       | (34,480)      | (77,672)   | (691)              |

**COST OF SERVICE STUDY**  
(By FERC Account - 1996)

| FERC ACCT   | Description of Account               | Total Utility      | FERC JURIS.    | PA PUC JURIS.      | BA               | RS                 | RH                | GS/IGM             | GMH               | GL                 | GLH               | L                 | HVPS              | AL         | SE               | SM               | SH            | TRAFFIC SIGNALS |
|---|--------------------------------------|--------------------|----------------|--------------------|------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|-------------------|------------|------------------|------------------|---------------|-----------------|
| 923   | Outside Services Employment          | 8,467,154          |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | 5,093,499          | 5.028          | 5,088,471          | 16,035           | 1,343,248          | 152,754           | 1,184,700          | 142,645           | 1,088,097          | 179,127           | 516,964           | 434,312           | 6          | 12,477           | 13,711           | 365           | 4,000           |
|   | Transmission                         | 200,900            | 193            | 200,707            | 558              | 48,090             | 4,184             | 53,776             | 5,196             | 42,330             | 7,451             | 22,428            | 16,310            | 0          | 114              | 125              | 3             | 140             |
|   | Distribution                         | 3,172,755          | 742            | 3,172,013          | 12,035           | 1,273,707          | 116,667           | 796,060            | 85,598            | 387,033            | 41,443            | 149,750           | 158,990           | 5          | 47,302           | 99,630           | 944           | 2,800           |
| 924   | Property Insurance                   | 5,604,103          |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | 5,155,774          | 5.031          | 5,150,743          | 18,251           | 1,457,214          | 180,652           | 1,298,346          | 150,900           | 1,010,549          | 176,209           | 424,824           | 403,019           | 7          | 13,048           | 14,340           | 381           | 1,000           |
|   | Transmission                         | 57,196             | 54             | 57,142             | 156              | 13,411             | 1,167             | 15,013             | 1,450             | 11,805             | 2,078             | 7,409             | 4,548             | 0          | 32               | 35               | 1             | 50              |
|   | Distribution                         | 391,133            | 118            | 391,015            | 1,408            | 149,851            | 13,470            | 100,356            | 12,255            | 57,464             | 8,775             | 28,369            | 3,657             | 1          | 4,674            | 10,357           | 91            | 260             |
| 925   | Injuries & Damages                   | 3,604,775          |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | 2,168,488          | 2.141          | 2,166,347          | 6,826            | 571,869            | 65,033            | 504,370            | 60,729            | 463,243            | 76,261            | 220,090           | 184,902           | 3          | 5,312            | 5,837            | 155           | 1,100           |
|   | Transmission                         | 85,531             | 82             | 85,448             | 238              | 20,474             | 1,781             | 22,894             | 2,213             | 18,071             | 3,172             | 9,548             | 6,944             | 0          | 48               | 53               | 1             | 50              |
|   | Distribution                         | 1,350,757          | 316            | 1,350,441          | 5,124            | 542,264            | 49,670            | 338,920            | 36,442            | 164,774            | 17,644            | 63,754            | 67,688            | 2          | 20,138           | 42,416           | 404           | 1,200           |
| 926   | Pensions & Benefits                  | 13,504,446         |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | 8,123,731          | 8.019          | 8,115,712          | 25,574           | 2,142,375          | 243,631           | 1,889,503          | 227,507           | 1,735,430          | 285,694           | 824,517           | 692,693           | 10         | 19,900           | 21,869           | 582           | 6,400           |
|   | Transmission                         | 320,420            | 309            | 320,111            | 890              | 76,700             | 6,673             | 85,768             | 8,291             | 67,513             | 11,883            | 35,770            | 26,013            | 0          | 182              | 200              | 5             | 220             |
|   | Distribution                         | 5,060,295          | 1,184          | 5,059,111          | 19,195           | 2,031,463          | 186,675           | 1,269,686          | 136,522           | 617,287            | 66,099            | 238,839           | 253,577           | 8          | 75,443           | 158,902          | 1,513         | 4,500           |
| 927   | Franchise Requirements               | 0                  |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | 0                  | 0              | 0                  | 0                | 0                  | 0                 | 0                  | 0                 | 0                  | 0                 | 0                 | 0                 | 0          | 0                | 0                | 0             | 0               |
|   | Transmission                         | 0                  | 0              | 0                  | 0                | 0                  | 0                 | 0                  | 0                 | 0                  | 0                 | 0                 | 0                 | 0          | 0                | 0                | 0             | 0               |
|   | Distribution                         | 0                  | 0              | 0                  | 0                | 0                  | 0                 | 0                  | 0                 | 0                  | 0                 | 0                 | 0                 | 0          | 0                | 0                | 0             | 0               |
| 928   | Regulatory Commission Expense-VT P58 | 1,790,074          |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | 1,076,836          | 1.063          | 1,075,773          | 3,390            | 283,981            | 32,294            | 250,462            | 30,157            | 230,039            | 37,870            | 109,293           | 91,820            | 1          | 2,638            | 2,899            | 77            | 80              |
|   | Transmission                         | 42,473             | 41             | 42,432             | 118              | 10,167             | 885               | 11,369             | 1,099             | 8,949              | 1,575             | 4,742             | 3,448             | 0          | 24               | 26               | 1             | 10              |
|   | Distribution                         | 670,764            | 157            | 670,607            | 2,544            | 269,279            | 24,665            | 168,302            | 18,097            | 81,824             | 8,762             | 31,659            | 33,613            | 1          | 10,000           | 21,063           | 201           | 50              |
| 929   | Duplicate Charges - Credit           | (1,247,245)        |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | (750,292)          | (741)          | (749,552)          | (2,362)          | (197,866)          | (22,501)          | (174,511)          | (21,012)          | (160,281)          | (26,386)          | (76,151)          | (63,976)          | (1)        | (1,838)          | (2,020)          | (54)          | (50)            |
|   | Transmission                         | (29,593)           | (29)           | (29,565)           | (82)             | (7,084)            | (616)             | (7,921)            | (766)             | (6,235)            | (1,098)           | (3,304)           | (2,403)           | (0)        | (17)             | (18)             | (0)           | (10)            |
|   | Distribution                         | (467,359)          | (109)          | (467,250)          | (1,773)          | (187,622)          | (17,186)          | (117,266)          | (12,009)          | (57,011)           | (6,103)           | (22,059)          | (23,420)          | (1)        | (6,968)          | (14,676)         | (140)         | (14)            |
| 930   | Miscellaneous General Expense        | 20,628,426         |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | 16,124,257         | 15.734         | 16,108,523         | 57,043           | 4,555,612          | 564,520           | 4,058,736          | 471,815           | 3,161,997          | 551,168           | 1,330,322         | 1,261,049         | 22         | 40,800           | 44,840           | 1,193         | 4,400           |
|   | Transmission                         | 304,935            | 287            | 304,648            | 828              | 71,394             | 6,211             | 79,914             | 7,717             | 62,842             | 11,061            | 39,899            | 24,213            | 0          | 169              | 186              | 5             | 50              |
|   | Distribution                         | 4,199,233          | 1,226          | 4,198,007          | 15,020           | 1,620,296          | 143,158           | 1,066,822          | 129,118           | 596,198            | 91,326            | 290,370           | 38,395            | 6          | 62,602           | 140,623          | 945           | 1,000           |
| 931   | Rents                                | 11,498,652         |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | 6,917,126          | 6.749          | 6,910,377          | 24,486           | 1,955,038          | 242,366           | 1,741,896          | -202,452          | 1,355,780          | 236,406           | 569,955           | 540,701           | 10         | 17,506           | 19,239           | 512           | 4,000           |
|   | Transmission                         | 272,829            | 257            | 272,572            | 742              | 63,972             | 5,566             | 71,612             | 6,915             | 56,309             | 9,911             | 35,340            | 21,696            | 0          | 152              | 166              | 4             | 100             |
|   | Distribution                         | 4,308,697          | 1,298          | 4,307,399          | 15,506           | 1,650,754          | 148,385           | 1,105,512          | 134,995           | 633,018            | 96,667            | 312,514           | 40,282            | 6          | 51,491           | 114,092          | 1,000         | 1,100           |
|   | Total Operation                      | 89,614,238         | 67.298         | 89,546,940         | 308,855          | 27,867,790         | 2,982,034         | 22,005,082         | 2,548,043         | 16,244,304         | 2,580,817         | 7,261,763         | 6,073,000         | 122        | 557,474          | 1,039,152        | 12,240        | 65,200          |
| 935   | Maintenance of General Plant         | 3,262,706          |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | 641,465            | 633            | 640,832            | 2,019            | 169,166            | 19,238            | 149,199            | 17,964            | 137,033            | 22,559            | 65,105            | 54,696            | 1          | 1,571            | 1,727            | 46            | 500             |
|   | Transmission                         | 488,802            | 471            | 488,331            | 1,357            | 117,007            | 10,180            | 130,839            | 12,648            | 102,992            | 18,128            | 54,567            | 39,683            | 0          | 277              | 305              | 8             | 100             |
|   | Distribution                         | 2,132,439          | 499            | 2,131,940          | 8,089            | 856,071            | 78,413            | 535,053            | 57,531            | 260,129            | 27,854            | 100,648           | 106,859           | 4          | 31,792           | 66,962           | 0             | 1,800           |
|   | Total Admin. & General Expense       | 92,876,944         | 68.901         | 92,808,043         | 320,321          | 29,010,034         | 3,089,864         | 22,820,174         | 2,636,186         | 16,744,457         | 2,649,358         | 7,482,084         | 6,274,239         | 126        | 591,115          | 1,108,146        | 12,932        | 69,000          |
| <b>TOTAL OPERATION &amp; MAINTENANCE EXPENSE</b>    |                                      | <b>556,132,128</b> | <b>458.542</b> | <b>555,673,586</b> | <b>1,835,888</b> | <b>175,657,182</b> | <b>17,217,833</b> | <b>128,615,960</b> | <b>14,858,447</b> | <b>104,445,585</b> | <b>16,789,818</b> | <b>49,068,615</b> | <b>41,224,210</b> | <b>700</b> | <b>2,087,774</b> | <b>3,354,645</b> | <b>51,840</b> | <b>465,111</b>  |
| Total Customer Accounts Expense - Class Percentage  |                                      | 100%               | 0.0002%        | 99.9998%           | 0.4347%          | 77.2490%           | 3.5379%           | 16.8020%           | 1.1322%           | 0.5263%            | 0.0830%           | 0.0377%           | 0.0061%           | 0.0002%    | 0.0001%          | 0.0564%          | 0.0011%       | 0.0331%         |
| Total Admin. & Gen Expense - Class Percentage       |                                      | 100%               | 0.0742%        | 99.9258%           | 0.3449%          | 31.2349%           | 3.3268%           | 24.5703%           | 2.8384%           | 18.0286%           | 2.8525%           | 8.0359%           | 6.7554%           | 0.0001%    | 0.0364%          | 1.1931%          | 0.0139%       | 0.0743%         |
| TOTAL OPER. & MAINT. EXPENSE - Class Percentage     |                                      | 100%               | 0.0825%        | 99.9175%           | 0.3301%          | 31.5855%           | 3.0960%           | 23.1269%           | 2.6717%           | 18.7807%           | 3.0190%           | 8.8752%           | 7.4127%           | 0.0001%    | 0.3754%          | 0.6032%          | 0.0093%       | 0.0483%         |
| <b>Customer Accounts Expense Summary</b>            |                                      |                    |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | 0                  | 0              | 0                  | 0                | 0                  | 0                 | 0                  | 0                 | 0                  | 0                 | 0                 | 0                 | 0          | 0                | 0                | 0             | 0               |
|   | Transmission                         | 0                  | 0              | 0                  | 0                | 0                  | 0                 | 0                  | 0                 | 0                  | 0                 | 0                 | 0                 | 0          | 0                | 0                | 0             | 0               |
|   | Distribution                         | 32,496,137         | 49             | 32,496,088         | 138,125          | 24,543,009         | 1,124,039         | 5,992,091          | 404,973           | 198,902            | 31,309            | 14,460            | 2,347             | 39         | 19               | 13,836           | 270           | 32,000          |
|   | Total                                | 32,496,137         | 49             | 32,496,088         | 138,125          | 24,543,009         | 1,124,039         | 5,992,091          | 404,973           | 198,902            | 31,309            | 14,460            | 2,347             | 39         | 19               | 13,836           | 270           | 32,000          |
| <b>Customer Service &amp; Info Expense Summary</b>  |                                      |                    |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | 0                  | 0              | 0                  | 0                | 0                  | 0                 | 0                  | 0                 | 0                  | 0                 | 0                 | 0                 | 0          | 0                | 0                | 0             | 0               |
|   | Transmission                         | 0                  | 0              | 0                  | 0                | 0                  | 0                 | 0                  | 0                 | 0                  | 0                 | 0                 | 0                 | 0          | 0                | 0                | 0             | 0               |
|   | Distribution                         | 2,167,629          | 4              | 2,167,625          | 10,443           | 1,855,575          | 84,983            | 192,104            | 12,552            | 2,389              | 396               | 92                | 11                | 7          | 4                | 2,681            | 52            | 6,330           |
|   | Total                                | 2,167,629          | 4              | 2,167,625          | 10,443           | 1,855,575          | 84,983            | 192,104            | 12,552            | 2,389              | 396               | 92                | 11                | 7          | 4                | 2,681            | 52            | 6,330           |
| <b>Sales Expense Summary</b>                        |                                      |                    |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | 0                  | 0              | 0                  | 0                | 0                  | 0                 | 0                  | 0                 | 0                  | 0                 | 0                 | 0                 | 0          | 0                | 0                | 0             | 0               |
|   | Transmission                         | 0                  | 0              | 0                  | 0                | 0                  | 0                 | 0                  | 0                 | 0                  | 0                 | 0                 | 0                 | 0          | 0                | 0                | 0             | 0               |
|   | Distribution                         | 4,533,989          | 8              | 4,533,981          | 21,843           | 3,881,271          | 177,757           | 401,821            | 26,254            | 4,997              | 829               | 203               | 23                | 16         | 8                | 5,607            | 109           | 13,240          |
|   | Total                                | 4,533,989          | 8              | 4,533,981          | 21,843           | 3,881,271          | 177,757           | 401,821            | 26,254            | 4,997              | 829               | 203               | 23                | 16         | 8                | 5,607            | 109           | 13,240          |
| <b>Administration &amp; General Expense Summary</b> |                                      |                    |                |                    |                  |                    |                   |                    |                   |                    |                   |                   |                   |            |                  |                  |               |                 |
|   | Production                           | 60,049,381         | 58.957         | 59,990,424         | 200,051          | 16,367,873         | 1,942,789         | 14,507,502         | 1,717,198         | 12,332,749         | 2,083,956         | 5,557,937         | 4,920,741         | 77         | 149,379          | 164,163          | 4,368         | 11,641          |
|   | Transmission                         | 2,354,792          | 2,255          | 2,352,537          | 6,502            | 560,461            | 48,761            | 626,892            | 60,583            | 493,379            | 86,833            | 274,642           | 190,082           | 1          | 1,327            | 1,459            | 39            | 1,600           |
|   | Distribution                         | 30,472,771         | 7,689          | 30,465,082         | 113,768          | 12,081,700         | 1,098,315         | 7,685,780          | 858,405           | 3,918,380          | 478,569           |                   |                   |            |                  |                  |               |                 |



COST OF SERVICE STUDY

(By FERC Account - 1996)

| FERC ACCT | Description of Account  | Total Utility | FERC JURIS.  | PA PUC JURIS. | RA           | BS        | BH          | GS/GM       | GMH         | GL        | GLH         | L           | HVPS        | AL          | SE      | SM        | SH        | TRAFFIC SIGNALS |          |
|-----------|---|---------------|--------------|---------------|--------------|-----------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-------------|---------|-----------|-----------|-----------------|----------|
| 398       | Misc Equipment  |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
|           | Production  | 100           | 24,164       | 24            | 24,160       | 85        | 6,827       | 846         | 6,082       | 707       | 4,739       | 826         | 1,994       | 1,890       | 0       | 61        | 67        | 2               | 14       |
|           | Transmission  | 101           | 954          | 1             | 953          | 3         | 223         | 19          | 250         | 24        | 197         | 35          | 125         | 76          | 0       | 1         | 1         | 0               | 1        |
|           | Distribution  | 102           | 15,051       | 4             | 15,047       | 54        | 5,808       | 513         | 3,874       | 463       | 2,137       | 327         | 1,041       | 138         | 0       | 224       | 504       | 4               | 11       |
| 399       | Other Tangible Property   |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
|           | Production  | 100           | 0            | 0             | 0            | 0         | 0           | 0           | 0           | 0         | 0           | 0           | 0           | 0           | 0       | 0         | 0         | 0               | 0        |
|           | Transmission  | 101           | 0            | 0             | 0            | 0         | 0           | 0           | 0           | 0         | 0           | 0           | 0           | 0           | 0       | 0         | 0         | 0               | 0        |
|           | Distribution  | 102           | 0            | 0             | 0            | 0         | 0           | 0           | 0           | 0         | 0           | 0           | 0           | 0           | 0       | 0         | 0         | 0               | 0        |
|           | Total General Plant   |               | 18,978,777   | 13,640        | 18,965,136   | 67,049    | 6,075,103   | 651,329     | 4,798,535   | 564,135   | 3,341,361   | 561,256     | 1,492,618   | 993,674     | 26      | 135,159   | 270,175   | 2,519           | 12,197   |
|           | Total Depreciation Expense  |               | 197,588,875  | 165,150       | 197,423,725  | 692,643   | 59,108,625  | 6,769,801   | 49,244,009  | 5,767,552 | 36,525,011  | 6,254,348   | 15,985,911  | 12,695,065  | 267     | 1,429,518 | 2,808,910 | 20,671          | 121,592  |
|           | Total Depreciation Expense - Class Percentage                           |               | 100%         | 0.0836%       | 99.9164%     | 0.3505%   | 29.9150%    | 3.4262%     | 24.9225%    | 2.9190%   | 18.4854%    | 3.1653%     | 8.0905%     | 6.4250%     | 0.0001% | 0.7235%   | 1.4216%   | 0.0105%         | 0.0614%  |
|           | Amortization Expense (P336)   |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
| 404       | Amortization of Leasehold Improvements                                  |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
|           | Production  | 100           | 4,676,182    | 4,563         | 4,671,619    | 16,543    | 1,321,169   | 163,716     | 1,177,070   | 136,831   | 917,008     | 159,844     | 385,805     | 365,716     | 6       | 11,832    | 13,004    | 346             | 2,229    |
|           | Transmission  | 101           | 448,779      | 423           | 448,356      | 1,219     | 105,077     | 9,141       | 117,611     | 11,358    | 92,486      | 16,279      | 58,721      | 35,635      | 0       | 249       | 273       | 7               | 85       |
|           | Distribution  | 102           | 3,068,936    | 896           | 3,068,040    | 10,977    | 1,184,165   | 104,625     | 779,668     | 94,364    | 435,721     | 66,744      | 212,212     | 28,061      | 4       | 45,752    | 102,772   | 720             | 2,250    |
| 405       | Amortization of Transition Costs (Acct 405)                             |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
|           | Production  | 100           | 83,548,333   | 81,525        | 83,466,808   | 295,568   | 23,605,041  | 2,925,077   | 21,030,463  | 2,444,727 | 16,383,983  | 2,855,891   | 6,893,103   | 6,534,162   | 115     | 211,408   | 232,338   | 6,180           | 48,755   |
|           | Transmission  | 101           | 0            | 0             | 0            | 0         | 0           | 0           | 0           | 0         | 0           | 0           | 0           | 0           | 0       | 0         | 0         | 0               | 0        |
|           | Distribution  | 102           | 0            | 0             | 0            | 0         | 0           | 0           | 0           | 0         | 0           | 0           | 0           | 0           | 0       | 0         | 0         | 0               | 0        |
|           | Total Amortization Expense  |               | 91,742,230   | 87,406        | 91,654,824   | 324,307   | 26,215,447  | 3,202,559   | 23,104,812  | 2,687,275 | 17,829,199  | 3,098,758   | 7,549,842   | 6,963,574   | 126     | 269,241   | 348,388   | 7,253           | 54,015   |
|           | Total Amortization Expense - Class Percentage                           |               | 100%         | 0.0953%       | 99.9047%     | 0.3535%   | 28.5751%    | 3.4908%     | 25.1845%    | 2.9292%   | 19.4340%    | 3.3777%     | 8.2494%     | 7.5904%     | 0.0001% | 0.2935%   | 0.3797%   | 0.0079%         | 0.0569%  |
|           | Total Depr/Amort Expense - Class Percentage                             |               | 100%         | 0.0873%       | 99.9127%     | 0.3515%   | 29.4901%    | 3.4467%     | 25.0055%    | 2.9222%   | 18.7862%    | 3.2327%     | 8.1345%     | 6.7945%     | 0.0001% | 0.5871%   | 1.0912%   | 0.0097%         | 0.1080%  |
|           | Total General Plant Depreciation Summary                                |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
|           | Production  |               | 11,416,869   | 11,140        | 11,405,728   | 40,389    | 3,225,626   | 399,711     | 2,873,810   | 334,071   | 2,238,869   | 390,257     | 941,942     | 892,892     | 16      | 28,889    | 31,749    | 845             | 5,665    |
|           | Transmission  |               | 450,310      | 424           | 449,885      | 1,223     | 105,430     | 9,173       | 118,012     | 11,396    | 92,801      | 16,334      | 58,921      | 35,757      | 0       | 250       | 274       | 7               | 85       |
|           | Distribution  |               | 2,111,599    | 2,076         | 2,109,523    | 25,432    | 2,744,048   | 282,445     | 1,806,713   | 218,668   | 1,009,690   | 154,664     | 491,755     | 65,024      | 10      | 106,020   | 238,152   | 1,068           | 5,728    |
|           | Total   |               | 18,978,777   | 13,640        | 18,965,136   | 67,049    | 6,075,103   | 651,329     | 4,798,535   | 564,135   | 3,341,361   | 561,256     | 1,492,618   | 993,674     | 26      | 135,159   | 270,175   | 2,519           | 12,197   |
|           | Total Plant Depreciation/Amortization Summary (Excluding General Plant) |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
|           | Production  |               | 228,409,836  | 222,851       | 228,186,985  | 808,963   | 64,577,395  | 8,008,616   | 57,539,581  | 6,686,504 | 44,750,234  | 7,805,295   | 18,799,988  | 17,846,852  | 315     | 578,152   | 635,391   | 16,901          | 132,779  |
|           | Transmission  |               | 6,144,059    | 5,808         | 6,138,251    | 16,746    | 1,443,537   | 125,590     | 1,615,016   | 156,039   | 1,270,630   | 223,648     | 785,996     | 489,579     | 2       | 3,419     | 3,757     | 100             | 4,191    |
|           | Distribution  |               | 35,798,433   | 10,257        | 35,788,176   | 124,192   | 13,228,038  | 1,186,825   | 8,395,688   | 1,048,168 | 4,991,985   | 762,906     | 2,457,150   | 328,535     | 50      | 982,030   | 2,247,975 | 8,404           | 20,749   |
|           | Total   |               | 270,352,328  | 238,915       | 270,113,413  | 949,901   | 79,248,969  | 9,321,031   | 67,550,286  | 7,890,691 | 51,012,849  | 8,791,849   | 22,043,134  | 18,664,963  | 367     | 1,563,601 | 2,887,123 | 25,405          | 163,719  |
|           | Total Plant Depreciation/Amortization Summary                           |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
|           | Production  |               | 239,826,705  | 233,991       | 239,592,713  | 849,352   | 67,803,020  | 8,408,327   | 60,413,391  | 7,020,575 | 46,989,100  | 8,193,552   | 19,741,930  | 18,739,744  | 331     | 607,041   | 667,140   | 17,740          | 132,401  |
|           | Transmission  |               | 6,594,369    | 6,232         | 6,588,136    | 17,969    | 1,548,967   | 134,763     | 1,733,028   | 167,435   | 1,363,431   | 239,983     | 844,917     | 525,336     | 2       | 3,668     | 4,031     | 107             | 4,191    |
|           | Distribution  |               | 42,910,012   | 12,332        | 42,897,699   | 149,630   | 15,922,086  | 1,429,221   | 10,202,401  | 1,266,816 | 6,001,625   | 912,471     | 2,968,905   | 392,559     | 61      | 1,086,050 | 2,496,127 | 10,071          | 31,477   |
|           | Total   |               | 289,331,105  | 252,556       | 289,028,549  | 1,016,950 | 85,324,073  | 9,972,361   | 72,348,820  | 8,454,827 | 54,354,210  | 9,353,105   | 23,535,752  | 19,658,639  | 393     | 1,696,759 | 3,157,298 | 27,924          | 175,177  |
|           | Taxes (P262)  |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
| 408       | Taxes Other Than Income Taxes   |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
|           | Production  | 110           | 35,917,995   | 25,740        | 35,892,255   | 125,515   | 11,381,068  | 1,206,861   | 9,161,555   | 1,067,778 | 6,400,511   | 1,073,599   | 2,964,760   | 1,871,816   | 47      | 213,681   | 417,097   | 4,646           | 29,122   |
|           | Transmission  | 110           | 474,217      | 340           | 473,877      | 1,657     | 150,262     | 15,934      | 120,694     | 14,098    | 84,504      | 14,174      | 39,143      | 24,713      | 1       | 2,821     | 5,507     | 61              | 491      |
|           | Distribution  | 110           | 7,670,821    | 5,497         | 7,665,324    | 26,806    | 2,430,596   | 257,742     | 1,952,315   | 228,040   | 1,366,924   | 229,283     | 633,168     | 399,754     | 10      | 45,635    | 89,077    | 549             | 1,393    |
| 409       | Federal Income Tax  |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
|           | Production  | 103           | 83,086,183   | 62,937        | 83,023,246   | 289,510   | 25,859,921  | 2,787,742   | 21,043,930  | 2,443,934 | 14,941,848  | 2,528,261   | 6,825,675   | 4,696,907   | 108     | 521,352   | 1,020,966 | 9,967           | 12,000   |
|           | Transmission  | 103           | 65,724,165   | 49,785        | 65,674,380   | 229,013   | 20,456,129  | 2,205,204   | 16,646,523  | 1,933,240 | 11,819,540  | 1,999,946   | 5,399,355   | 3,715,422   | 86      | 412,408   | 807,629   | 7,889           | 4,600    |
|           | Distribution  | 103           | 1,950,630    | 1,478         | 1,949,153    | 6,797     | 607,118     | 65,448      | 494,653     | 57,377    | 350,793     | 59,356      | 160,248     | 110,270     | 3       | 12,240    | 23,970    | 234             | 1,247    |
| 409       | State Income Tax  |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
|           | Production  | 103           | 15,411,388   | 11,674        | 15,399,714   | 53,700    | 4,796,673   | 517,089     | 3,903,374   | 453,317   | 2,771,515   | 468,959     | 871,214     | 20          | 96,704  | 189,378   | 1,849     | 9,849           |          |
|           | Transmission  | 103           | 31,201,522   | 23,635        | 31,177,887   | 108,720   | 9,711,228   | 1,046,886   | 7,902,677   | 917,775   | 5,611,142   | 949,443     | 2,563,259   | 1,763,839   | 41      | 195,784   | 383,409   | 3,741           | 19,478   |
|           | Distribution  | 103           | 24,681,528   | 18,696        | 24,662,832   | 84,002    | 7,681,932   | 828,125     | 6,251,302   | 725,993   | 4,438,616   | 751,044     | 2,027,630   | 1,395,260   | 37      | 154,872   | 303,291   | 2,961           | 15,771   |
| 410       | Deferred Income Tax   |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
|           | Production  | 100           | (26,940,324) | (29,509)      | (30,212,430) | (106,987) | (8,544,302) | (1,058,788) | (7,612,384) | (884,915) | (5,930,500) | (1,033,743) | (2,495,092) | (2,365,167) | (42)    | (16,523)  | (84,099)  | (2,223)         | (17,446) |
|           | Transmission  | 101           | 370,938      | 349           | 370,589      | 1,007     | 86,847      | 7,556       | 97,211      | 9,388     | 76,444      | 13,455      | 48,536      | 29,454      | 0       | 206       | 226       | 6               | 252      |
|           | Distribution  | 102           | 2,930,677    | 855           | 2,929,822    | 10,483    | 1,130,817   | 99,911      | 744,543     | 90,113    | 416,091     | 63,737      | 202,651     | 26,796      | 4       | 43,691    | 98,142    | 687             | 2,155    |
| 410       | Deferred State Income Tax   |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
|           | Production  | 100           | 802,776      | 783           | 801,992      | 2,840     | 226,810     | 28,106      | 202,072     | 23,490    | 157,426     | 27,441      | 66,233      | 62,784      | 1       | 2,031     | 2,232     | 59              | 460      |
|           | Transmission  | 101           | 23,826       | 22            | 23,803       | 65        | 5,578       | 485         | 6,244       | 603       | 4,910       | 864         | 3,118       | 1,892       | 0       | 13        | 15        | 0               | 16       |
|           | Distribution  | 102           | 188,240      | 55            | 188,185      | 673       | 72,633      | 6,417       | 47,873      | 5,788     | 26,726      | 4,094       | 13,016      | 1,721       | 0       | 2,806     | 6,304     | 44              | 138      |
| 411       | Income Tax Deferred in Prior Years                                      |               |              |               |              |           |             |             |             |           |             |             |             |             |         |           |           |                 |          |
|           | Production  | 100           | (28,961,004) | (28,260)      | (28,932,744) | (102,455) | (8,182,398) | (1,013,942) | (7,289,952) |           |             |             |             |             |         |           |           |                 |          |

**COST OF SERVICE STUDY**  
(By FERC Account - 1996)

| FERC ACCT | Description of Account                    | Total Utility     | FERC JURIS.    | PA PUC JURIS.     | BA             | RS                | RH               | GS/GM             | GMH              | GL                | GLH              | L                | HVPS             | AL             | SE             | SM               | SH             | TRAFFIC SIGNALS |
|-----------|---|-------------------|----------------|-------------------|----------------|-------------------|------------------|-------------------|------------------|-------------------|------------------|------------------|------------------|----------------|----------------|------------------|----------------|-----------------|
| 411       | Amortization of Investment Tax Credits    | (7,838,483)       |                |                   |                |                   |                  |                   |                  |                   |                  |                  |                  |                |                |                  |                |                 |
|           | Production                                | 100 (6,200,523)   | 6,050          | (6,194,472)       | (21,936)       | (1,751,843)       | (217,084)        | (11,560,772)      | (181,435)        | (1,215,934)       | (211,949)        | (511,570)        | (484,932)        | (9)            | (15,690)       | (17,243)         | (459)          | (3,018)         |
|           | Transmission                              | 101 (184,024)     | (173)          | (183,852)         | (500)          | (43,086)          | (3,749)          | (48,227)          | (4,657)          | (37,925)          | (6,675)          | (24,079)         | (14,613)         | (0)            | (102)          | (112)            | (3)            | (125)           |
|           | Distribution                              | 102 (1,453,935)   | (424)          | (1,453,510)       | (5,200)        | (561,008)         | (49,567)         | (369,374)         | (44,706)         | (206,427)         | (31,620)         | (100,537)        | (13,294)         | (2)            | (21,675)       | (48,689)         | (341)          | (1,069)         |
| 411       | Gain From Disposal Of Allowances          | (226,313)         |                |                   |                |                   |                  |                   |                  |                   |                  |                  |                  |                |                |                  |                |                 |
|           | Production                                | 100 (179,022)     | (175)          | (178,847)         | (633)          | (50,579)          | (6,268)          | (45,063)          | (5,738)          | (35,107)          | (6,119)          | (14,770)         | (14,001)         | (0)            | (453)          | (498)            | (13)           | (164)           |
|           | Transmission                              | 101 (5,313)       | (5)            | (5,308)           | (14)           | (1,244)           | (108)            | (1,392)           | (134)            | (1,095)           | (193)            | (695)            | (422)            | (0)            | (3)            | (3)              | (0)            | (1)             |
|           | Distribution                              | 102 (41,978)      | (12)           | (41,966)          | (150)          | (16,197)          | (1,431)          | (10,665)          | (1,291)          | (5,960)           | (913)            | (2,903)          | (384)            | (0)            | (626)          | (1,406)          | (10)           | (17)            |
|           | <b>Total All Taxes</b>                    | <b>87,748,974</b> | <b>52,813</b>  | <b>87,696,162</b> | <b>302,777</b> | <b>29,083,538</b> | <b>2,857,682</b> | <b>22,370,747</b> | <b>2,600,636</b> | <b>14,832,973</b> | <b>2,444,308</b> | <b>7,238,453</b> | <b>3,591,534</b> | <b>110</b>     | <b>737,950</b> | <b>1,562,460</b> | <b>13,396</b>  | <b>59,599</b>   |
|           | <b>Total All Taxes - Class Percentage</b> | <b>100%</b>       | <b>0.0602%</b> | <b>99.9398%</b>   | <b>0.3450%</b> | <b>33.1440%</b>   | <b>3.2567%</b>   | <b>25.4940%</b>   | <b>2.9637%</b>   | <b>16.9039%</b>   | <b>2.7856%</b>   | <b>8.2490%</b>   | <b>4.0930%</b>   | <b>0.0001%</b> | <b>0.8410%</b> | <b>1.7806%</b>   | <b>0.0153%</b> | <b>0.0649%</b>  |

| Total Taxes Summary |                   | Total Utility | FERC JURIS.       | PA PUC JURIS.  | BA                | RS               | RH                | GS/GM            | GMH               | GL               | GLH              | L                | HVPS       | AL             | SE               | SM            | SH            | TRAFFIC SIGNALS |
|---------------------|-------------------|---------------|-------------------|----------------|-------------------|------------------|-------------------|------------------|-------------------|------------------|------------------|------------------|------------|----------------|------------------|---------------|---------------|-----------------|
| Production          | 61,543,976        | 31,010        | 61,512,966        | 211,360        | 21,216,815        | 1,972,213        | 15,733,282        | 1,831,481        | 9,935,245         | 1,610,256        | 5,047,135        | 1,916,196        | 76         | 617,045        | 1,347,872        | 10,699        | 43,293        |                 |
| Transmission        | 2,503,261         | 1,756         | 2,501,505         | 9,230          | 832,227           | 92,636           | 628,858           | 76,467           | 432,229           | 72,094           | 173,981          | 124,454          | 4          | 19,295         | 38,079           | 373           | 1,576         |                 |
| Distribution        | 23,701,737        | 20,046        | 23,681,690        | 82,187         | 7,034,496         | 292,833          | 6,008,602         | 692,688          | 4,465,498         | 261,958          | 2,017,337        | 1,550,884        | 30         | 101,610        | 176,509          | 2,324         | 14,728        |                 |
| <b>Total</b>        | <b>87,748,974</b> | <b>52,813</b> | <b>87,696,162</b> | <b>302,777</b> | <b>29,083,538</b> | <b>2,857,682</b> | <b>22,370,747</b> | <b>2,600,636</b> | <b>14,832,973</b> | <b>2,444,308</b> | <b>7,238,453</b> | <b>3,591,534</b> | <b>110</b> | <b>737,950</b> | <b>1,562,460</b> | <b>13,396</b> | <b>59,599</b> |                 |

**Revenues**

|     |                               |                     |                 |                     |                  |                     |                    |                    |                    |                    |                    |                    |                    |             |                  |                  |                |                 |
|-----|-------------------------------|---------------------|-----------------|---------------------|------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------|------------------|------------------|----------------|-----------------|
| 447 | Off-System Sales              |                     |                 |                     |                  |                     |                    |                    |                    |                    |                    |                    |                    |             |                  |                  |                |                 |
|     | Production                    | 100 (33,441,134)    | (32,631)        | (33,408,503)        | (118,304)        | (9,448,176)         | (1,170,794)        | (8,417,673)        | (978,527)          | (6,557,869)        | (1,143,102)        | (2,759,040)        | (2,615,370)        | (46)        | (84,618)         | (92,946)         | (2,474)        | (19,555)        |
|     | Transmission                  | 101 (2,201,621)     | (2,074)         | (2,199,547)         | (5,980)          | (515,468)           | (44,844)           | (576,975)          | (55,719)           | (453,718)          | (79,861)           | (288,073)          | (174,819)          | (1)         | (1,221)          | (1,341)          | (36)           | (1,492)         |
|     | Distribution                  | 102 0               | 0               | 0                   | 0                | 0                   | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  | 0           | 0                | 0                | 0              | 0               |
|     | <b>Total</b>                  | <b>(35,642,755)</b> | <b>(34,705)</b> | <b>(35,608,050)</b> | <b>(124,284)</b> | <b>(9,963,636)</b>  | <b>(1,215,649)</b> | <b>(8,994,648)</b> | <b>(1,034,245)</b> | <b>(7,011,587)</b> | <b>(1,222,962)</b> | <b>(3,047,113)</b> | <b>(2,790,189)</b> | <b>(47)</b> | <b>(85,839)</b>  | <b>(94,337)</b>  | <b>(2,509)</b> | <b>(21,012)</b> |
|     | Other Revenues (FERC 450-454) |                     |                 |                     |                  |                     |                    |                    |                    |                    |                    |                    |                    |             |                  |                  |                |                 |
|     | Production                    | 100 (17,725,476)    | (17,296)        | (17,708,179)        | (62,707)         | (5,008,006)         | (620,580)          | (4,461,788)        | (518,668)          | (3,475,999)        | (605,901)          | (1,462,429)        | (1,386,277)        | (24)        | (44,852)         | (49,292)         | (1,311)        | (10,144)        |
|     | Transmission                  | 101 (6,246,853)     | (5,884)         | (6,240,969)         | (16,966)         | (1,462,561)         | (127,245)          | (1,637,104)        | (158,095)          | (1,287,375)        | (226,596)          | (817,375)          | (496,031)          | (2)         | (3,464)          | (3,806)          | (101)          | (4,748)         |
|     | Distribution                  | 102 (14,108,307)    | (8,118)         | (14,104,188)        | (50,463)         | (5,443,764)         | (480,974)          | (3,584,237)        | (433,803)          | (2,003,060)        | (306,630)          | (975,566)          | (128,998)          | (20)        | (210,327)        | (172,457)        | (3,308)        | (10,374)        |
|     | <b>Total</b>                  | <b>(38,080,636)</b> | <b>(27,299)</b> | <b>(38,053,337)</b> | <b>(130,137)</b> | <b>(11,914,331)</b> | <b>(1,228,799)</b> | <b>(9,683,129)</b> | <b>(1,110,567)</b> | <b>(6,766,442)</b> | <b>(1,139,327)</b> | <b>(3,255,370)</b> | <b>(2,011,306)</b> | <b>(46)</b> | <b>(258,643)</b> | <b>(255,555)</b> | <b>(4,721)</b> | <b>(24,964)</b> |

**Rate Base**

|   |                      |                    |                      |                    |                    |                   |                    |                   |                    |                   |                    |                    |                   |                   |                   |                  |                  |                |
|---|----------------------|--------------------|----------------------|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|-------------------|------------------|------------------|----------------|
| Electric Plant In Service (P207)              | 4,201,155,690        | 3,171,113          | 4,197,984,576        | 14,652,750         | #####              | 141,180,648       | #####              | 123,664,389       | 754,423,974        | 127,590,733       | 444,118,086        | 236,286,025        | 5,493             | 26,606,547        | 52,187,974        | 507,600          | 2,685,781        |                |
| Less: Accum. Depreciation (P219)              | (1,685,262,221)      | (1,350,037)        | (1,683,912,184)      | (5,894,355)        | (519,332,492)      | (56,881,232)      | (426,740,783)      | (49,281,615)      | (306,589,281)      | (52,327,854)      | (137,599,674)      | (103,061,737)      | (2,207)           | (11,724,031)      | (23,222,574)      | (188,924)        | (1,065,423)      |                |
| <b>Net Book Value</b>                         | <b>2,505,893,468</b> | <b>1,821,076</b>   | <b>2,504,072,392</b> | <b>8,758,395</b>   | <b>790,807,098</b> | <b>84,299,416</b> | <b>637,194,121</b> | <b>74,382,774</b> | <b>447,834,694</b> | <b>75,262,879</b> | <b>306,518,413</b> | <b>133,224,288</b> | <b>3,286</b>      | <b>14,882,517</b> | <b>28,965,399</b> | <b>318,754</b>   | <b>1,620,358</b> |                |
| Add: Land/Plant Held For Future Use (P214)    | 0                    | 0                  | 0                    | 0                  | 0                  | 0                 | 0                  | 0                 | 0                  | 0                 | 0                  | 0                  | 0                 | 0                 | 0                 | 0                | 0                |                |
| CWIP - Const. Work In Progress (P216)         | 0                    | 0                  | 0                    | 0                  | 0                  | 0                 | 0                  | 0                 | 0                  | 0                 | 0                  | 0                  | 0                 | 0                 | 0                 | 0                | 0                |                |
| Less: Accum. Deferred Income Taxes (P273-277) | (388,169,514)        | (303,463)          | (387,866,051)        | (1,358,015)        | (119,779,682)      | (13,142,937)      | (98,208,305)       | (11,426,601)      | (70,460,752)       | (11,963,498)      | (31,716,255)       | (22,862,077)       | (513)             | (2,283,882)       | (4,573,883)       | (44,831)         | (245,311)        |                |
| <b>Total Adjusted Net Plant</b>               | <b>2,117,723,954</b> | <b>1,517,613</b>   | <b>2,116,206,341</b> | <b>7,400,380</b>   | <b>671,027,416</b> | <b>71,156,479</b> | <b>538,985,816</b> | <b>62,956,173</b> | <b>377,373,942</b> | <b>63,299,382</b> | <b>174,802,157</b> | <b>110,362,211</b> | <b>2,773</b>      | <b>12,598,635</b> | <b>24,392,016</b> | <b>273,923</b>   | <b>1,375,037</b> |                |
| <b>Return Per Books</b>                       | <b>9.61%</b>         | <b>203,513,277</b> | <b>145,843</b>       | <b>203,367,429</b> | <b>711,177</b>     | <b>64,485,735</b> | <b>6,838,138</b>   | <b>51,796,537</b> | <b>6,050,088</b>   | <b>36,265,636</b> | <b>6,083,071</b>   | <b>16,796,487</b>  | <b>10,605,809</b> | <b>267</b>        | <b>1,210,729</b>  | <b>2,363,293</b> | <b>26,324</b>    | <b>132,141</b> |

**Adjustments To Rate Base For Ratemaking**

|  |                      |                    |                      |                    |                    |                   |                    |                   |                    |                   |                    |                    |                  |                   |                   |                  |                  |                |
|--|----------------------|--------------------|----------------------|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|------------------|-------------------|-------------------|------------------|------------------|----------------|
| Add: Regulatory Asset                    | 544,788,485          | 491,616            | 544,296,869          | 1,902,673          | 158,211,970        | 18,542,801        | 137,603,017        | 15,896,522        | 104,083,493        | 17,983,727        | 45,767,540         | 38,720,050         | 717              | 2,017,568         | 3,189,372         | 47,533           | 129,681          |                |
| Phillips                                 | 78,399,252           | 76,500             | 78,322,752           | 277,352            | 22,150,264         | 2,744,805         | 19,734,356         | 2,294,054         | 15,374,239         | 2,679,883         | 6,468,282          | 6,131,462          | 108              | 198,379           | 218,019           | 5,799            | 45,750           |                |
| Brunel Island                            | 28,758,563           | 28,067             | 28,730,501           | 101,739            | 8,125,202          | 1,006,855         | 7,238,994          | 841,509           | 5,639,608          | 983,040           | 2,372,707          | 2,249,155          | 40               | 72,770            | 79,974            | 2,127            | 16,781           |                |
| Wanwick                                  | 15,294,914           | 14,924             | 15,279,990           | 54,109             | 4,321,296          | 535,484           | 3,849,976          | 447,547           | 2,999,361          | 522,810           | 1,261,897          | 1,196,187          | 21               | 38,702            | 42,533            | 1,131            | 8,925            |                |
| Deferred Taxes                           | (485,985,645)        | (428,254)          | (485,557,391)        | (1,691,383)        | (142,267,993)      | (16,412,117)      | (122,866,660)      | (14,171,258)      | (92,134,021)       | (15,876,755)      | (41,013,787)       | (33,537,099)       | (632)            | (1,965,741)       | (3,278,561)       | (44,302)         | (97,081)         |                |
| Working Capital                          | 69,940,000           | 64,710             | 69,875,290           | 246,607            | 20,228,221         | 2,425,790         | 17,629,797         | 2,049,223         | 13,451,168         | 2,329,278         | 5,762,050          | 5,118,442          | 95               | 237,774           | 348,715           | 5,922            | 41,766           |                |
| <b>Total Adjustment To Rate Base</b>     | <b>251,195,569</b>   | <b>247,359</b>     | <b>250,948,010</b>   | <b>891,097</b>     | <b>70,768,959</b>  | <b>8,843,618</b>  | <b>63,189,481</b>  | <b>7,357,598</b>  | <b>49,413,847</b>  | <b>8,622,497</b>  | <b>20,618,690</b>  | <b>19,878,197</b>  | <b>149</b>       | <b>599,452</b>    | <b>680,251</b>    | <b>18,213</b>    | <b>145,771</b>   |                |
| <b>Rate Base Adjusted For Ratemaking</b> | <b>2,368,919,523</b> | <b>1,765,172</b>   | <b>2,367,154,351</b> | <b>8,291,477</b>   | <b>741,796,375</b> | <b>80,000,097</b> | <b>602,175,296</b> | <b>70,313,771</b> | <b>426,787,789</b> | <b>71,921,874</b> | <b>195,420,848</b> | <b>130,240,408</b> | <b>3,123</b>     | <b>13,198,087</b> | <b>25,192,269</b> | <b>292,136</b>   | <b>1,520,804</b> |                |
| <b>Earned Rate of Return</b>             | <b>8.88%</b>         | <b>6.82%</b>       | <b>8.88%</b>         | <b>6.17%</b>       | <b>11.16%</b>      | <b>1.82%</b>      | <b>10.27%</b>      | <b>6.02%</b>      | <b>9.43%</b>       | <b>5.64%</b>      | <b>6.11%</b>       | <b>-0.55%</b>      | <b>7.35%</b>     | <b>-1.54%</b>     | <b>13.72%</b>     | <b>18.51%</b>    | <b>38.64%</b>    |                |
| <b>Return Per Books</b>                  | <b>8.88%</b>         | <b>210,340,539</b> | <b>120,382</b>       | <b>210,220,157</b> | <b>511,442</b>     | <b>82,760,791</b> | <b>1,454,297</b>   | <b>61,858,058</b> | <b>4,233,920</b>   | <b>40,239,573</b> | <b>4,034,684</b>   | <b>11,933,358</b>  | <b>(720,355)</b> | <b>230</b>        | <b>(203,342)</b>  | <b>3,455,825</b> | <b>54,081</b>    | <b>587,596</b> |

**COST OF SERVICE STUDY  
(By FERC Account - 1996)**

| FERC<br>ACCT    | Description of Account                           | Total<br>UTILITY     | FERC<br>JURIS. | PA PUC<br>JURIS.     | BA               | RS                 | RH                | GS/GM              | GMH               | GL                 | GLH               | L                 | HVPS              | AL             | SE               | SM                | SH             | TRAFFIC<br>SIGNALS |         |
|-----------------|--|----------------------|----------------|----------------------|------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|-------------------|----------------|------------------|-------------------|----------------|--------------------|---------|
| <b>Expenses</b> |  |                      |                |                      |                  |                    |                   |                    |                   |                    |                   |                   |                   |                |                  |                   |                |                    |         |
|                 | Operation and Maintenance (P320)                 | 556,132,128          | 458,542        | 555,673,386          | 1,835,888        | 175,657,182        | 17,217,833        | 128,615,960        | 14,858,447        | 104,445,585        | 16,789,818        | 49,068,615        | 41,224,210        | 700            | 2,087,744        | 3,354,645         | 31,840         | 465,117            |         |
|                 | Depreciation & Amortization Expense (P336)       | 289,331,105          | 252,556        | 289,078,549          | 1,016,950        | 85,324,073         | 9,972,361         | 72,348,820         | 8,454,827         | 54,354,210         | 9,353,105         | 23,535,752        | 19,658,639        | 393            | 1,698,759        | 3,157,298         | 27,924         | 175,411            |         |
|                 | Taxes (P262)                                     | 87,748,974           | 52,813         | 87,696,162           | 302,777          | 29,083,538         | 2,857,682         | 22,370,747         | 2,600,636         | 14,832,973         | 2,444,308         | 7,238,453         | 3,591,534         | 110            | 737,950          | 1,562,460         | 13,396         | 59,596             |         |
|                 | Adjust Taxes to Earned ROR                       | 0                    | (25,781)       | 25,781               | (159,411)        | 11,982,406         | (4,006,325)       | 5,950,182          | (1,425,065)       | 1,662,629          | (1,653,466)       | (3,842,796)       | (8,712,405)       | (34)           | (975,325)        | 864,500           | 19,958         | 320,962            |         |
|                 | Total Expenses                                   | 933,212,208          | 738,130        | 932,474,077          | 2,996,203        | 302,047,199        | 26,041,501        | 229,285,710        | 24,488,846        | 175,295,396        | 26,933,785        | 76,000,025        | 55,761,977        | 1,169          | 3,549,129        | 8,938,903         | 113,118        | 1,021,115          |         |
|                 | Add: Gross Receipts Tax                          | 21                   | 36,153,777     | 38,251               | 36,115,526       | 149,468            | 16,726,650        | 1,150,648          | 6,510,824         | 969,720            | 4,372,942         | 1,163,060         | 3,078,024         | 38             | 138,044          | 546,968           | 7,397          | 72,012             |         |
|                 | Total Expenses / wGRT                            | 969,365,985          | 776,381        | 968,589,603          | 3,145,671        | 318,773,849        | 27,192,149        | 235,796,534        | 25,458,566        | 179,668,339        | 28,096,845        | 79,078,049        | 56,991,648        | 1,207          | 3,687,173        | 9,485,870         | 120,516        | 1,093,127          |         |
|                 | Less: Off-System Sales (P311)                    | (35,642,755)         | (34,705)       | (35,608,050)         | (124,284)        | (9,963,636)        | (1,215,640)       | (8,994,648)        | (1,034,245)       | (7,011,587)        | (1,222,962)       | (3,047,113)       | (2,790,189)       | (47)           | (85,839)         | (94,337)          | (2,509)        | (21,012)           |         |
|                 | Other Revenues (P300)                            | (38,080,636)         | (27,299)       | (38,053,337)         | (130,137)        | (11,914,331)       | (1,228,799)       | (9,683,129)        | (1,110,567)       | (6,766,442)        | (1,139,327)       | (3,255,370)       | (2,011,306)       | (46)           | (258,643)        | (525,555)         | (4,721)        | (24,964)           |         |
|                 | <b>Net Expenses</b>                              | <b>895,642,594</b>   | <b>714,377</b> | <b>894,928,217</b>   | <b>2,891,251</b> | <b>296,895,882</b> | <b>24,747,711</b> | <b>217,118,757</b> | <b>23,313,753</b> | <b>165,890,310</b> | <b>25,734,556</b> | <b>72,775,567</b> | <b>52,190,152</b> | <b>1,114</b>   | <b>3,342,690</b> | <b>8,865,977</b>  | <b>113,286</b> | <b>1,047,212</b>   |         |
|                 | <b>Cost of Service</b>                           | <b>1,105,983,132</b> | <b>834,758</b> | <b>1,105,148,374</b> | <b>3,402,693</b> | <b>379,656,673</b> | <b>26,202,008</b> | <b>278,976,815</b> | <b>27,547,673</b> | <b>206,129,883</b> | <b>29,789,240</b> | <b>84,708,924</b> | <b>51,469,797</b> | <b>1,343</b>   | <b>3,139,348</b> | <b>12,321,802</b> | <b>167,366</b> | <b>1,634,808</b>   |         |
|                 | <b>Class Percentages</b>                         | <b>100.000%</b>      | <b>0.075%</b>  | <b>99.925%</b>       | <b>0.308%</b>    | <b>34.328%</b>     | <b>2.369%</b>     | <b>25.224%</b>     | <b>2.491%</b>     | <b>18.638%</b>     | <b>2.693%</b>     | <b>7.659%</b>     | <b>4.654%</b>     | <b>0.000%</b>  | <b>0.284%</b>    | <b>1.114%</b>     | <b>0.015%</b>  | <b>0.148%</b>      |         |
|                 | mWh @ METER                                      | 12,406,325           | 12,808         | 12,393,517           | 33,848           | 2,977,268          | 309,038           | 2,621,147          | 328,256           | 2,884,887          | 455,220           | 1,509,474         | 1,201,824         | 13             | 28,618           | 31,448            | 837            | 11,639             |         |
|                 | <b>AVERAGE EMBEDDED COST / kWh</b>               | <b>0.08915</b>       | <b>0.06517</b> | <b>0.08917</b>       | <b>0.10053</b>   | <b>0.12752</b>     | <b>0.08479</b>    | <b>0.10643</b>     | <b>0.08392</b>    | <b>0.07145</b>     | <b>0.06544</b>    | <b>0.05612</b>    | <b>0.04283</b>    | <b>0.10334</b> | <b>0.10970</b>   | <b>0.39182</b>    | <b>0.19996</b> | <b>0.14166</b>     |         |
|                 | <b>Class Rates Of Return</b>                     |                      |                |                      |                  |                    |                   |                    |                   |                    |                   |                   |                   |                |                  |                   |                |                    |         |
|                 | Cost Of Service                                  | 1,105,983,132        | 834,758        | 1,105,148,374        | 3,402,693        | 379,656,673        | 26,202,008        | 278,976,815        | 27,547,673        | 206,129,883        | 29,789,240        | 84,708,924        | 51,469,797        | 1,343          | 3,139,348        | 12,321,802        | 167,366        | 1,634,808          |         |
|                 | Less Net Expenses                                | (895,642,594)        | (714,377)      | (894,928,217)        | (2,891,251)      | (296,895,882)      | (24,747,711)      | (217,118,757)      | (23,313,753)      | (165,890,310)      | (25,734,556)      | (72,775,567)      | (52,190,152)      | (1,114)        | (3,342,690)      | (8,865,977)       | (113,286)      | (1,047,212)        |         |
|                 | Total Adjusted Return For Rate-making            | 210,340,538          | 120,382        | 210,220,157          | 511,442          | 82,760,791         | 1,454,297         | 61,858,058         | 4,233,920         | 40,239,573         | 4,054,684         | 11,933,358        | (720,355)         | 230            | (203,342)        | 3,455,825         | 54,081         | 587,596            |         |
|                 | Rate Base Adjusted For Rate-making               | 2,368,919,523        | 1,765,172      | 2,367,154,351        | 8,291,477        | 741,796,375        | 80,000,097        | 602,175,296        | 70,313,771        | 426,787,789        | 71,921,874        | 195,420,848       | 130,240,408       | 3,123          | 13,198,087       | 25,192,269        | 292,136        | 1,520,801          |         |
|                 | Class Rate Of Return                             | 8.88%                | 6.82%          | 8.88%                | 6.17%            | 11.16%             | 1.82%             | 10.27%             | 6.02%             | 9.43%              | 5.64%             | 6.11%             | -0.55%            | 7.35%          | -1.54%           | 13.72%            | 18.51%         | 18.64%             |         |
|                 | Actual Revenues 1996                             | 1,086,506,920        | 857,283        | 1,085,649,637        | 3,349,885        | 374,878,804        | 25,788,406        | 274,794,286        | 27,070,932        | 201,573,273        | 29,104,629        | 82,353,498        | 49,601,005        | 1,323          | 3,093,842        | 12,258,677        | 165,787        | 1,615,796          |         |
|                 | Less Net Expenses                                | (895,642,594)        | (714,377)      | (894,928,217)        | (2,891,251)      | (296,895,882)      | (24,747,711)      | (217,118,757)      | (23,313,753)      | (165,890,310)      | (25,734,556)      | (72,775,567)      | (52,190,152)      | (1,114)        | (3,342,690)      | (8,865,977)       | (113,286)      | (1,047,212)        |         |
|                 | Actual Return                                    | 190,864,327          | 142,906        | 190,721,421          | 458,634          | 77,982,922         | 57,075,529        | 37,675,529         | 35,682,964        | 35,682,964         | 3,370,073         | 9,577,931         | (2,589,147)       | 209            | (248,848)        | 3,392,700         | 52,501         | 568,078            |         |
|                 | Rate Base Adjusted For Rate-making               | 2,368,919,523        | 1,765,172      | 2,367,154,351        | 8,291,477        | 741,796,375        | 80,000,097        | 602,175,296        | 70,313,771        | 426,787,789        | 71,921,874        | 195,420,848       | 130,240,408       | 3,123          | 13,198,087       | 25,192,269        | 292,136        | 1,520,801          |         |
|                 | Class Rate Of Return                             | 8.06%                | 8.10%          | 8.06%                | 5.53%            | 10.51%             | 1.30%             | 9.58%              | 5.34%             | 8.36%              | 4.69%             | 4.90%             | -1.99%            | 6.70%          | -1.89%           | 13.47%            | 17.92%         | 17.35%             |         |
|                 | Actual 1996 ECR Revenues                         | (\$40,749,185)       | (\$927)        | (\$40,748,258)       | (\$110,351)      | (\$9,736,523)      | (\$945,202)       | (\$8,618,774)      | (\$1,041,763)     | (\$9,568,348)      | (\$1,478,939)     | (\$5,007,357)     | (\$4,000,664)     | (\$42)         | (\$93,822)       | (\$104,868)       | (\$1,896)      | (\$38,710)         |         |
|                 | Actual 1996 STAS Revenues                        | (\$9,214,000)        |                | (\$9,214,000)        | (\$28,305)       | (\$3,146,176)      | (\$218,682)       | (\$2,318,335)      | (\$229,963)       | (\$1,727,151)      | (\$230,175)       | (\$714,617)       | (\$438,465)       | (\$11)         | (\$26,075)       | (\$101,135)       | (\$1,380)      | (\$13,531)         |         |
|                 | STAS @ Roll-in level                             | (\$7,770,992)        |                | (\$7,770,992)        | (\$23,872)       | (\$2,653,452)      | (\$184,435)       | (\$1,955,260)      | (\$193,949)       | (\$1,456,661)      | (\$210,995)       | (\$602,700)       | (\$369,797)       | (\$9)          | (\$21,992)       | (\$85,796)        | (\$1,164)      | (\$11,411)         |         |
|                 | STAS Roll-in Revenue Adjustment                  | \$1,443,008          |                | \$1,443,008          | \$4,433          | \$492,724          | \$34,248          | \$363,075          | \$36,015          | \$270,490          | \$39,186          | \$111,916         | \$68,668          | \$2            | \$4,084          | \$15,839          | \$216          | \$2,714            |         |
|                 | Total Actual 1996 kWh's Sales                    | 12,406,325,000       | 12,808,000     | 12,393,517,000       | 33,848,000       | 2,977,268,000      | 309,038,000       | 2,621,147,000      | 328,256,000       | 2,884,887,000      | 455,220,000       | 1,509,474,000     | 1,201,824,000     | 13,000         | 28,618,000       | 31,448,000        | 837,000        | 11,639,000         |         |
|                 | Class ECR Revenues - Mills/kWh                   | (0.003285)           | (0.000072)     | (0.003288)           | (0.003260)       | (0.003270)         | (0.003509)        | (0.003288)         | (0.003174)        | (0.003317)         | (0.003249)        | (0.003317)        | (0.003329)        | (0.003266)     | (0.003278)       | (0.003315)        | (0.003401)     | (0.003321)         |         |
|                 | Energy Costs In Base less Ft. Martin Cap * GRT % | (0.001831)           | (0.001831)     | (0.001831)           | (0.001831)       | (0.001831)         | (0.001831)        | (0.001831)         | (0.001831)        | (0.001831)         | (0.001831)        | (0.001831)        | (0.001831)        | (0.001831)     | (0.001831)       | (0.001831)        | (0.001831)     | (0.001831)         |         |
|                 | Difference - Mills/kWh                           | (0.001454)           | 0.001759       | (0.001457)           | (0.001429)       | (0.001439)         | (0.001228)        | (0.001457)         | (0.001343)        | (0.001486)         | (0.001418)        | (0.001486)        | (0.001498)        | (0.001435)     | (0.001447)       | (0.001504)        | (0.001629)     | (0.001491)         |         |
|                 | Total Actual 1996 kWh's Sales                    | 12,406,325,000       | 12,808,000     | 12,393,517,000       | 33,848,000       | 2,977,268,000      | 309,038,000       | 2,621,147,000      | 328,256,000       | 2,884,887,000      | 455,220,000       | 1,509,474,000     | 1,201,824,000     | 13,000         | 28,618,000       | 31,448,000        | 837,000        | 11,639,000         |         |
|                 | Difference in ECR                                | (18,033,204)         | 22,525         | (18,055,728)         | (48,375)         | (4,285,146)        | (379,354)         | (3,819,454)        | (440,726)         | (4,286,119)        | (645,431)         | (2,243,510)       | (1,800,124)       | (19)           | (41,422)         | (47,186)          | (1,363)        | (17,592)           |         |
|                 | Adjusted Revenues                                | \$1,105,983,132      | \$834,758      | \$1,105,148,374      | \$3,402,693      | \$379,656,673      | \$26,202,008      | \$278,976,815      | \$27,547,673      | \$206,129,883      | \$29,789,240      | \$84,708,924      | \$51,469,797      | \$1,343        | \$3,139,348      | \$12,321,802      | \$167,366      | \$1,634,808        |         |
|                 | Return @ Equal ROR                               | 8.88%                | 210,340,538    | 156,733              | 210,183,806      | 736,215            | 65,865,407        | 7,103,350          | 53,468,206        | 6,243,284          | 37,895,240        | 6,386,070         | 17,351,761        | 11,564,275     | 277              | 1,171,881         | 2,236,866      | 25,939             | 135,055 |
|                 | Cost of Service @ Equal ROR                      | 1,105,983,132        | 896,890        | 1,105,086,241        | 3,786,877        | 350,778,883        | 35,857,435        | 264,636,780        | 30,982,102        | 202,122,921        | 33,774,072        | 93,970,124        | 72,466,833        | 1,425          | 5,489,896        | 10,238,143        | 119,267        | 861,265            |         |
|                 | Adjusted Revenues less Cost of Service           | 0                    | (62,132)       | 62,132               | (384,184)        | 28,877,790         | (9,655,427)       | 14,340,035         | (3,434,429)       | 4,006,962          | (3,984,832)       | (9,261,199)       | (20,997,035)      | (82)           | (2,350,548)      | 2,083,459         | 48,100         | 773,524            |         |
|                 | Income Tax Effect                                | 41.49%               | 25,781         | (25,781)             | 159,411          | (11,982,406)       | 4,006,325         | (5,950,182)        | 1,425,065         | (1,662,629)        | 1,653,466         | 3,842,796         | 8,712,405         | 34             | 975,325          | (864,500)         | (19,958)       | (320,962)          |         |
|                 | Net Income Effect                                | 0                    | (36,351)       | 36,351               | (224,773)        | 16,895,384         | (5,649,053)       | 8,389,853          | (2,009,364)       | 2,344,333          | (2,331,386)       | (5,418,404)       | (12,284,630)      | (48)           | (1,375,224)      | 1,218,959         | 28,141         | 452,561            |         |
|                 | Adjusted Return                                  | 210,340,538          | 120,382        | 210,220,157          | 511,442          | 82,760,791         | 1,454,297         | 61,858,058         | 4,233,920         | 40,239,573         | 4,054,684         | 11,933,358        | (720,355)         | 230            | (203,342)        | 3,455,825         | 54,081         | 587,596            |         |
|                 | Earned Rate of Return                            | 8.88%                | 6.82%          | 8.88%                | 6.17%            | 11.16%             | 1.82%             | 10.27%             | 6.02%             | 9.43%              | 5.64%             | 6.11%             | -0.55%            | 7.35%          | -1.54%           | 13.72%            | 18.51%         | 18.64%             |         |

COST OF SERVICE STUDY

(Allocation Table - 1996)

| Alocator Offset Number -----> |   | 1                     | 2               | 3                     | 4                | 5                    | 6                 | 7                    | 8                 | 9                  | 10                | 11                 | 12                | 13          | 14              | 15              | 16            |                 |
|-------------------------------|---|-----------------------|-----------------|-----------------------|------------------|----------------------|-------------------|----------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------|-----------------|-----------------|---------------|-----------------|
| Alocator Number               | Description   | Total W/htly          | FERC JURIS.     | PA PUC JURIS.         | BA               | RS                   | RH                | GS/IGM               | GMH               | GL                 | GLH               | L                  | HVPS              | AL          | SE              | SM              | SH            | TRAFFIC SIGNALS |
| 1                             | * 12 CP (Coincident Peak - Monthly System Peak)<br>Class Percentages (Based on 1996 Data)       | 2,074,750<br>100.000% | 2,025<br>0.098% | 2,072,725<br>99.902%  | 5,838<br>0.281%  | 503,212<br>24.254%   | 43,780<br>2.110%  | 562,476<br>27.108%   | 54,395<br>2.622%  | 442,937<br>21.349% | 77,963<br>3.758%  | 207,512<br>10.007% | 170,665<br>8.226% | 1<br>0.000% | 1,192<br>0.057% | 1,310<br>0.063% | 35<br>0.002%  | 1,462<br>0.070% |
| 1.5                           | 1 CP (Coincident Peak - Annual System Peak)<br>Class Percentages (Based on 1996 Data)           | 2,443,000<br>100.000% | 2,362<br>0.104% | 2,460,438<br>99.896%  | 8,788<br>0.357%  | 633,047<br>25.702%   | 40,972<br>1.664%  | 709,284<br>28.798%   | 43,379<br>1.761%  | 528,403<br>21.454% | 84,041<br>3.412%  | 224,273<br>9.106%  | 186,789<br>7.584% | 0<br>0.000% | 0<br>0.000%     | 0<br>0.000%     | 0<br>0.000%   | 1,462<br>0.059% |
| 3                             | * NCP (Class Customer Peaks)<br>Class Percentages (Based on 1996 Data)                          | 3,012,618<br>100.000% | 2,787<br>0.093% | 3,009,831<br>99.907%  | 10,526<br>0.349% | 830,176<br>27.557%   | 109,177<br>3.624% | 804,703<br>26.711%   | 102,770<br>3.411% | 573,790<br>19.046% | 97,314<br>3.230%  | 233,523<br>7.751%  | 231,169<br>7.673% | 4<br>0.000% | 7,150<br>0.237% | 7,858<br>0.261% | 209<br>0.007% | 1,462<br>0.049% |
| 4                             | * MDD (Non-Coincidental - Individual Customer Peak)<br>Class Percentages (Based on 1996 Data)   | 5,107,839<br>100.000% | 2,787<br>0.055% | 5,105,052<br>99.945%  | 18,886<br>0.370% | 2,323,187<br>45.483% | 129,235<br>2.530% | 1,037,356<br>20.309% | 143,666<br>2.813% | 759,460<br>14.869% | 119,729<br>2.344% | 286,444<br>5.608%  | 270,406<br>5.294% | 4<br>0.000% | 7,150<br>0.140% | 7,858<br>0.154% | 209<br>0.004% | 1,462<br>0.029% |
| 6                             | * Class Max @ Gen. Level - Subtransmission (D20C)<br>Class Percentages (Based on 1996 Data)     | 2,706,896<br>100.000% | 2,787<br>0.103% | 2,704,109<br>99.897%  | 10,526<br>0.389% | 830,176<br>30.669%   | 109,177<br>4.033% | 804,703<br>29.728%   | 102,771<br>3.797% | 558,465<br>20.631% | 97,314<br>3.595%  | 174,294<br>6.439%  | 0<br>0.000%       | 4<br>0.000% | 7,150<br>0.264% | 7,858<br>0.290% | 209<br>0.008% | 1,462<br>0.054% |
| 7                             | * Class Max @ Gen. Level - Network (D21C)<br>Class Percentages (Based on 1996 Data)             | 205,400<br>100.000%   | 0<br>0.000%     | 205,400<br>100.000%   | 0<br>0.000%      | 0<br>0.000%          | 0<br>0.000%       | 41,876<br>20.388%    | 7,866<br>3.830%   | 112,971<br>55.000% | 18,876<br>9.190%  | 23,811<br>11.593%  | 0<br>0.000%       | 0<br>0.000% | 0<br>0.000%     | 0<br>0.000%     | 0<br>0.000%   | 0<br>0.000%     |
| 8                             | * Class Max @ Gen. Level - Subtran/Network Total (D3)<br>Class Percentages (Based on 1996 Data) | 1,764,001<br>100.000% | 0<br>0.000%     | 1,764,001<br>100.000% | 10,526<br>0.597% | 830,176<br>47.062%   | 109,177<br>6.189% | 670,838<br>38.029%   | 75,517<br>4.281%  | 46,415<br>2.631%   | 4,669<br>0.265%   | 0<br>0.000%        | 0<br>0.000%       | 4<br>0.000% | 7,150<br>0.405% | 7,858<br>0.445% | 209<br>0.012% | 1,462<br>0.083% |
| 9                             | * Class Max @ Gen. Level - Secondary Less Series (D3)<br>Class Percentages (Based on 1996 Data) | 1,764,001<br>100.000% | 0<br>0.000%     | 1,764,001<br>100.000% | 10,526<br>0.597% | 830,176<br>47.062%   | 109,177<br>6.189% | 670,838<br>38.029%   | 75,517<br>4.281%  | 46,415<br>2.631%   | 4,669<br>0.265%   | 0<br>0.000%        | 0<br>0.000%       | 4<br>0.000% | 7,150<br>0.405% | 7,858<br>0.445% | 209<br>0.012% | 1,462<br>0.083% |
|                               | # of Hours  | 8,760                 |                 |                       |                  |                      |                   |                      |                   |                    |                   |                    |                   |             |                 |                 |               |                 |
|                               | mWhs of Customer Meter Level (Based on 1996 Data)   | 12,406,325            | 12,808          | 12,393,517            | 33,848           | 2,977,268            | 309,038           | 2,621,147            | 328,256           | 2,884,887          | 455,220           | 1,509,474          | 1,201,824         | 13          | 28,618          | 31,448          | 837           | 11,639          |
|                               | Total Loss  | 1,034                 | 1,009           | 1,009                 | 1,105            | 1,105                | 1,105             | 1,096                | 1,090             | 1,052              | 1,051             | 1,036              | 1,009             | 1,077       | 1,105           | 1,105           | 1,105         | 1,105           |
|                               | Transmission Loss   | 1,009                 | 1,009           | 1,009                 | 1,009            | 1,009                | 1,009             | 1,009                | 1,009             | 1,009              | 1,009             | 1,009              | 1,009             | 1,009       | 1,009           | 1,009           | 1,009         | 1,009           |
|                               | Distribution Loss   | 1,025                 | 1,025           | 1,025                 | 1,095            | 1,095                | 1,095             | 1,095                | 1,086             | 1,043              | 1,041             | 1,026              | 1,000             | 1,067       | 1,095           | 1,095           | 1,095         | 1,095           |
| 17                            | * MWHs at Generation Level (Based on 1996 Data)   | 13,283,584            | 13,242          | 13,270,342            | 37,403           | 3,289,990            | 341,498           | 2,872,967            | 357,783           | 3,036,214          | 478,317           | 1,563,353          | 1,212,641         | 14          | 31,624          | 34,731          | 925           | 12,862          |
|                               | MWHs of Input Factor  | 100.000%              | 0.100%          | 99.900%               | 0.282%           | 24.767%              | 2.571%            | 21.628%              | 2.693%            | 22.857%            | 3.601%            | 11.769%            | 9.129%            | 0.000%      | 0.238%          | 0.262%          | 0.007%        | 0.097%          |
| 12.2                          | Total Loss  | 877,259               | 434             | 876,825               | 3,555            | 312,722              | 32,460            | 251,820              | 29,527            | 151,327            | 23,097            | 53,879             | 10,817            | 1           | 3,006           | 3,303           | 88            | 1,223           |
|                               | Total Loss Factor   | 100.000%              | 0.049%          | 99.951%               | 0.405%           | 35.648%              | 3.700%            | 28.705%              | 3.366%            | 17.250%            | 2.633%            | 6.142%             | 1.233%            | 0.000%      | 0.343%          | 0.377%          | 0.010%        | 0.119%          |
| 12.4                          | Transmission Loss   | 118,486               | 118             | 118,368               | 334              | 29,346               | 3,046             | 25,626               | 3,191             | 27,082             | 4,266             | 13,945             | 10,816            | 0           | 282             | 310             | 8             | 115             |
|                               | Transmission Loss Factor  | 100.000%              | 0.100%          | 99.900%               | 0.282%           | 24.767%              | 2.571%            | 21.628%              | 2.693%            | 22.857%            | 3.601%            | 11.769%            | 9.129%            | 0.000%      | 0.238%          | 0.262%          | 0.007%        | 0.097%          |
| 12.6                          | Distribution Loss   | 758,773               | 316             | 758,457               | 3,221            | 283,376              | 29,414            | 226,194              | 26,336            | 124,245            | 18,831            | 39,934             | 1                 | 1           | 2,724           | 2,993           | 80            | 1,108           |
|                               | Distribution Loss Factor  | 100.000%              | 0.042%          | 99.958%               | 0.425%           | 37.347%              | 3.877%            | 29.810%              | 3.471%            | 16.374%            | 2.482%            | 5.263%             | 0.000%            | 0.000%      | 0.359%          | 0.394%          | 0.011%        | 0.146%          |
| 13                            | * Average Customers (Based on 1996 Data)  | 579,740               | 1               | 579,739               | 2,793            | 496,280              | 22,729            | 51,379               | 3,357             | 639                | 106               | 26                 | 3                 | 2           | 1               | 717             | 14            | 1,693           |
|                               | Customer Factor - P311/P304   | 100.000%              | 0.000%          | 100.000%              | 0.482%           | 85.604%              | 3.921%            | 8.862%               | 0.579%            | 0.110%             | 0.018%            | 0.004%             | 0.001%            | 0.000%      | 0.000%          | 0.124%          | 0.002%        | 0.292%          |
| 14                            | * Total Number Of Customers (C10)   | 580,730               | 1               | 580,729               | 2,834            | 496,925              | 22,815            | 51,592               | 3,372             | 639                | 107               | 26                 | 3                 | 2           | 1               | 719             | 14            | 1,690           |
|                               | Class Percentages (Based on 1996 Data)  | 100.000%              | 0.000%          | 100.000%              | 0.488%           | 85.569%              | 3.929%            | 8.884%               | 0.581%            | 0.110%             | 0.018%            | 0.004%             | 0.001%            | 0.000%      | 0.000%          | 0.127%          | 0.002%        | 0.291%          |
| 15                            | * Total Number Of Network Customers (C21)   | 1,190                 | 0               | 1,190                 | 0                | 0                    | 0                 | 928                  | 173               | 78                 | 8                 | 3                  | 0                 | 0           | 0               | 0               | 0             | 0               |
|                               | Class Percentages (Based on 1996 Data)  | 100.000%              | 0.000%          | 100.000%              | 0.000%           | 0.000%               | 0.000%            | 77.983%              | 14.538%           | 6.555%             | 0.672%            | 0.252%             | 0.000%            | 0.000%      | 0.000%          | 0.000%          | 0.000%        | 0.000%          |
| 16                            | * Total Number Of Subtrans/Network Customers (C30)  | 678,510               | 1               | 678,509               | 2,834            | 496,925              | 22,815            | 51,590               | 3,372             | 633                | 107               | 19                 | 0                 | 2           | 39,051          | 58,658          | 813           | 1,690           |
|                               | Class Percentages (Based on 1996 Data)  | 100.000%              | 0.000%          | 100.000%              | 0.418%           | 73.238%              | 3.363%            | 7.603%               | 0.497%            | 0.093%             | 0.016%            | 0.000%             | 0.000%            | 5.753%      | 8.645%          | 1.211%          | 0.140%        |                 |
| 17                            | * Total Number Of Secondary less Series Customers (C30)   | 637,240               | 1               | 637,239               | 2,834            | 496,925              | 22,815            | 50,263               | 3,130             | 99                 | 10                | 0                  | 0                 | 2           | 0               | 58,658          | 813           | 1,690           |
|                               | Class Percentages (Based on 1996 Data)  | 100.000%              | 0.000%          | 100.000%              | 0.445%           | 77.981%              | 3.580%            | 7.888%               | 0.491%            | 0.016%             | 0.002%            | 0.000%             | 0.000%            | 0.000%      | 9.205%          | 11.28%          | 0.265%        |                 |
| 18                            | * Total Number Of Secondary less Sl. Ltg. Customers (C30)                                       | 576,077               | 1               | 576,076               | 2,834            | 496,925              | 22,815            | 50,263               | 3,130             | 99                 | 10                | 0                  | 0                 | 0           | 0               | 0               | 0             | 0               |
|                               | Class Percentages (Based on 1996 Data)  | 100.000%              | 0.000%          | 100.000%              | 0.492%           | 86.260%              | 3.960%            | 8.725%               | 0.543%            | 0.017%             | 0.002%            | 0.000%             | 0.000%            | 0.000%      | 0.000%          | 0.000%          | 0.000%        |                 |
| 19                            | * Direct - Street Lighting Account 373 (CXP1)   | \$21,786,039          | 0.000%          | \$21,786,039          | 0.000%           | 0.000%               | 0.000%            | 0.000%               | 0.000%            | 0.000%             | 0.000%            | 0.000%             | 0.000%            | 0.000%      | 6,532,484       | 15,253,555      | 0.000%        | 0.000%          |
|                               | Class Percentages (Based on 1996 Data)  | 100.000%              | 0.000%          | 100.000%              | 0.000%           | 0.000%               | 0.000%            | 0.000%               | 0.000%            | 0.000%             | 0.000%            | 0.000%             | 0.000%            | 0.000%      | 29.985%         | 70.015%         | 0.000%        | 0.000%          |
| 20                            | * Direct - Install On Cust. Premises Account 371 (CXP2)   | \$37,793              | 0.000%          | \$37,793              | 0.000%           | 0.000%               | 0.000%            | 0.000%               | 0.000%            | 4,564              | 13,825            | 2,218              | 17,186            | 0.000%      | 0.000%          | 0.000%          | 0.000%        | 0.000%          |
|                               | Class Percentages (Based on 1996 Data)  | 100.000%              | 0.000%          | 100.000%              | 0.000%           | 0.000%               | 0.000%            | 0.000%               | 0.000%            | 12.076%            | 36.581%           | 0.000%             | 5.869%            | 45.474%     | 0.000%          | 0.000%          | 0.000%        | 0.000%          |

COST OF SERVICE STUDY

(Allocation Table - 1996)

| Allocator Offset Number |   | 1                         | 2                   | 3                        | 4                    | 5                      | 6                     | 7                      | 8                      | 9                      | 10                    | 11                    | 12                    | 13                   | 14                   | 15                   | 16                  |                     |
|-------------------------|---|---------------------------|---------------------|--------------------------|----------------------|------------------------|-----------------------|------------------------|------------------------|------------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|----------------------|---------------------|---------------------|
| Allocator Number        | Description   | Total Utility             | FERC JURIS.         | PA PUC JURIS.            | RS                   | RS                     | RH                    | GS/GM                  | GMH                    | GL                     | GLH                   | L                     | HVFS                  | AL                   | SE                   | SM                   | SH                  | IRAFK. SIGNALS      |
| 21                      | * Gross Receipts Allocator<br>Class Percentages (Based on 1996 Data)                            | \$810,280,857<br>100.000% | 857,283<br>0.106%   | \$809,423,574<br>99.894% | 3,349,885<br>0.413%  | 374,878,804<br>46.265% | 25,788,406<br>3.183%  | 145,921,021<br>18.009% | 21,733,422<br>2.682%   | 98,006,672<br>12.095%  | 26,066,583<br>3.217%  | 68,984,883<br>8.514%  | 27,559,461<br>3.401%  | 841<br>0.000%        | 3,093,842<br>0.382%  | 12,258,677<br>1.513% | 165,787<br>0.020%   | 1,615,290<br>0.199% |
| 32                      | * D10 Changes To NCP Percent<br>D10 Allocator<br>D10 Allocator from NCP                         | 3,008,656<br>100.000%     | 2,926<br>0.097%     | 3,005,731<br>99.903%     | 4,405<br>0.365%      | 4,405<br>28.808%       | 0.564<br>3.649%       | -3,777<br>25.736%      | -13,251<br>2.963%      | 0.114<br>19.093%       | 4,783<br>3.389%       | 0.924<br>7.690%       | -0.924<br>0.000%      | 7.479<br>0.000%      | 7.479<br>0.255%      | 7.479<br>0.281%      | 7.479<br>0.007%     | 7.479<br>0.051%     |
| 39                      | * Customer maintenance and service cost<br>Customer Service Costs<br>Customer Service Factor    | 706,599<br>100.000%       | 1<br>0.000%         | 706,598<br>100.000%      | 1,000<br>0.395%      | 1,000<br>496,280       | 1,000<br>22,729       | 1,000<br>165,820       | 3,227<br>11,281        | 3,360<br>6,187         | 9,682<br>970          | 9,154<br>463          | 17,802<br>76          | 25,298<br>0          | 0.000<br>0.000%      | 0.000<br>0.000%      | 0.000<br>0.000%     | 0.000<br>0.000%     |
| 40                      | * Weighted Customer Meters Investment (CWI)<br>Customer Meter Investment Factor                 | 1,167,689<br>100.000%     | 100<br>0.009%       | 1,167,589<br>99.991%     | 2,834<br>0.243%      | 496,925<br>42.556%     | 22,815<br>1.954%      | 536,820<br>45.973%     | 37,345<br>3.198%       | 51,840<br>4.440%       | 9,290<br>0.796%       | 7,800<br>0.668%       | 1,920<br>0.164%       | 0<br>0.000%          | 0<br>0.000%          | 0<br>0.000%          | 0<br>0.000%         | 0<br>0.000%         |
| 60                      | * Transmission Plant Account Direct Assignment (P350)<br>Class Percentages (Based On 1992 COSS) | 114,448<br>100.000%       | 0<br>0.000%         | 114,448<br>100.000%      | 0<br>0.000%          | 0<br>0.000%            | 0<br>0.000%           | 15,247<br>13.322%      | 0<br>0.000%            | 0<br>0.000%            | 0<br>0.000%           | 99,201<br>86.678%     | 0<br>0.000%           | 0<br>0.000%          | 0<br>0.000%          | 0<br>0.000%          | 0<br>0.000%         | 0<br>0.000%         |
| 61                      | * Transmission Plant Account Direct Assignment (P352)<br>Class Percentages (Based On 1992 COSS) | 2,396,001<br>100.000%     | 0<br>0.000%         | 2,396,001<br>100.000%    | 0<br>0.000%          | 0<br>0.000%            | 0<br>0.000%           | 0<br>0.000%            | 0<br>0.000%            | 0<br>0.000%            | 0<br>0.000%           | 2,396,001<br>100.000% | 0<br>0.000%           | 0<br>0.000%          | 0<br>0.000%          | 0<br>0.000%          | 0<br>0.000%         | 0<br>0.000%         |
| 62                      | * Transmission Plant Account Direct Assignment (P354)<br>Class Percentages (Based On 1992 COSS) | 6,595,063<br>100.000%     | 0<br>0.000%         | 6,595,063<br>100.000%    | 0<br>0.000%          | 0<br>0.000%            | 0<br>0.000%           | 97,389<br>1.477%       | 0<br>0.000%            | 0<br>0.000%            | 0<br>0.000%           | 6,497,674<br>98.523%  | 0<br>0.000%           | 0<br>0.000%          | 0<br>0.000%          | 0<br>0.000%          | 0<br>0.000%         | 0<br>0.000%         |
| 63                      | * Distribution Plant Account Direct Assignment (P362)<br>Class Percentages (Based On 1992 COSS) | 43,268,966<br>100.000%    | 0<br>0.000%         | 43,268,966<br>100.000%   | 0<br>0.000%          | 180,901<br>0.418%      | 0<br>0.000%           | 2,744,634<br>6.343%    | 17,328<br>0.040%       | 10,916,019<br>25.228%  | 169,947<br>0.393%     | 29,240,137<br>67.578% | 0<br>0.000%           | 0<br>0.000%          | 0<br>0.000%          | 0<br>0.000%          | 0<br>0.000%         | 0<br>0.000%         |
| 64                      | * Distribution Plant Account Direct Assignment (P368)<br>Class Percentages (Based On 1992 COSS) | 13,892,831<br>100.000%    | 0<br>0.000%         | 13,892,831<br>100.000%   | 0<br>0.000%          | 1,881,921<br>13.546%   | 114,455<br>0.824%     | 3,526,687<br>25.385%   | 872,144<br>6.278%      | 6,197,677<br>44.611%   | 1,299,947<br>9.357%   | 0<br>0.000%           | 0<br>0.000%           | 0<br>0.000%          | 0<br>0.000%          | 0<br>0.000%          | 0<br>0.000%         | 0<br>0.000%         |
| CALCULATED ALLOCATORS   |   |                           |                     |                          |                      |                        |                       |                        |                        |                        |                       |                       |                       |                      |                      |                      |                     |                     |
| 100                     | * Sum Production Plant<br>Production Plant Factor   | 2,366,398,721<br>100.000% | 2,309,085<br>0.098% | 2,364,089,636<br>99.902% | 8,371,583<br>0.354%  | 668,582,339<br>28.253% | 82,849,039<br>3.501%  | 595,660,714<br>25.172% | 69,243,606<br>2.926%   | 464,055,186<br>19.610% | 80,889,437<br>3.418%  | 195,238,257<br>8.250% | 185,071,708<br>7.821% | 3,259<br>0.000%      | 5,987,865<br>0.253%  | 6,580,681<br>0.278%  | 175,045<br>0.007%   | 1,980,515<br>0.085% |
| 101                     | * Sum Transmission Plant<br>Transmission Plant Factor   | 312,186,756<br>100.000%   | 294,078<br>0.094%   | 311,892,678<br>99.906%   | 847,900<br>0.272%    | 73,091,533<br>23.413%  | 6,359,087<br>2.037%   | 81,814,322<br>26.207%  | 7,900,816<br>2.531%    | 64,336,635<br>20.608%  | 11,324,125<br>3.627%  | 40,848,332<br>13.085% | 24,789,158<br>7.940%  | 90<br>0.000%         | 173,099<br>0.055%    | 190,218<br>0.061%    | 5,061<br>0.002%     | 212,101<br>0.068%   |
| 102                     | * Sum Distribution Plant<br>Distribution Plant Factor   | 1,233,225,730<br>100.000% | 359,992<br>0.029%   | 1,232,865,738<br>99.971% | 4,411,052<br>0.358%  | 475,846,599<br>38.586% | 42,042,559<br>3.409%  | 313,302,916<br>25.405% | 37,919,335<br>3.075%   | 175,090,817<br>14.198% | 26,820,438<br>2.175%  | 85,275,511<br>6.915%  | 11,275,923<br>0.914%  | 1,748<br>0.000%      | 18,384,996<br>1.491% | 41,298,065<br>3.349% | 289,165<br>0.023%   | 906,616<br>0.074%   |
| 103                     | * Sum Prod. Trans. Dist Plant<br>Prod. Trans. Dist Plant Factor                                 | 3,911,811,207<br>100.000% | 2,963,155<br>0.076% | 3,908,848,052<br>99.924% | 13,630,535<br>0.348% | 131,250,685<br>3.124%  | 990,777,951<br>3.355% | 115,063,757<br>2.941%  | 703,482,638<br>17.984% | 119,034,000<br>3.043%  | 321,362,100<br>8.215% | 221,136,789<br>5.653% | 5,098<br>0.000%       | 24,543,960<br>0.627% | 48,068,964<br>1.229% | 469,271<br>0.012%    | 2,499,834<br>0.064% |                     |
| 104                     | * Sum Production O&M Expense<br>Production O&M Factor   | 341,691,907<br>100.000%   | 337,305<br>0.099%   | 341,354,602<br>99.901%   | 1,075,659<br>0.315%  | 90,110,353<br>26.372%  | 10,247,344<br>2.999%  | 79,474,296<br>23.259%  | 9,569,180<br>2.801%    | 72,993,845<br>21.362%  | 12,016,559<br>3.517%  | 34,679,968<br>10.149% | 29,135,351<br>8.527%  | 411<br>0.000%        | 837,007<br>0.243%    | 919,814<br>0.266%    | 24,476<br>0.007%    | 170,342<br>0.050%   |
| 105                     | * Total Power Expense<br>Total Power Expense Factor   | 32,651,933<br>100.000%    | 32,542<br>0.100%    | 32,619,391<br>99.906%    | 92,215<br>0.282%     | 8,100,353<br>24.808%   | 842,984<br>2.609%     | 7,075,504<br>21.699%   | 880,345<br>2.725%      | 7,450,792<br>22.815%   | 1,175,036<br>3.599%   | 3,829,361<br>11.728%  | 2,975,747<br>9.114%   | 35<br>0.000%         | 77,791<br>0.238%     | 85,483<br>0.260%     | 2,275<br>0.007%     | 31,469<br>0.095%    |
| 106                     | * Sum Transmission O&M Expense<br>Transmission O&M Factor                                       | 11,112,079<br>100.000%    | 10,702<br>0.096%    | 11,101,377<br>99.904%    | 30,857<br>0.278%     | 2,659,951<br>23.937%   | 231,420<br>2.083%     | 2,974,410<br>26.767%   | 287,527<br>2.588%      | 2,341,342<br>21.070%   | 412,108<br>3.709%     | 1,240,499<br>11.164%  | 902,128<br>8.118%     | 3<br>0.000%          | 6,299<br>0.057%      | 6,922<br>0.062%      | 184<br>0.002%       | 7,726<br>0.070%     |
| 107                     | * Sum Distribution O&M Expense<br>Distribution O&M Factor                                       | 38,601,510<br>100.000%    | 9,031<br>0.023%     | 38,592,479<br>99.977%    | 146,425<br>0.379%    | 15,496,637<br>40.145%  | 1,419,441<br>3.677%   | 9,685,560<br>25.091%   | 1,041,431<br>2.698%    | 4,708,660<br>12.199%   | 504,223<br>1.306%     | 1,821,942<br>4.720%   | 1,934,363<br>5.011%   | 63<br>0.000%         | 575,506<br>1.491%    | 1,212,155<br>3.140%  | 11,541<br>0.030%    | 34,133<br>0.089%    |
| 110                     | * Total Net Plant<br>Total Revenue Factor   | 2,117,723,954<br>100.000% | 1,517,613<br>0.072% | 2,116,206,341<br>99.928% | 7,400,380<br>0.349%  | 671,027,416<br>31.686% | 71,156,479<br>3.360%  | 538,985,816<br>25.451% | 62,956,173<br>2.973%   | 377,373,942<br>17.820% | 63,299,382<br>2.989%  | 174,802,157<br>8.254% | 110,362,211<br>5.211% | 2,773<br>0.000%      | 12,598,635<br>0.595% | 24,592,016<br>1.161% | 273,923<br>0.013%   | 1,575,037<br>0.074% |
| 112                     | Steam Production Plant Accts. 311-316 Ratio (P3116)<br>Sum of Account 311-316 Factor            | 832,093,588<br>100.000%   | 813,031<br>0.098%   | 831,280,557<br>99.902%   | 2,906,363<br>0.349%  | 233,290,518<br>28.037% | 28,651,161<br>3.443%  | 207,619,281<br>24.951% | 24,227,731<br>2.912%   | 164,853,661<br>19.812% | 28,537,429<br>3.430%  | 70,470,511<br>8.469%  | 65,752,785<br>7.902%  | 1,129<br>0.000%      | 2,097,766<br>0.252%  | 2,305,436<br>0.277%  | 61,327<br>0.007%    | 505,459<br>0.061%   |
| 113                     | Nuclear Production Plant Accts. 321-325 Ratio (P321)<br>Sum of Account 321-325 Factor           | 1,482,761,041<br>100.000% | 1,445,883<br>0.098% | 1,481,315,158<br>99.902% | 5,278,603<br>0.356%  | 420,522,824<br>28.361% | 52,338,272<br>3.530%  | 374,857,369<br>25.281% | 43,493,872<br>2.930%   | 289,285,655<br>19.510% | 50,600,899<br>3.413%  | 120,723,237<br>8.142% | 115,365,117<br>7.780% | 2,057<br>0.000%      | 3,758,788<br>0.253%  | 4,130,932<br>0.277%  | 109,880<br>0.007%   | 847,653<br>0.057%   |
| 114                     | Other Production Plant Accts. 341-346 Ratio (P3416)<br>Sum of Account 341-346 Factor            | 42,505,725<br>100.000%    | 41,382<br>0.097%    | 42,464,343<br>99.903%    | 153,603<br>0.361%    | 12,165,190<br>28.620%  | 1,529,776<br>3.599%   | 10,857,945<br>25.545%  | 1,254,180<br>2.951%    | 8,190,171<br>19.268%   | 1,444,183<br>3.399%   | 3,349,460<br>7.880%   | 3,265,763<br>7.683%   | 60<br>0.000%         | 108,225<br>0.255%    | 118,941<br>0.280%    | 3,164<br>0.007%     | 23,083<br>0.054%    |

COST OF SERVICE STUDY

(Allocation Table - 1996)

| Allocator Offset Number   | 1                         | 2                   | 3                        | 4                   | 5                      | 6                    | 7                      | 8                    | 9                      | 10                   | 11                    | 12                   | 13              | 14                  | 15                   | 16                |                   |
|---|---------------------------|---------------------|--------------------------|---------------------|------------------------|----------------------|------------------------|----------------------|------------------------|----------------------|-----------------------|----------------------|-----------------|---------------------|----------------------|-------------------|-------------------|
| Allocator Number  | Total Utility             | FERC JURIS.         | PA PUC JURIS.            | BA                  | RS                     | RH                   | GS/GM                  | GMH                  | GL                     | GLH                  | L                     | HVPS                 | AL              | SE                  | SM                   | SH                | TRAFFIC SIGNALS   |
| Description   |                           |                     |                          |                     |                        |                      |                        |                      |                        |                      |                       |                      |                 |                     |                      |                   |                   |
| 116 Transmission Plant Accounts 352-353 Ratio (P3523)<br>Sum of Account 352-353 Factor        | 132,931,406<br>100.000%   | 126,231<br>0.095%   | 132,805,175<br>99.905%   | 363,955<br>0.274%   | 31,374,000<br>23.602%  | 2,729,592<br>2.053%  | 35,065,858<br>26.379%  | 3,391,368<br>2.551%  | 27,616,032<br>20.775%  | 4,860,798<br>3.657%  | 16,513,708<br>12.423% | 10,640,565<br>8.005% | 39<br>0.000%    | 74,302<br>0.056%    | 81,650<br>0.061%     | 2,172<br>0.002%   | 91,129<br>0.106%  |
| 117 Transmission Plant Accounts 354-356 Ratio (P3546)<br>Sum of Account 354-356 Factor        | 116,261,625<br>100.000%   | 106,497<br>0.092%   | 116,155,128<br>99.908%   | 307,058<br>0.264%   | 26,469,344<br>22.767%  | 2,302,878<br>1.981%  | 29,689,311<br>25.537%  | 2,861,199<br>2.461%  | 23,298,848<br>20.040%  | 4,100,915<br>3.527%  | 17,938,117<br>15.429% | 8,977,138<br>7.721%  | 33<br>0.000%    | 62,686<br>0.054%    | 68,883<br>0.059%     | 1,833<br>0.002%   | 76,883<br>0.106%  |
| 118 Distribution Plant Accounts 361-362 Ratio (P3612)<br>Sum of Account 361-362 Factor        | 359,045,676<br>100.000%   | 180,074<br>0.050%   | 358,865,602<br>99.950%   | 1,238,624<br>0.345% | 97,974,483<br>27.287%  | 12,721,867<br>3.543% | 93,317,744<br>25.990%  | 10,764,481<br>2.998% | 64,564,982<br>17.982%  | 8,326,651<br>2.319%  | 60,757,637<br>16.922% | 6,843,227<br>1.906%  | 474<br>0.000%   | 961,105<br>0.268%   | 1,196,162<br>0.333%  | 74,786<br>0.007%  | 173,380<br>0.048% |
| 119 Distribution Plant Accounts 364-365 Ratio (P3645)<br>Sum of Account 364-365 Factor        | 386,959,683<br>100.000%   | 77,246<br>0.020%    | 386,882,437<br>99.980%   | 1,834,176<br>0.474% | 207,861,577<br>53.717% | 17,503,358<br>4.523% | 90,675,197<br>23.433%  | 9,974,607<br>2.578%  | 19,457,812<br>5.028%   | 3,101,042<br>0.801%  | 4,819,450<br>1.245%   | 0<br>0.000%          | 910<br>0.000%   | 9,892,131<br>2.556% | 20,996,404<br>5.426% | 211,345<br>0.055% | 554,428<br>0.143% |
| 120 Distribution Plant Accounts 366-367 Ratio (P3667)<br>Sum of Account 366-367 Factor        | 187,377,878<br>100.000%   | 49,591<br>0.026%    | 187,328,287<br>99.974%   | 410,567<br>0.219%   | 36,090,962<br>19.261%  | 4,169,172<br>2.225%  | 59,865,632<br>31.949%  | 9,387,321<br>5.010%  | 54,559,542<br>29.117%  | 9,038,888<br>4.824%  | 12,081,601<br>6.448%  | 0<br>0.000%          | 169<br>0.000%   | 557,667<br>0.298%   | 1,073,730<br>0.573%  | 18,420<br>0.010%  | 74,616<br>0.040%  |
| 121 Distribution Plant Accounts 368 Ratio (P368)<br>Sum of Account 368 Factor                 | 150,946,402<br>100.000%   | 37,361<br>0.025%    | 150,909,041<br>99.975%   | 471,443<br>0.312%   | 60,464,733<br>40.057%  | 3,933,196<br>2.606%  | 32,529,400<br>21.550%  | 4,926,713<br>3.264%  | 20,421%<br>13.537%     | 3,395,609<br>2.249%  | 6,215,374<br>4.118%   | 3,621,588<br>2.399%  | 168<br>0.000%   | 177,747<br>0.118%   | 2,219,658<br>1.470%  | 33,253<br>0.022%  | 94,668<br>0.063%  |
| 122 Distribution Plant Accounts 369 Ratio (P369)<br>Sum of Account 369 Factor                 | 57,792,430<br>100.000%    | 6,933<br>0.012%     | 57,785,475<br>99.988%    | 268,907<br>0.465%   | 44,712,331<br>77.367%  | 2,108,546<br>3.648%  | 6,502,453<br>11.251%   | 600,026<br>1.038%    | 1,881,770<br>3.256%    | 296,222<br>0.513%    | 706,814<br>1.223%     | 667,240<br>1.155%    | 10<br>0.000%    | 17,643<br>0.031%    | 19,390<br>0.034%     | 516<br>0.001%     | 3,608<br>0.006%   |
| 123 Total General Plant Production<br>Sum of General Plant Production                         | 147,528,897<br>100.000%   | 143,956<br>0.098%   | 147,384,941<br>99.902%   | 521,911<br>0.354%   | 41,681,570<br>28.253%  | 5,165,075<br>3.501%  | 37,135,402<br>25.172%  | 4,316,869<br>2.926%  | 28,930,691<br>19.610%  | 5,042,907<br>3.418%  | 12,171,780<br>8.250%  | 11,537,965<br>7.821% | 203<br>0.000%   | 373,303<br>0.253%   | 410,261<br>0.278%    | 10,913<br>0.007%  | 86,091<br>0.058%  |
| 124 Total General Plant Transmission<br>Sum of General Plant Transmission                     | 5,818,906<br>100.000%     | 5,481<br>0.094%     | 5,813,425<br>99.906%     | 15,804<br>0.272%    | 1,362,366<br>23.413%   | 118,528<br>2.037%    | 1,524,952<br>26.207%   | 147,265<br>2.531%    | 1,199,182<br>20.608%   | 211,072<br>3.627%    | 761,380<br>13.085%    | 462,050<br>7.940%    | 2<br>0.000%     | 3,226<br>0.055%     | 3,546<br>0.061%      | 94<br>0.002%      | 3,957<br>0.068%   |
| 125 Total General Plant Distribution<br>Sum of General Plant Distribution                     | 91,896,155<br>100.000%    | 26,825<br>0.029%    | 91,869,330<br>99.971%    | 328,698<br>0.358%   | 35,458,612<br>38.586%  | 3,132,881<br>3.409%  | 23,346,361<br>25.405%  | 2,825,631<br>3.075%  | 13,047,224<br>14.198%  | 1,998,576<br>2.175%  | 6,354,466<br>6.915%   | 840,247<br>0.914%    | 130<br>0.000%   | 1,369,993<br>1.491% | 3,077,404<br>3.349%  | 21,548<br>0.023%  | 67,538<br>0.074%  |
| 126 Total Net Production<br>Sum of Production   | 1,137,452,066<br>100.000% | 1,109,831<br>0.098% | 1,136,342,236<br>99.902% | 4,026,443<br>0.354% | 321,486,397<br>28.264% | 39,854,978<br>3.504% | 286,437,303<br>25.182% | 33,291,213<br>2.927% | 222,944,433<br>19.600% | 38,874,662<br>3.418% | 93,723,363<br>8.240%  | 88,912,906<br>7.817% | 1,568<br>0.000% | 2,878,691<br>0.253% | 3,163,691<br>0.278%  | 84,153<br>0.007%  | 662,434<br>0.058% |
| 127 Total Net Transmission<br>Sum of Transmission   | 175,060,869<br>100.000%   | 165,151<br>0.094%   | 174,895,718<br>99.906%   | 476,172<br>0.272%   | 41,047,496<br>23.448%  | 3,571,202<br>2.040%  | 45,949,953<br>26.248%  | 4,437,022<br>2.535%  | 36,130,630<br>20.639%  | 6,359,519<br>3.633%  | 22,676,920<br>12.953% | 13,921,351<br>7.952% | 51<br>0.000%    | 97,211<br>0.056%    | 106,824<br>0.061%    | 2,842<br>0.002%   | 119,227<br>0.106% |
| 128 Total Net Distribution<br>Sum of Distribution   | 805,211,019<br>100.000%   | 242,631<br>0.030%   | 804,968,388<br>99.970%   | 2,897,765<br>0.360% | 308,493,524<br>38.312% | 27,730,300<br>3.444% | 206,598,560<br>25.658% | 25,227,939<br>3.133% | 118,298,679<br>14.692% | 18,065,201<br>2.244% | 58,402,775<br>7.253%  | 7,527,955<br>0.935%  | 1,155<br>0.000% | 9,622,732<br>1.195% | 21,321,501<br>2.648% | 186,928<br>0.023% | 543,346<br>0.074% |
| 129 Non-Fuel Power Production + Expenses<br>Production less (ECR) Fuel Related Cash Allocator | 672,050,636<br>100.000%   | 582,878<br>0.087%   | 671,467,758<br>99.913%   | 2,115,325<br>0.315% | 212,850,559<br>31.672% | 16,733,230<br>2.490% | 179,552,977<br>26.717% | 17,492,565<br>2.603% | 133,853,423<br>19.917% | 19,802,435<br>2.947% | 50,095,630<br>7.454%  | 33,027,169<br>4.914% | 861<br>0.000%   | 1,031,102<br>0.153% | 3,926,770<br>0.584%  | 81,844<br>0.012%  | 903,867<br>0.134% |
| Average demand  | 1,516                     | 50.33%              |                          |                     |                        |                      |                        |                      |                        |                      |                       |                      |                 |                     |                      |                   |                   |
| Peak demand   | 3,013                     |                     |                          |                     |                        |                      |                        |                      |                        |                      |                       |                      |                 |                     |                      |                   |                   |
| Actual Revenues 1996 (FERC P304, P311)  | *****                     | \$857,283           | \$1,085,649,637          | \$3,349,885         | \$374,878,804          | \$25,788,406         | \$274,794,286          | \$27,070,932         | \$201,573,273          | \$29,104,629         | \$82,353,490          | \$49,601,005         | \$1,323         | \$3,093,842         | \$12,258,677         | \$165,787         | \$1,615,240       |

ADJUSTMENT TO INCOME TAXES - ADJUSTED COSS REVENUES vs. O'Brien REVENUE

Total Operating Revenues per Exhibit MKO-1B, Page 1 of 12 1,211,186,024

REVENUES FROM COSS

|   |  |               |
|---|--|---------------|
| Revenues from Sales adjusted for ECR & STAS Roll-In |  | 1,105,983,132 |
| Off-system Revenues                                 |  | 35,642,755    |
| Other Operating Revenues                            |  | 38,080,636    |
| Total COSS Revenues                                 |  | 1,179,706,523 |

Difference in Revenues (31,479,501)

Impact on Income Taxes

|                    |         |             |
|--------------------|---------|-------------|
| State Tax Effect   | 9.990%  | (3,144,802) |
| Federal Tax Effect | 31.504% | (9,917,145) |
|                    | 41.494% |             |

CALCULATION OF OVERALL EARNED RATE OF RETURN

|                                   |               |
|-----------------------------------|---------------|
| Total Revenues                    | 1,179,706,523 |
| Less: GRT                         | (36,153,777)  |
| Net Revenues                      | 1,143,552,746 |
| Total Expenses w/o GRT            | 933,212,207   |
| Actual Return                     | 210,340,538   |
| Rate Base Adjusted for Ratemaking | 2,368,919,523 |
| Earned Rate of Return             | 8.88%         |

| Yes                                | ← Enter Adjustment Switch ( 'Yes' or 'No' )<br>[ Yes - To Carry Forward Through COSS ] | 1.996<br>FERC<br>FORM 1 | Adjustments<br>From<br>Jim Wilson | OH<br>Adjustments | Total Adjustments<br>To Carry Over To<br>FERC (Base Year)<br>Worksheet | Generation           | Transmission       | Distribution         |
|------------------------------------|--|-------------------------|-----------------------------------|-------------------|--|----------------------|--------------------|----------------------|
| <b>ELECTRIC PLANT IN SERVICE</b>   |  |                         |                                   |                   |  |                      |                    |                      |
| <b>Intangible Plant - P204</b>     |  |                         |                                   |                   |  |                      |                    |                      |
| 301                                | Organization   | 100,275                 |                                   |                   | 100,275  | 60,321               | 2,379              | 37,574               |
| 302                                | Franchises & Consents  | 6,830                   |                                   |                   | 6,830  | 4,109                | 162                | 2,559                |
| 303                                | Miscellaneous Intangible Plant   | 286,993,420             | (243,000,000)                     |                   | 43,993,420   | 26,464,671           | 1,043,832          | 16,484,916           |
|                                    | <b>Total Intangible Plant</b>  | <b>287,100,525</b>      | <b>(243,000,000)</b>              |                   | <b>44,100,525</b>  | <b>26,529,102</b>    | <b>1,046,373</b>   | <b>16,525,049</b>    |
| <b>Production Plant</b>            |  |                         |                                   |                   |  |                      |                    |                      |
| <b>A: Steam Prod Plant</b>         |  |                         |                                   |                   |  |                      |                    |                      |
| 310                                | Land & Land Rights   | 8,026,760               |                                   |                   | 8,026,760  | 8,026,760            |                    |                      |
| 311                                | Structures & Improvements  | 128,853,875             |                                   |                   | 128,853,875  | 128,853,875          |                    |                      |
| 312                                | Boiler Plant Equip   | 484,460,835             |                                   |                   | 484,460,835  | 484,460,835          |                    |                      |
| 313                                | Engines and Engine Driven Motors   | 0                       |                                   |                   | 0  | 0                    |                    |                      |
| 314                                | Turbogenerators  | 115,768,800             |                                   |                   | 115,768,800  | 115,768,800          |                    |                      |
| 315                                | Accessory Electric Equip   | 78,729,366              |                                   |                   | 78,729,366   | 78,729,366           |                    |                      |
| 316                                | Misc Power Plant Equip   | 24,280,712              |                                   |                   | 24,280,712   | 24,280,712           |                    |                      |
|                                    | <b>Total Steam Production</b>  | <b>840,120,348</b>      | <b>0</b>                          |                   | <b>840,120,348</b>   | <b>840,120,348</b>   |                    |                      |
| <b>B: Nuclear Production Plant</b> |  |                         |                                   |                   |  |                      |                    |                      |
| 320                                | Land & Land Rights   | 617,903                 |                                   |                   | 617,903  | 617,903              |                    |                      |
| 321                                | Structures & Improvements  | 229,416,299             |                                   |                   | 229,416,299  | 229,416,299          |                    |                      |
| 322                                | Reactor Plant Equip  | 656,156,421             | 243,000,000                       |                   | 899,156,421  | 899,156,421          |                    |                      |
| 323                                | Turbogenerators  | 119,726,878             |                                   |                   | 119,726,878  | 119,726,878          |                    |                      |
| 324                                | Accessory Electric Equip   | 161,470,226             |                                   |                   | 161,470,226  | 161,470,226          |                    |                      |
| 325                                | Misc Power Plant Equip   | 72,991,217              |                                   |                   | 72,991,217   | 72,991,217           |                    |                      |
|                                    | <b>Total Nuclear Production</b>  | <b>1,240,378,944</b>    | <b>243,000,000</b>                |                   | <b>1,483,378,944</b>   | <b>1,483,378,944</b> |                    |                      |
| <b>D: Other Production Plant</b>   |  |                         |                                   |                   |  |                      |                    |                      |
| 340                                | Land & Land Rights   | 393,704                 |                                   |                   | 393,704  | 393,704              |                    |                      |
| 341                                | Structures & Improvements  | 8,150,271               |                                   |                   | 8,150,271  | 8,150,271            |                    |                      |
| 342                                | Fuel Holders, Products and Accessories   | 3,371,626               |                                   |                   | 3,371,626  | 3,371,626            |                    |                      |
| 343                                | Prime Movers   | 436,877                 |                                   |                   | 436,877  | 436,877              |                    |                      |
| 344                                | Generators   | 22,779,984              |                                   |                   | 22,779,984   | 22,779,984           |                    |                      |
| 345                                | Accessory Electric Equipment   | 6,674,134               |                                   |                   | 6,674,134  | 6,674,134            |                    |                      |
| 346                                | Misc Power Plant Equipment   | 1,092,833               |                                   |                   | 1,092,833  | 1,092,833            |                    |                      |
|                                    | <b>Total Other Production</b>  | <b>42,899,429</b>       | <b>0</b>                          |                   | <b>42,899,429</b>  | <b>42,899,429</b>    |                    |                      |
|                                    | <b>Production Plant - Demand Related</b>   |                         |                                   |                   | <b>667,021,540</b>   | <b>667,021,540</b>   |                    |                      |
|                                    | <b>Production Plant - Energy Related</b>   |                         |                                   |                   | <b>1,699,377,181</b>   | <b>1,699,377,181</b> |                    |                      |
|                                    | <b>Total Production Plant</b>  | <b>2,123,398,721</b>    | <b>243,000,000</b>                |                   | <b>2,366,398,721</b>   | <b>2,366,398,721</b> |                    |                      |
| <b>Transmission Plant</b>          |  |                         |                                   |                   |  |                      |                    |                      |
| 350                                | Land and Land Rights   | 9,833,085               |                                   |                   | 9,833,085  |                      | 9,833,085          |                      |
| 352                                | Structures and Improvements  | 8,073,681               |                                   |                   | 8,073,681  |                      | 8,073,681          |                      |
| 353                                | Station Equipment  | 124,857,725             |                                   |                   | 124,857,725  |                      | 124,857,725        |                      |
| 354                                | Towers & Fixtures  | 66,632,752              |                                   |                   | 66,632,752   |                      | 66,632,752         |                      |
| 355                                | Poles & Fixtures   | 5,653,323               |                                   |                   | 5,653,323  |                      | 5,653,323          |                      |
| 356                                | Ovhd Conductor & Devices   | 43,975,550              |                                   |                   | 43,975,550   |                      | 43,975,550         |                      |
| 357                                | Underground Conduit  | 34,250,903              |                                   |                   | 34,250,903   |                      | 34,250,903         |                      |
| 358                                | Underground Conductors and Devices   | 18,895,858              |                                   |                   | 18,895,858   |                      | 18,895,858         |                      |
| 359                                | Roads & Trails   | 13,879                  |                                   |                   | 13,879   |                      | 13,879             |                      |
|                                    | <b>Total Transmission Plant</b>  | <b>312,186,756</b>      | <b>0</b>                          |                   | <b>312,186,756</b>   |                      | <b>312,186,756</b> |                      |
| <b>Distribution Plant</b>          |  |                         |                                   |                   |  |                      |                    |                      |
| 360                                | Land & Land Rights   | 8,902,261               |                                   |                   | 8,902,261  |                      |                    | 8,902,261            |
| 361                                | Structures & Improvement   | 41,029,378              |                                   |                   | 41,029,378   |                      |                    | 41,029,378           |
| 362                                | Station Equipment  | 318,016,298             |                                   |                   | 318,016,298  |                      |                    | 318,016,298          |
| 363                                | Storage Battery Equipment  | 0                       |                                   |                   | 0  |                      |                    | 0                    |
| 364                                | Poles, Towers, Fixtures*   | 218,026,447             |                                   |                   | 218,026,447  |                      |                    | 218,026,447          |
| 365                                | Ovhd Conductor & Devices   | 168,933,236             |                                   |                   | 168,933,236  |                      |                    | 168,933,236          |
| 366                                | Underground Conduit  | 74,561,251              |                                   |                   | 74,561,251   |                      |                    | 74,561,251           |
| 367                                | Underground Lines  | 112,816,627             |                                   |                   | 112,816,627  |                      |                    | 112,816,627          |
| 368                                | Line Transformers  | 150,946,402             |                                   |                   | 150,946,402  |                      |                    | 150,946,402          |
| 369                                | Services   | 57,792,430              |                                   |                   | 57,792,430   |                      |                    | 57,792,430           |
| 370                                | Meters   | 59,652,919              |                                   |                   | 59,652,919   |                      |                    | 59,652,919           |
| 371                                | Install on Cust Premises*  | 37,793                  |                                   |                   | 37,793   |                      |                    | 37,793               |
| 372                                | Leased Property on Cust Premise  | 0                       |                                   |                   | 0  |                      |                    | 0                    |
| 373                                | Street Lights & Signal Systems   | 22,510,688              |                                   |                   | 22,510,688   |                      |                    | 22,510,688           |
|                                    | <b>Total Distribution Plant</b>  | <b>1,233,225,730</b>    |                                   |                   | <b>1,233,225,730</b>   |                      |                    | <b>1,233,225,730</b> |

| Yes                                | ← Enter Adjustment Switch ( 'Yes' or 'No' )<br>( Yes - To Carry Forward Through COSS ) | 1,996<br>FERC<br>FORM 1 | Adjustments<br>From<br>Jim Wilson | DH<br>Adjustments | Total Adjustments<br>To Carry Over To<br>FERC (Base Year)<br>Worksheet | Generation      | Transmission  | Distribution  |
|------------------------------------|--|-------------------------|-----------------------------------|-------------------|--|-----------------|---------------|---------------|
| <b>General Plant</b>               |  |                         |                                   |                   |  |                 |               |               |
| 389                                | Land & Land Rights   | 6,199,971               |                                   |                   | 6,199,971  | 3,729,653       | 147,107       | 2,323,211     |
| 390                                | Structures & Improvements  | 64,438,073              |                                   |                   | 64,438,073   | 38,763,352      | 1,528,923     | 24,145,798    |
| 391                                | Office Furniture & Equipment   | 48,657,786              |                                   |                   | 48,657,786   | 29,270,566      | 1,154,504     | 18,232,716    |
| 392                                | Transportation Equipment   | 16,877,412              |                                   |                   | 16,877,412   | 10,152,772      | 400,451       | 6,324,190     |
| 393                                | Stores Equipment   | 2,340,839               |                                   |                   | 2,340,839  | 1,408,155       | 55,541        | 877,143       |
| 394                                | Tools, Shop & Garage Equip   | 9,830,485               |                                   |                   | 9,830,485  | 5,913,624       | 233,248       | 3,683,613     |
| 395                                | Laboratory Equipment   | 6,289,389               |                                   |                   | 6,289,389  | 3,783,443       | 149,228       | 2,356,717     |
| 396                                | Power Operated Equipment   | 1,304,358               |                                   |                   | 1,304,358  | 784,649         | 30,949        | 488,760       |
| 397                                | Communication Equipment  | 88,873,334              |                                   |                   | 88,873,334   | 53,462,622      | 2,108,698     | 33,302,014    |
| 398                                | Misc Equipment   | 432,311                 |                                   |                   | 432,311  | 260,061         | 10,257        | 161,993       |
| 399                                | Other Tangible Property  | 72,495,480              | (72,495,480)                      |                   | 0  | 0               | 0             | 0             |
|                                    | Total General Plant  | 317,739,438             | (72,495,480)                      |                   | 245,243,958  | 147,528,897     | 5,818,906     | 91,896,155    |
|                                    | Total General & Intangible Plant   | 604,839,963             | (315,495,480)                     |                   | 289,344,483  | 174,057,999     | 6,865,279     | 108,421,204   |
|                                    | Total Electric Plant in Service - P207   | 4,273,651,170           | (72,495,480)                      |                   | 4,201,155,690  | 2,540,456,720   | 319,052,035   | 1,341,646,934 |
| <hr/>                              |  |                         |                                   |                   |  |                 |               |               |
| 108                                | ACCUMULATED DEPRECIATION - P219<br>Intangible Plant                                    |                         |                                   |                   |  |                 |               |               |
| 301                                | Organization   | 0                       |                                   |                   | 0  | 0               | 0             | 0             |
| 302                                | Franchises & Consents  | 0                       |                                   |                   | 0  | 0               | 0             | 0             |
| 303                                | Miscellaneous Intangible Plant   | (24,586,227)            | 24,586,227                        |                   | 0  | 0               | 0             | 0             |
|                                    | Total Intangible Plant   | (24,586,227)            | 24,586,227                        |                   | 0  | 0               | 0             | 0             |
| <b>Production Plant</b>            |  |                         |                                   |                   |  |                 |               |               |
| <b>A: Steam Prod Plant</b>         |  |                         |                                   |                   |  |                 |               |               |
| 310                                | Land & Land Rights   | 0                       |                                   |                   | 0  | 0               |               |               |
| 311                                | Structures & Improvements  | (73,121,619)            |                                   |                   | (73,121,619)   | (73,121,619)    |               |               |
| 312                                | Boiler Plant Equip   | (218,157,215)           |                                   |                   | (218,157,215)  | (218,157,215)   |               |               |
| 313                                | Engines and Engine Driven Motors   | 0                       |                                   |                   | 0  | 0               |               |               |
| 314                                | Turbogenerators  | (64,854,044)            |                                   |                   | (64,854,044)   | (64,854,044)    |               |               |
| 315                                | Accessory Electric Equip   | (40,961,416)            |                                   |                   | (40,961,416)   | (40,961,416)    |               |               |
| 316                                | Misc Power Plant Equip   | (14,257,747)            |                                   |                   | (14,257,747)   | (14,257,747)    |               |               |
|                                    | Total Steam Production   | (411,352,041)           | 0                                 |                   | (411,352,041)  | (411,352,041)   |               |               |
| <b>B: Nuclear Production Plant</b> |  |                         |                                   |                   |  |                 |               |               |
| 320                                | Land & Land Rights   | 0                       |                                   |                   | 0  | 0               |               |               |
| 321                                | Structures & Improvements  | (125,861,202)           |                                   |                   | (125,861,202)  | (125,861,202)   |               |               |
| 322                                | Reactor Plant Equipment  | (315,714,113)           | (18,824,322)                      |                   | (334,538,435)  | (334,538,435)   |               |               |
| 323                                | Turbogenerators  | (67,672,070)            |                                   |                   | (67,672,070)   | (67,672,070)    |               |               |
| 324                                | Accessory Electric Equipment   | (86,599,467)            |                                   |                   | (86,599,467)   | (86,599,467)    |               |               |
| 325                                | Misc Power Plant Equipment   | (36,502,357)            |                                   |                   | (36,502,357)   | (36,502,357)    |               |               |
|                                    | Total Nuclear Production   | (632,349,209)           | (18,824,322)                      |                   | (651,173,531)  | (651,173,531)   |               |               |
| <b>D: Other Production Plant</b>   |  |                         |                                   |                   |  |                 |               |               |
| 340                                | Land & Land Rights   | 0                       |                                   |                   | 0  | 0               |               |               |
| 341                                | Structures & Improvements  | (3,289,817)             |                                   |                   | (3,289,817)  | (3,289,817)     |               |               |
| 342                                | Fuel Holders, Products and Accessories   | (1,583,911)             |                                   |                   | (1,583,911)  | (1,583,911)     |               |               |
| 343                                | Prime Movers   | (223,568)               |                                   |                   | (223,568)  | (223,568)       |               |               |
| 344                                | Generators   | (10,856,250)            |                                   |                   | (10,856,250)   | (10,856,250)    |               |               |
| 345                                | Accessory Electric Equipment   | (1,919,779)             |                                   |                   | (1,919,779)  | (1,919,779)     |               |               |
| 346                                | Misc Power Plant Equipment   | (1,128,485)             |                                   |                   | (1,128,485)  | (1,128,485)     |               |               |
|                                    | Total Other Production   | (19,001,810)            | 0                                 |                   | (19,001,810)   | (19,001,810)    |               |               |
|                                    | Total Production Plant   | (1,062,703,060)         | (18,824,322)                      |                   | (1,081,527,382)  | (1,081,527,382) | 0             | 0             |
| <b>Transmission Plant</b>          |  |                         |                                   |                   |  |                 |               |               |
| 350                                | Total Land and Land Rights   | 0                       |                                   |                   | 0  |                 | 0             |               |
| 352                                | Structures and Improvements  | (1,960,150)             |                                   |                   | (1,960,150)  |                 | (1,960,150)   |               |
| 353                                | Station Equipment  | (50,537,060)            | (2,756,556)                       |                   | (53,293,616)   |                 | (53,293,616)  |               |
| 354                                | Towers & Fixtures  | (23,349,334)            |                                   |                   | (23,349,334)   |                 | (23,349,334)  |               |
| 355                                | Poles & Fixtures   | (1,666,715)             |                                   |                   | (1,666,715)  |                 | (1,666,715)   |               |
| 356                                | Overhead Conductor & Devices   | (21,424,367)            |                                   |                   | (21,424,367)   |                 | (21,424,367)  |               |
| 357                                | Underground Conduit  | (8,072,593)             |                                   |                   | (8,072,593)  |                 | (8,072,593)   |               |
| 358                                | Underground Conductors and Devices   | (7,918,705)             |                                   |                   | (7,918,705)  |                 | (7,918,705)   |               |
| 359                                | Roads & Trails   | (5,122)                 |                                   |                   | (5,122)  |                 | (5,122)       |               |
|                                    | Total Transmission Plant   | (114,934,046)           | (2,756,556)                       |                   | (117,690,602)  |                 | (117,690,602) |               |

Yes ← Enter Adjustment Switch ( 'Yes' or 'No' )  
 ( Yes - To Carry Forward Through COSS )

|   | 1,996<br>FERC<br>FORM 1 | Adjustments<br>From<br>Jim Wilson | DW<br>Adjustments | Total Adjustments<br>To Carry Over To<br>FERC (Base Year)<br>Worksheet | Generation           | Transmission       | Distribution       |
|---|-------------------------|-----------------------------------|-------------------|--|----------------------|--------------------|--------------------|
| <b>Distribution Plant</b>               |                         |                                   |                   |  |                      |                    |                    |
| 360 Land & Land Rights                  | 0                       |                                   |                   | 0  |                      |                    | 0                  |
| 361 Structures & Improvement            | (13,307,734)            |                                   |                   | (13,307,734)   |                      |                    | (13,307,734)       |
| 362 Station Equipment                   | (71,647,813)            | (13,556,779)                      |                   | (85,204,592)   |                      |                    | (85,204,592)       |
| 363 Storage Battery Equipment           | 0                       |                                   |                   | 0  |                      |                    | 0                  |
| 364 Poles, Towers, Fixtures*            | (66,699,658)            |                                   |                   | (66,699,658)   |                      |                    | (66,699,658)       |
| 365 Ovhd Conductor & Devices            | (60,090,427)            |                                   |                   | (60,090,427)   |                      |                    | (60,090,427)       |
| 366 Underground Conduit                 | (15,840,062)            |                                   |                   | (15,840,062)   |                      |                    | (15,840,062)       |
| 367 Underground Lines                   | (34,037,405)            |                                   |                   | (34,037,405)   |                      |                    | (34,037,405)       |
| 368 Line Transformers                   | (51,529,607)            |                                   |                   | (51,529,607)   |                      |                    | (51,529,607)       |
| 369 Services                            | (19,868,087)            |                                   |                   | (19,868,087)   |                      |                    | (19,868,087)       |
| 370 Meters                              | (25,120,856)            |                                   |                   | (25,120,856)   |                      |                    | (25,120,856)       |
| 371 Installations on Cust Premises      | 37,544                  |                                   |                   | 37,544   |                      |                    | 37,544             |
| 372 Leased Property on Customer Premise | 0                       |                                   |                   | 0  |                      |                    | 0                  |
| 373 Street Lights & Signal Systems      | (14,747,084)            |                                   |                   | (14,747,084)   |                      |                    | (14,747,084)       |
| Total Distribution Plant                | (372,851,189)           | (13,556,779)                      |                   | (386,407,968)  |                      |                    | (386,407,968)      |
| <b>General Plant</b>                    |                         |                                   |                   |  |                      |                    |                    |
| 389 Land & Land Rights                  | 0                       |                                   |                   | 0  | 0                    | 0                  | 0                  |
| 390 Structures & Improvements           | (22,588,933)            |                                   |                   | (22,588,933)   | (13,588,593)         | (535,968)          | (8,464,372)        |
| 391 Office Furniture & Equipment        | (20,284,790)            |                                   |                   | (20,284,790)   | (12,202,513)         | (481,297)          | (7,600,979)        |
| 392 Transportation Equipment            | (9,511,415)             |                                   |                   | (9,511,415)  | (5,721,685)          | (225,677)          | (3,564,053)        |
| 393 Stores Equipment                    | (880,929)               |                                   |                   | (880,929)  | (529,931)            | (20,902)           | (330,096)          |
| 394 Tools, Shop & Garage Equipment      | (3,534,301)             |                                   |                   | (3,534,301)  | (2,126,093)          | (83,858)           | (1,324,349)        |
| 395 Laboratory Equipment                | (2,217,133)             |                                   |                   | (2,217,133)  | (1,333,738)          | (52,606)           | (830,789)          |
| 396 Power Operated Equipment            | (855,117)               |                                   |                   | (855,117)  | (514,404)            | (20,289)           | (320,424)          |
| 397 Communication Equipment             | (49,594,356)            |                                   |                   | (49,594,356)   | (29,833,969)         | (1,176,726)        | (18,583,661)       |
| 398 Misc Equipment                      | (169,296)               |                                   |                   | (169,296)  | (101,842)            | (4,017)            | (63,437)           |
| Subtotal                                | (109,636,270)           | 0                                 |                   | (109,636,270)  | (65,952,768)         | (2,601,341)        | (41,082,160)       |
| 399 Other Tangible Property             | (67,751,995)            | 67,751,995                        |                   | 0  | 0                    | 0                  | 0                  |
| Total General Plant                     | (177,388,265)           | 67,751,995                        |                   | (109,636,270)  | (65,952,768)         | (2,601,341)        | (41,082,160)       |
| Total Accumulated Depreciation          | (1,752,462,787)         | 57,200,565                        |                   | (1,695,262,222)  | (1,147,480,150)      | (120,291,943)      | (427,490,128)      |
| <b>NET PLANT IN SERVICE</b>             | <b>2,521,188,383</b>    | <b>(15,294,915)</b>               |                   | <b>2,505,893,468</b>   | <b>1,392,976,569</b> | <b>198,760,093</b> | <b>914,156,806</b> |

Rate Base Per Books Adjustments

| Acct             | Production Plant                              |             |               |   |   |   |   |
|------------------|---|-------------|---------------|---|---|---|---|
| 106              | CWIP - Construction Work in Progress (P216.1) | 0           |               | 0 | 0 | 0 | 0 |
| <b>Additions</b> |   |             |               |   |   |   |   |
| 105              | Add: Land/Plant Held For Future Use (P214)    | 189,703,851 | (189,703,851) | 0 | 0 | 0 | 0 |

Yes ← Enter Adjustment Switch ( 'Yes' or 'No' )  
 ( Yes - To Carry Forward Through COSS )

1,996  
 FERC  
 FORM 1

Adjustments  
 From  
 Jim Wilson

Total Adjustments  
 To Carry Over To  
 FERC (Base Year)  
 Worksheet  
 DII  
 Adjustments

Generation    Transmission    Distribution

**Deductions**

Less: Accum. Deferred Income Taxes (P273-277)  
 (Accounts 281-283)

|  |  |               |             |               |               |              |              |
|--|--|---------------|-------------|---------------|---------------|--------------|--------------|
| 301                                      | Organization                           | 0             |             | 0             |               |              |              |
| 302                                      | Franchises & Consents                  | 0             |             | 0             |               |              |              |
| 303                                      | Miscellaneous Intangible Plant         | (3,363.051)   | 3,363.051   | 0             |               |              |              |
|  | Total Intangible Plant                 | (3,363.051)   | 3,363.051   | 0             |               |              |              |
| <b>Production Plant</b>                  |  |               |             |               |               |              |              |
| <b>A: Steam Prod Plant</b>               |  |               |             |               |               |              |              |
| 310                                      | Land & Land Rights                     |               |             | 0             |               |              |              |
| 311                                      | Structures & Improvements              |               |             | 0             |               |              |              |
| 312                                      | Boiler Plant Equip                     |               |             | 0             |               |              |              |
| 313                                      | Engines and Engine Driven Motors       |               |             | 0             |               |              |              |
| 314                                      | Turbogenerators                        |               |             | 0             |               |              |              |
| 315                                      | Accessory Electric Equip               |               |             | 0             |               |              |              |
| 316                                      | Misc Power Plant Equip                 |               |             | 0             |               |              |              |
| 317                                      | Transfer From General Plant            |               |             | 0             |               |              |              |
| 318                                      | Transfer From General Plant            |               |             | 0             |               |              |              |
|  | Total Steam Production                 | (64,681,794)  |             | (64,681,794)  | (64,681,794)  |              |              |
| <b>B: Nuclear Production Plant</b>       |  |               |             |               |               |              |              |
| 320                                      | Land & Land Rights                     |               |             | 0             |               |              |              |
| 321                                      | Structures & Improvements              |               |             | 0             |               |              |              |
| 322                                      | Reactor Plant Equip                    |               |             | 0             |               |              |              |
| 323                                      | Turbogenerators                        |               |             | 0             |               |              |              |
| 324                                      | Accessory Electric Equip               |               |             | 0             |               |              |              |
| 325                                      | Misc Power Plant Equip                 |               |             | 0             |               |              |              |
|  | Total Nuclear Production               | (168,710,461) | (3,363,051) | (172,073,512) | (172,073,512) |              |              |
| <b>D: Other Production Plant</b>         |  |               |             |               |               |              |              |
| 340                                      | Land & Land Rights                     |               |             | 0             |               |              |              |
| 341                                      | Structures & Improvements              |               |             | 0             |               |              |              |
| 342                                      | Fuel Holders, Products and Accessories |               |             | 0             |               |              |              |
| 343                                      | Prime Movers                           |               |             | 0             |               |              |              |
| 344                                      | Generators                             |               |             | 0             |               |              |              |
| 345                                      | Accessory Electric Equipment           |               |             | 0             |               |              |              |
| 346                                      | Misc Power Plant Equipment             |               |             | 0             |               |              |              |
|  | Total Other Production                 | (3,269,464)   | 0           | (3,269,464)   | (3,269,464)   |              |              |
| <b>Production Plant - Demand Related</b> |  |               |             |               |               |              |              |
| <b>Production Plant - Energy Related</b> |  |               |             |               |               |              |              |
|  | Total Production Plant                 | (236,661,719) | (3,363,051) | (240,024,770) | (240,024,770) | 0            | 0            |
| <b>Transmission Plant</b>                |  |               |             |               |               |              |              |
| 350                                      | Land and Land Rights                   |               |             |               |               |              |              |
| 352                                      | Structures and Improvements            |               |             |               |               |              |              |
| 353                                      | Station Equipment                      |               |             |               |               |              |              |
| 354                                      | Towers & Fixtures                      |               |             |               |               |              |              |
| 355                                      | Poles & Fixtures                       |               |             |               |               |              |              |
| 356                                      | Ovhd Conductor & Devices               |               |             |               |               |              |              |
| 357                                      | Underground Conduit                    |               |             |               |               |              |              |
| 358                                      | Underground Conductors and Devices     |               |             |               |               |              |              |
| 359                                      | Roads & Trails                         |               |             |               |               |              |              |
|  | Total Transmission Plant               | (23,087,876)  |             | (23,087,876)  |               | (23,087,876) |              |
| <b>Distribution Plant</b>                |  |               |             |               |               |              |              |
| 360                                      | Land & Land Rights                     |               |             |               |               |              |              |
| 361                                      | Structures & Improvement               |               |             |               |               |              |              |
| 362                                      | Station Equipment                      |               |             |               |               |              |              |
| 363                                      | Storage Battery Equipment              |               |             |               |               |              |              |
| 364                                      | Poles, Towers, Fixtures*               |               |             |               |               |              |              |
| 365                                      | Ovhd Conductor & Devices               |               |             |               |               |              |              |
| 366                                      | Underground Conduit                    |               |             |               |               |              |              |
| 367                                      | Underground Lines                      |               |             |               |               |              |              |
| 368                                      | Line Transformers                      |               |             |               |               |              |              |
| 369                                      | Services                               |               |             |               |               |              |              |
| 370                                      | Meters                                 |               |             |               |               |              |              |
| 371                                      | Install on Cust Premises*              |               |             |               |               |              |              |
| 372                                      | Leased Property on Cust Premise        |               |             |               |               |              |              |
| 373                                      | Street Lights & Signal Systems         |               |             |               |               |              |              |
|  | Total Distribution Plant               | (99,290,960)  |             | (99,290,960)  |               |              | (99,290,960) |

Yes ← Enter Adjustment Switch ( 'Yes' or 'No' )  
 ( Yes - To Carry Forward Through COSS )

|  | 1.996<br>FERC<br>FORM 1 | Adjustments<br>From<br>Jim Wilson | D/E<br>Adjustments | Total Adjustments<br>To Carry Over To<br>FERC (Base Year)<br>Worksheet | Generation    | Transmission | Distribution  |
|--|-------------------------|-----------------------------------|--------------------|--|---------------|--------------|---------------|
| <u>General Plant</u>                           |                         |                                   |                    |  |               |              |               |
| 389 Land & Land Rights                         |                         |                                   |                    |  |               |              |               |
| 390 Structures & Improvements                  |                         |                                   |                    |  |               |              |               |
| 391 Office Furniture & Equipment               |                         |                                   |                    |  |               |              |               |
| 392 Transportation Equipment                   |                         |                                   |                    |  |               |              |               |
| 393 Stores Equipment                           |                         |                                   |                    |  |               |              |               |
| 394 Tools, Shop & Garage Equip                 |                         |                                   |                    |  |               |              |               |
| 395 Laboratory Equipment                       |                         |                                   |                    |  |               |              |               |
| 396 Power Operated Equipment                   |                         |                                   |                    |  |               |              |               |
| 397 Communication Equipment                    |                         |                                   |                    |  |               |              |               |
| 398 Misc Equipment                             | (25,765,908)            |                                   |                    | (25,765,908)   |               |              |               |
| 399 Other Tangible Property                    | (11,227,191)            | 11,227,191                        |                    | 0  |               |              |               |
| Total General Plant                            | (36,993,099)            | 11,227,191                        |                    | (25,765,908)   | (15,499,733)  | (611,348)    | (9,654,827)   |
| Total Accum. Deferred Taxes                    | (399,396,705)           | 11,227,191                        |                    | (388,169,514)  | (255,524,503) | (23,699,224) | (108,945,787) |
| Total Adjusted Net Plant                       | 2,311,495,529           | (193,771,575)                     |                    | 2,117,723,954  | 1,137,452,066 | 175,060,869  | 805,211,019   |
| <u>Adjustments To Rate Base For Ratemaking</u> |                         |                                   |                    |  |               |              |               |
| Add: Regulatory Assets                         |                         | 544,788,485                       |                    | 544,788,485  | 455,273,723   | 32,670,171   | 56,844,591    |
| Phillips                                       |                         | 78,399,252                        |                    | 78,399,252   | 78,399,252    |              |               |
| Brunot Island                                  |                         | 28,758,563                        |                    | 28,758,563   | 28,758,563    |              |               |
| Warwick  |                         | 15,294,914                        |                    | 15,294,914   | 15,294,914    |              |               |
| Deferred Taxes                                 |                         | (485,985,645)                     |                    | (485,985,645)  | (383,558,497) | (37,049,551) | (65,377,597)  |
| Working Capital                                |                         | 69,940,000                        |                    | 69,940,000   | 63,590,000    | 1,240,000    | 5,110,000     |
| Total Adjustment To Rate Base                  |                         | 251,195,569                       |                    | 251,195,569  | 257,757,955   | (3,139,380)  | (3,423,006)   |
| Rate Base Adjusted For Ratemaking              | 2,311,495,529           | 57,423,994                        |                    | 2,368,919,523  | 1,395,210,021 | 171,921,489  | 801,788,013   |

Yes ← Enter Adjustment Switch ( 'Yes' or 'No' )  
( 'Yes' - To Carry Forward Through COSS )

|   | 1,996<br>FERC<br>FORM 1 | Adjustments<br>From<br>Jim Wilson | D#<br>Adjustments | Total Adjustments<br>To Carry Over To<br>FERC (Base Year)<br>Worksheet | Generation         | Transmission | Distribution |
|---|-------------------------|-----------------------------------|-------------------|--|--------------------|--------------|--------------|
| <b>POWER PRODUCTION EXPENSE - P320</b>      |                         |                                   |                   |  |                    |              |              |
| <b>A: Steam Power Generation</b>            |                         |                                   |                   |  |                    |              |              |
| <b>Operation</b>                            |                         |                                   |                   |  |                    |              |              |
| 500 Supervision & Engineering               | 5,264,775               | 739,872                           |                   | 6,004,647  | 6,004,647          |              |              |
| 501 Fuel                                    | 175,962,858             | (19,557,695)                      |                   | 156,405,163  | 156,405,163        |              |              |
| 502 Steam Expense                           | 9,003,904               | (413,389)                         |                   | 8,590,515  | 8,590,515          |              |              |
| 503 Steam From Other Sources                | 0                       |                                   |                   | 0  | 0                  |              |              |
| 504 Steam Transferred - Credit              | 0                       |                                   |                   | 0  | 0                  |              |              |
| 505 Electric Expenses                       | 2,148,465               | (43,591)                          |                   | 2,104,874  | 2,104,874          |              |              |
| 506 Misc Steam Expense                      | 7,322,114               | (562,387)                         |                   | 6,759,727  | 6,759,727          |              |              |
| 507 Rents                                   | 335,734                 | (256)                             |                   | 335,478  | 335,478            |              |              |
| 509 Allowances                              | 2,068,025               |                                   |                   | 2,068,025  | 2,068,025          |              |              |
| <b>Total Operation</b>                      | <b>202,105,875</b>      | <b>(19,837,446)</b>               |                   | <b>182,268,429</b>   | <b>182,268,429</b> |              |              |
| <b>Maintenance</b>                          |                         |                                   |                   |  |                    |              |              |
| 510 Supervision & Engineering               | 1,504,322               | (258,352)                         |                   | 1,245,970  | 1,245,970          |              |              |
| 511 Structures                              | 1,255,864               | (294,925)                         |                   | 960,939  | 960,939            |              |              |
| 512 Boiler Equipment                        | 16,766,780              | (1,372,988)                       |                   | 15,393,792   | 15,393,792         |              |              |
| 513 Electric Plant                          | 4,803,725               | (779,026)                         |                   | 4,024,699  | 4,024,699          |              |              |
| 514 Misc Steam Plant                        | 5,353,336               | (715,789)                         |                   | 4,637,547  | 4,637,547          |              |              |
| <b>Total Maintenance</b>                    | <b>29,684,027</b>       | <b>(3,421,080)</b>                |                   | <b>26,262,947</b>  | <b>26,262,947</b>  |              |              |
| <b>Total Steam Expense</b>                  | <b>231,789,902</b>      | <b>(23,258,526)</b>               |                   | <b>208,531,376</b>   | <b>208,531,376</b> |              |              |
| <b>B: Nuclear Power Generation</b>          |                         |                                   |                   |  |                    |              |              |
| <b>Operation</b>                            |                         |                                   |                   |  |                    |              |              |
| 517 Supervision & Engineering               | 13,575,986              |                                   |                   | 13,575,986   | 13,575,986         |              |              |
| 518 Fuel                                    | 26,648,415              | (907,606)                         |                   | 25,740,809   | 25,740,809         |              |              |
| 519 Coolants & Water                        | 558,656                 |                                   |                   | 558,656  | 558,656            |              |              |
| 520 Steam Expenses                          | 5,455,447               |                                   |                   | 5,455,447  | 5,455,447          |              |              |
| 521 Steam from Other Sources                | 0                       |                                   |                   | 0  | 0                  |              |              |
| 522 Steam Transferred - Credit              | 0                       |                                   |                   | 0  | 0                  |              |              |
| 523 Electric Expenses                       | 129,447                 |                                   |                   | 129,447  | 129,447            |              |              |
| 524 Misc Nuclear Power Expense              | 16,937,324              |                                   |                   | 16,937,324   | 16,937,324         |              |              |
| 525 Rents                                   | 47,728,121              | (1,505,001)                       |                   | 46,223,120   | 46,223,120         |              |              |
| <b>Total Operation</b>                      | <b>111,033,396</b>      | <b>(2,412,607)</b>                |                   | <b>108,620,789</b>   | <b>108,620,789</b> |              |              |
| <b>Maintenance</b>                          |                         |                                   |                   |  |                    |              |              |
| 528 Supervision & Engineering               | 3,295,342               |                                   |                   | 3,295,342  | 3,295,342          |              |              |
| 529 Structures                              | 1,641,883               |                                   |                   | 1,641,883  | 1,641,883          |              |              |
| 530 Reactor Plant Equipment                 | 7,760,707               |                                   |                   | 7,760,707  | 7,760,707          |              |              |
| 531 Electric Plant                          | 3,324,829               |                                   |                   | 3,324,829  | 3,324,829          |              |              |
| 532 Misc Nuclear Plant                      | 8,111,238               | (90,300)                          |                   | 8,020,938  | 8,020,938          |              |              |
| <b>Total Maintenance</b>                    | <b>24,133,999</b>       | <b>(90,300)</b>                   |                   | <b>24,043,699</b>  | <b>24,043,699</b>  |              |              |
| <b>Total Nuclear Expense</b>                | <b>135,167,395</b>      | <b>(2,502,907)</b>                |                   | <b>132,664,488</b>   | <b>132,664,488</b> |              |              |
| <b>C: Hydraulic Power Generation</b>        |                         |                                   |                   |  |                    |              |              |
| <b>Operation</b>                            |                         |                                   |                   |  |                    |              |              |
| 535 Supervision & Engineering               | 0                       |                                   |                   | 0  | 0                  |              |              |
| 536 Water & Power                           | 0                       |                                   |                   | 0  | 0                  |              |              |
| 537 Hydraulic Expense                       | 0                       |                                   |                   | 0  | 0                  |              |              |
| 538 Electric Expense                        | 0                       |                                   |                   | 0  | 0                  |              |              |
| 539 Misc Hydraulic Exp                      | 0                       |                                   |                   | 0  | 0                  |              |              |
| 540 Rents                                   | 0                       |                                   |                   | 0  | 0                  |              |              |
| <b>Total Operation</b>                      | <b>0</b>                | <b>0</b>                          |                   | <b>0</b>   | <b>0</b>           |              |              |
| <b>Maintenance</b>                          |                         |                                   |                   |  |                    |              |              |
| 541 Supervision & Engineering               | 0                       |                                   |                   | 0  | 0                  |              |              |
| 542 Structures                              | 0                       |                                   |                   | 0  | 0                  |              |              |
| 543 Resvrs.Dams.Waterways                   | 0                       |                                   |                   | 0  | 0                  |              |              |
| 544 Electric Plant                          | 0                       |                                   |                   | 0  | 0                  |              |              |
| 545 Misc Hydraulic Exp                      | 0                       |                                   |                   | 0  | 0                  |              |              |
| <b>Total Maintenance</b>                    | <b>0</b>                | <b>0</b>                          |                   | <b>0</b>   | <b>0</b>           |              |              |
| <b>Total Hydraulic Expense</b>              | <b>0</b>                | <b>0</b>                          |                   | <b>0</b>   | <b>0</b>           |              |              |
| <b>D: Other Power Generation</b>            |                         |                                   |                   |  |                    |              |              |
| <b>Operation</b>                            |                         |                                   |                   |  |                    |              |              |
| 546 Supervision & Engineering               | 26,232                  |                                   |                   | 26,232   | 26,232             |              |              |
| 547 Fuel                                    | 201,637                 |                                   |                   | 201,637  | 201,637            |              |              |
| 548 Generation Expense                      | 25,322                  |                                   |                   | 25,322   | 25,322             |              |              |
| 549 Misc Power Prod Exp                     | 130,029                 |                                   |                   | 130,029  | 130,029            |              |              |
| 550 Rents                                   | 0                       |                                   |                   | 0  | 0                  |              |              |
| <b>Total Operation</b>                      | <b>383,220</b>          | <b>0</b>                          |                   | <b>383,220</b>   | <b>383,220</b>     |              |              |
| <b>Maintenance</b>                          |                         |                                   |                   |  |                    |              |              |
| 551 Supervision & Engineering               | 26,391                  |                                   |                   | 26,391   | 26,391             |              |              |
| 552 Structures                              | 32,128                  |                                   |                   | 32,128   | 32,128             |              |              |
| 553 Gen & Electric Plant                    | 36,380                  |                                   |                   | 36,380   | 36,380             |              |              |
| 554 Misc Power Exp                          | 17,924                  |                                   |                   | 17,924   | 17,924             |              |              |
| <b>Total Maintenance</b>                    | <b>112,823</b>          | <b>0</b>                          |                   | <b>112,823</b>   | <b>112,823</b>     |              |              |
| <b>Total Other Power Production Expense</b> | <b>496,043</b>          | <b>0</b>                          |                   | <b>496,043</b>   | <b>496,043</b>     |              |              |

|                               |                                  | 1,996<br>FERC<br>FORM 1 | Adjustments<br>From<br>Jim Wilson | DN<br>Adjustments | Total Adjustments<br>To Carry Over To<br>FERC (Base Year)<br>Worksheet | Generation  | Transmission | Distribution |
|-------------------------------|----------------------------------|-------------------------|-----------------------------------|-------------------|--|-------------|--------------|--------------|
| E: Other Power Supply Expense |                                  |                         |                                   |                   |  |             |              |              |
| 555                           | Purchased Power                  | 32,269,274              |                                   |                   | 32,269,274   | 32,269,274  |              |              |
|                               | Energy Related                   | 0                       |                                   |                   | 0  | 0           |              |              |
|                               | Demand Related                   | 0                       |                                   |                   | 0  | 0           |              |              |
| 556                           | Sys Cont & Load Dispatch         | 828,636                 | (828,636)                         |                   | 0  | 0           |              |              |
| 557                           | Other Expense                    | (4,144,414)             | 4,527,073                         |                   | 382,659  | 382,659     |              |              |
|                               | Total Other Power Supply Expense | 28,953,496              | 3,698,437                         |                   | 32,651,933   | 32,651,933  |              |              |
|                               | Total Power Production Expense   | 396,406,836             | (22,062,996)                      |                   | 374,343,840  | 374,343,840 |              |              |
| Transmission Expense          |                                  |                         |                                   |                   |  |             |              |              |
| Operation                     |                                  |                         |                                   |                   |  |             |              |              |
| 560                           | Supervision & Engineering        | 229,232                 | 60,164                            |                   | 289,396  |             | 289,396      |              |
| 561                           | Load Dispatching                 | 715,428                 | 248,591                           |                   | 964,019  |             | 964,019      |              |
| 562                           | Station Exp                      | 585,615                 |                                   |                   | 585,615  |             | 585,615      |              |
| 563                           | Ovhd Line Exp                    | 3,116                   |                                   |                   | 3,116  |             | 3,116        |              |
| 564                           | Underground Line Expense         | 33,965                  |                                   |                   | 33,965   |             | 33,965       |              |
| 565                           | Transmission By Others           | 5,411,140               |                                   |                   | 5,411,140  |             | 5,411,140    |              |
| 566                           | Misc Trans Exp                   | 64,167                  |                                   |                   | 64,167   |             | 64,167       |              |
| 567                           | Rents                            | 486,227                 |                                   |                   | 486,227  |             | 486,227      |              |
|                               | Total Operation                  | 7,528,890               | 308,755                           |                   | 7,837,645  |             | 7,837,645    |              |
| Maintenance                   |                                  |                         |                                   |                   |  |             |              |              |
| 568                           | Supervision & Engineering        | 61,655                  |                                   |                   | 61,655   |             | 61,655       |              |
| 569                           | Structures                       | 457,572                 |                                   |                   | 457,572  |             | 457,572      |              |
| 570                           | Station Equipment                | 438,228                 |                                   |                   | 438,228  |             | 438,228      |              |
| 571                           | Ovhd Lines                       | 2,275,982               |                                   |                   | 2,275,982  |             | 2,275,982    |              |
| 572                           | Underground Lines                | 40,997                  |                                   |                   | 40,997   |             | 40,997       |              |
| 573                           | Misc Trans Exp                   | 0                       |                                   |                   | 0  |             | 0            |              |
|                               | Total Maintenance                | 3,274,434               | 0                                 |                   | 3,274,434  |             | 3,274,434    |              |
|                               | Total Transmission Expense       | 10,803,324              | 308,755                           |                   | 11,112,079   |             | 11,112,079   |              |
| Distribution Expense          |                                  |                         |                                   |                   |  |             |              |              |
| Operation                     |                                  |                         |                                   |                   |  |             |              |              |
| 580                           | Supervision & Engineering        | 1,266,741               | 950,158                           |                   | 2,216,899  |             |              | 2,216,899    |
| 581                           | Load Dispatching                 | 574,447                 | 580,045                           |                   | 1,154,492  |             |              | 1,154,492    |
| 582                           | Station Expense                  | 2,833,152               |                                   |                   | 2,833,152  |             |              | 2,833,152    |
| 583                           | Ovhd Line Exp                    | 3,631,484               |                                   |                   | 3,631,484  |             |              | 3,631,484    |
|                               | Primary                          | 1,280,522               |                                   |                   | 1,280,522  |             |              | 1,280,522    |
|                               | Secondary                        | 2,350,962               |                                   |                   | 2,350,962  |             |              | 2,350,962    |
| 584                           | Undergrd Line Expense            | 802,063                 |                                   |                   | 802,063  |             |              | 802,063      |
|                               | Primary                          | 732,043                 |                                   |                   | 732,043  |             |              | 732,043      |
|                               | Secondary                        | 70,020                  |                                   |                   | 70,020   |             |              | 70,020       |
| 585                           | St Lighting & Signal Exp         | 292,590                 |                                   |                   | 292,590  |             |              | 292,590      |
| 586                           | Meter Expense                    | 1,285,488               |                                   |                   | 1,285,488  |             |              | 1,285,488    |
| 587                           | Customer Install Expense         | 3,447,613               |                                   |                   | 3,447,613  |             |              | 3,447,613    |
| 588                           | Misc Dist Exp                    | 3,192,187               |                                   |                   | 3,192,187  |             |              | 3,192,187    |
| 589                           | Rents                            | 1,827,440               |                                   |                   | 1,827,440  |             |              | 1,827,440    |
|                               | Total Operation                  | 19,153,205              | 1,530,203                         |                   | 20,683,408   |             |              |              |
| Maintenance                   |                                  |                         |                                   |                   |  |             |              |              |
| 590                           | Supervision & Engineering        | 454,314                 |                                   |                   | 454,314  |             |              | 454,314      |
| 591                           | Structures                       | 466,745                 |                                   |                   | 466,745  |             |              | 466,745      |
| 592                           | Station Equipment                | 1,457,120               |                                   |                   | 1,457,120  |             |              | 1,457,120    |
| 593                           | Overhead Lines                   | 13,504,784              |                                   |                   | 13,504,784   |             |              | 13,504,784   |
|                               | Primary                          | 13,504,784              |                                   |                   | 13,504,784   |             |              | 13,504,784   |
|                               | Secondary                        | 0                       |                                   |                   | 0  |             |              | 0            |
| 594                           | Underground Lines                | 845,121                 |                                   |                   | 845,121  |             |              | 845,121      |
|                               | Primary                          | 845,121                 |                                   |                   | 845,121  |             |              | 845,121      |
|                               | Secondary                        | 0                       |                                   |                   | 0  |             |              | 0            |
| 595                           | Line Transformers                | 105,029                 |                                   |                   | 105,029  |             |              | 105,029      |
|                               | Demand Related                   | 105,029                 |                                   |                   | 105,029  |             |              | 105,029      |
|                               | Customer Related                 | 0                       |                                   |                   | 0  |             |              | 0            |
| 596                           | St Lighting & Signal sys         | 84,234                  |                                   |                   | 84,234   |             |              | 84,234       |
| 597                           | Meters                           | 596,821                 |                                   |                   | 596,821  |             |              | 596,821      |
| 598                           | Misc Dist Plant Expense          | 403,934                 |                                   |                   | 403,934  |             |              | 403,934      |
|                               | Total Maintenance                | 17,918,102              | 0                                 |                   | 17,918,102   |             |              | 17,918,102   |
|                               | Total Distribution Expense       | 37,071,307              | 1,530,203                         |                   | 38,601,510   |             |              | 38,601,510   |

Yes  No -- Enter Adjustment Switch ('Yes' or 'No')  
 (Yes - To Carry Forward Through COSS)

|  | 1,996<br>FERC<br>FORM 1 | Adjustments<br>From<br>Jim Wilson | Diff<br>Adjustments | Total Adjustments<br>To Carry Over To<br>FERC (Base Year)<br>Worksheet | Generation         | Transmission      | Distribution       |
|--|-------------------------|-----------------------------------|---------------------|--|--------------------|-------------------|--------------------|
| <b>Customer Accounts Expense</b>                 |                         |                                   |                     |  |                    |                   |                    |
| 901 Supervision                                  | 3,406,371               |                                   |                     | 3,406,371  |                    |                   | 3,406,371          |
| 902 Meter Reading                                | 4,382,518               |                                   |                     | 4,382,518  |                    |                   | 4,382,518          |
| 903 Cust Records & Contracts                     | 13,520,070              |                                   |                     | 13,520,070   |                    |                   | 13,520,070         |
| 904 Uncollectible Accts                          | 11,000,000              |                                   |                     | 11,000,000   |                    |                   | 11,000,000         |
| 905 Misc Cust Accts Exp                          | 187,178                 |                                   |                     | 187,178  |                    |                   | 187,178            |
| Total Cust Accts Expense                         | 32,496,137              | 0                                 |                     | 32,496,137   |                    |                   | 32,496,137         |
| <b>Customer Service &amp; Info Expense</b>       |                         |                                   |                     |  |                    |                   |                    |
| 907 Cust Service & Info                          | 176,328                 |                                   |                     | 176,328  |                    |                   | 176,328            |
| 908 Customer Assistance                          | 1,740,258               |                                   |                     | 1,740,258  |                    |                   | 1,740,258          |
| 909 Info, Instruct, Advertise                    | 220,069                 |                                   |                     | 220,069  |                    |                   | 220,069            |
| 910 Misc Cust Serv & Info                        | 30,974                  |                                   |                     | 30,974   |                    |                   | 30,974             |
| Total Cust Asst & Info Exp                       | 2,167,629               | 0                                 |                     | 2,167,629  |                    |                   | 2,167,629          |
| <b>Sales Expense</b>                             |                         |                                   |                     |  |                    |                   |                    |
| 911 Supervision                                  | 18,837                  |                                   |                     | 18,837   |                    |                   | 18,837             |
| 912 Demonstrate & Selling                        | 4,377,036               |                                   |                     | 4,377,036  |                    |                   | 4,377,036          |
| 913 Advertising                                  | 19,427                  |                                   |                     | 19,427   |                    |                   | 19,427             |
| 916 Misc Sales Expense                           | 118,689                 |                                   |                     | 118,689  |                    |                   | 118,689            |
| Total Sales Expense                              | 4,533,989               | 0                                 |                     | 4,533,989  |                    |                   | 4,533,989          |
| <b>Administrative &amp; General Expense</b>      |                         |                                   |                     |  |                    |                   |                    |
| <b>Operation</b>                                 |                         |                                   |                     |  |                    |                   |                    |
| 920 Salaries                                     | 25,690,455              | 648,390                           |                     | 26,338,845   | 15,844,389         | 624,942           | 9,869,514          |
| 921 Office Supplies & Exp                        | 5,596,877               |                                   |                     | 5,596,877  | 3,366,856          | 132,797           | 2,097,224          |
| 922 Admin Expenses Transferred - Credit          | (6,171,869)             |                                   |                     | (6,171,869)  | (3,712,748)        | (146,440)         | (2,312,681)        |
| 923 Outside Services Employ                      | 8,467,154               |                                   |                     | 8,467,154  | 5,093,499          | 200,900           | 3,172,755          |
| 924 Property Insurance                           | 5,604,103               |                                   |                     | 5,604,103  | 5,155,774          | 57,196            | 391,133            |
| 925 Injuries & Damages                           | 3,604,775               |                                   |                     | 3,604,775  | 2,168,488          | 85,531            | 1,350,757          |
| 926 Pensions & Benefits                          | 12,725,517              | 778,929                           |                     | 13,504,446   | 8,123,731          | 320,420           | 5,060,295          |
| 927 Franchise Requirements                       | 0                       |                                   |                     | 0  | 0                  | 0                 | 0                  |
| 928 Reg Comm Exp-VT PSB                          | 1,790,074               |                                   |                     | 1,790,074  | 1,076,836          | 42,473            | 670,764            |
| 929 Duplicate Charges - Credit                   | (1,247,245)             |                                   |                     | (1,247,245)  | (750,292)          | (29,593)          | (467,359)          |
| 930 Miscellaneous General Expense                | 20,628,426              |                                   |                     | 20,628,426   | 16,124,257         | 304,935           | 4,199,233          |
| 931 Rents  | 11,498,652              |                                   |                     | 11,498,652   | 6,917,126          | 272,829           | 4,308,697          |
| Total Operation                                  | 88,186,919              | 1,427,319                         |                     | 89,614,238   | 59,407,916         | 1,865,990         | 28,340,332         |
| 935 Maintenance of Gen Plant                     | 3,262,706               |                                   |                     | 3,262,706  | 641,465            | 488,802           | 2,132,439          |
| Total Admin & Gen Expense                        | 91,449,625              | 1,427,319                         |                     | 92,876,944   | 60,049,381         | 2,354,792         | 30,472,771         |
| <b>TOTAL OPERATION &amp; MAINTENANCE EXPENSE</b> | <b>574,928,847</b>      | <b>(18,796,719)</b>               |                     | <b>556,132,128</b>   | <b>434,393,221</b> | <b>13,466,871</b> | <b>108,272,036</b> |
| <b>403 Depreciation Expense (P336)</b>           |                         |                                   |                     |  |                    |                   |                    |
| <b>Production</b>                                |                         |                                   |                     |  |                    |                   |                    |
| Steam Production (FERC 310 - 316)                | 33,351,123              |                                   |                     | 33,351,123   | 33,351,123         |                   |                    |
| Nuclear Production (FERC 320 - 325)              | 86,227,370              | 19,972,803                        |                     | 106,200,173  | 106,200,173        |                   |                    |
| Other Production (FERC 340 - 346)                | 634,025                 |                                   |                     | 634,025  | 634,025            |                   |                    |
| Total Production Plant                           | 120,212,518             | 19,972,803                        |                     | 140,185,321  | 140,185,321        |                   |                    |
| <b>Transmission Plant</b>                        |                         |                                   |                     |  |                    |                   |                    |
| 350 Land and Land Rights                         | 0                       |                                   |                     | 0  |                    | 0                 |                    |
| 352 Structures and Improvements                  | 140,451                 |                                   |                     | 140,451  |                    | 140,451           |                    |
| 353 Station Equipment                            | 2,527,165               |                                   |                     | 2,527,165  |                    | 2,527,165         |                    |
| 354 Towers & Fixtures                            | 1,072,809               |                                   |                     | 1,072,809  |                    | 1,072,809         |                    |
| 355 Poles & Fixtures                             | 125,604                 |                                   |                     | 125,604  |                    | 125,604           |                    |
| 356 Ovhd Conductor & Devices                     | 909,008                 |                                   |                     | 909,008  |                    | 909,008           |                    |
| 357 Underground Conduit                          | 458,859                 |                                   |                     | 458,859  |                    | 458,859           |                    |
| 358 Underground Conductors and Devices           | 460,991                 |                                   |                     | 460,991  |                    | 460,991           |                    |
| 359 Roads & Trails                               | 393                     |                                   |                     | 393  |                    | 393               |                    |
| Total Transmission Plant                         | 5,695,280               | 0                                 |                     | 5,695,280  | 0                  | 5,695,280         | 0                  |
| <b>Distribution Plant</b>                        |                         |                                   |                     |  |                    |                   |                    |
| 360 Land & Land Rights                           | 0                       |                                   |                     | 0  |                    |                   | 0                  |
| 361 Structures & Improvement                     | 680,862                 |                                   |                     | 680,862  |                    |                   | 680,862            |
| 362 Station Equipment                            | 7,591,164               |                                   |                     | 7,591,164  |                    |                   | 7,591,164          |
| 363 Storage Battery Equipment                    | 0                       |                                   |                     | 0  |                    |                   | 0                  |
| 364 Poles, Towers, Fixtures*                     | 5,194,751               |                                   |                     | 5,194,751  |                    |                   | 5,194,751          |
| 365 Ovhd Conductor & Devices                     | 3,755,554               |                                   |                     | 3,755,554  |                    |                   | 3,755,554          |
| 366 Underground Conduit                          | 1,090,387               |                                   |                     | 1,090,387  |                    |                   | 1,090,387          |
| 367 Underground Lines                            | 3,130,687               |                                   |                     | 3,130,687  |                    |                   | 3,130,687          |
| 368 Line Transformers                            | 3,602,007               |                                   |                     | 3,602,007  |                    |                   | 3,602,007          |
| 369 Services                                     | 1,383,861               |                                   |                     | 1,383,861  |                    |                   | 1,383,861          |
| 370 Meters                                       | 4,282,205               |                                   |                     | 4,282,205  |                    |                   | 4,282,205          |
| 371 Install on Cust Premises*                    | 2,773                   |                                   |                     | 2,773  |                    |                   | 2,773              |
| 372 Leased Property on Cust Premise              | 0                       |                                   |                     | 0  |                    |                   | 0                  |
| 373 Street Lights & Signal Systems               | 2,015,246               |                                   |                     | 2,015,246  |                    |                   | 2,015,246          |
| Total Distribution Plant                         | 32,729,497              | 0                                 |                     | 32,729,497   | 0                  | 0                 | 32,729,497         |

Yes ← Enter Adjustment Switch ( 'Yes' or 'No' )  
 ( Yes - To Carry Forward Through COSS )

|   | 1,996<br>FERC<br>FORM 1 | Adjustments<br>From<br>Jim Wilson | DE<br>Adjustments | Total Adjustments<br>To Carry Over To<br>FERC (Base Year)<br>Worksheet | Generation   | Transmission | Distribution |
|---|-------------------------|-----------------------------------|-------------------|--|--------------|--------------|--------------|
| <b>General Plant</b>                              |                         |                                   |                   |  |              |              |              |
| 389 Land & Land Rights                            | 0                       |                                   |                   | 0  | 0            | 0            | 0            |
| 390 Structures & Improvements                     | 651,259                 |                                   |                   | 651,259  | 391,772      | 15,452       | 244,035      |
| 391 Office Furniture & Equipment                  | 6,745,110               |                                   |                   | 6,745,110  | 4,057,587    | 160,041      | 2,527,482    |
| 392 Transportation Equipment                      | 0                       |                                   |                   | 0  | 0            | 0            | 0            |
| 393 Stores Equipment                              | 84,506                  |                                   |                   | 84,506   | 50,835       | 2,005        | 31,666       |
| 394 Tools, Shop & Garage Equipment                | 412,750                 |                                   |                   | 412,750  | 248,294      | 9,793        | 154,663      |
| 395 Laboratory Equipment                          | 232,500                 |                                   |                   | 232,500  | 139,863      | 5,517        | 87,121       |
| 396 Power Operated Equipment                      | 0                       |                                   |                   | 0  | 0            | 0            | 0            |
| 397 Communication Equipment                       | 10,812,484              |                                   |                   | 10,812,484   | 6,504,355    | 256,548      | 4,051,581    |
| 398 Misc Equipment                                | 40,168                  |                                   |                   | 40,168   | 24,164       | 954          | 15,051       |
| Subtotal  | 18,978,777              | 0                                 |                   | 18,978,777   | 11,416,869   | 450,310      | 7,111,599    |
| 399 Other Tangible Property                       | 0                       |                                   |                   | 0  | 0            | 0            | 0            |
| Total General Plant                               | 18,978,777              | 0                                 |                   | 18,978,777   | 11,416,869   | 450,310      | 7,111,599    |
| Total Depreciation Expense                        | 177,616,072             | 19,972,803                        |                   | 197,588,875  | 151,602,190  | 6,145,590    | 39,841,096   |
| <b>Amortization Expense (P336)</b>                |                         |                                   |                   |  |              |              |              |
| 404 Amortization of Leasehold Improvements        | 8,193,897               |                                   |                   | 8,193,897  | 4,676,182    | 448,779      | 3,068,936    |
| 405 Amortization of Early Window Costs            | 9,702,476               | (9,702,476)                       |                   | 0  |              |              |              |
| 405 Amortization of Transition Costs              | 0                       | 83,548,333                        |                   | 83,548,333   | 83,548,333   |              |              |
| 406 Amortization of Utility Plant Adjustments     | 353,580                 | (353,580)                         |                   | 0  |              |              |              |
| 407 Amortization of Parry 2 Abandonment Loss      | 8,471,653               | (8,471,653)                       |                   | 0  |              |              |              |
| Total Amortization Expense                        | 26,721,606              | 65,020,624                        |                   | 91,742,230   | 57,682,569   | 1,341,908    | 21,192,333   |
| <b>Taxes (P262)</b>                               |                         |                                   |                   |  |              |              |              |
| 408 Taxes Other Than Income Taxes                 | 84,569,688              | (36,153,777)                      |                   | 44,063,033   | (21,764,574) | (867,691)    | (13,521,512) |
| 409 Federal Income Tax                            | 94,901,767              | (40,506,655)                      |                   | 83,086,183   | 35,917,995   | 474,217      | 7,670,821    |
| 409 State Income Tax                              | 29,130,353              | (1,898,439)                       | (9,917,145)       | 83,086,183   | 65,724,165   | 1,950,630    | 15,411,388   |
| 410 Deferred Income Tax                           | 15,799,927              | 5,215,971                         | (3,144,802)       | 31,201,522   | 24,681,528   | 732,524      | 5,787,470    |
| 410 Deferred State Income Tax                     | 1,235,284               | (42,740,251)                      |                   | (26,940,324)   | (30,241,939) | 370,938      | 2,930,677    |
| 411 Income Tax Deferred in Prior Years            | (36,611,485)            | (220,443)                         |                   | 1,014,841  | 802,776      | 23,826       | 188,240      |
| 411 Amortization of Investment Tax Credits        | (7,838,483)             |                                   |                   | (36,611,485)   | (28,961,004) | (859,535)    | (6,790,946)  |
| 411 Gain From Disposal Of Allowances              | (226,313)               |                                   |                   | (7,838,483)  | (6,200,523)  | (184,026)    | (1,453,935)  |
| Total All Taxes                                   | 180,960,738             | (80,149,817)                      |                   | 100,810,921  | 61,543,976   | 2,503,261    | 23,701,737   |
| <b>Transmission Off-System Sales Loss Revenue</b> |                         |                                   |                   |  |              |              |              |
| Off-System Revenues (P311)                        | (59,149,132)            | 22,649,094                        | 857,283           | (35,642,755)   | (263,231)    |              |              |
| Other Revenues (P300)                             | (38,080,636)            |                                   |                   | (38,080,636)   | (33,177,904) | (2,201,621)  | (14,108,307) |

# COST OF SERVICE STUDY

(Return On Rate Base)

Applicable Tax Rate = 41%  
(.414935)

(1) After Tax Beaver Valley #2 Adjustments

|                 | <u>Capital<br/>Structure</u> |   | <u>Return<br/>(Cost)</u> | <u>Weighted<br/>Cost</u> |
|-----------------|------------------------------|---|--------------------------|--------------------------|
| Debt            | 50.23%                       | X | 8.79%                    | 4.415%                   |
| Common (Equity) | 40.09%                       | X | ####                     | 4.610%                   |
| Preferred       | 9.69%                        | X | 7.45%                    | 0.722%                   |
|                 | <u>100.01%</u>               |   |                          | <u>9.610%</u>            |

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY )  
COMMISSION, ET. AL )  
 )  
V. )  
 )  
DUQUESNE LIGHT COMPANY )  
FOR APPROVAL OF ITS RESTRUCTURING )  
PLAN UNDER SECTION 2806 OF THE )  
PUBLIC UTILITY CODE )

DOCKET NO. R-00974104

DIRECT TESTIMONY  
AND EXHIBITS OF  
RANDALL J. FALKENBERG

RECEIVED  
98 JAN -9 AM 10:43  
P.A.P.U.C.  
PROTHONOTARY'S OFFICE

ON BEHALF OF THE

DUQUESNE INDUSTRIAL INTERVENORS

DOCKETED  
JAN 15 1998

BOC Gases  
General Motors Corp.  
J&L Specialty Steel, Inc.  
LTV Steel Company, Inc.

Nabisco Inc.  
Nova Chemicals, Inc.  
USX Corporation - US Steel Group

DOCUMENT  
FOLDER

J. KENNEDY AND ASSOCIATES, INC.  
ATLANTA, GEORGIA

NOVEMBER 1997

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

|                                   |   |                       |
|-----------------------------------|---|-----------------------|
| PENNSYLVANIA PUBLIC UTILITY       | ) |                       |
| COMMISSION, ET. AL                | ) |                       |
|                                   | ) |                       |
| v.                                | ) |                       |
|                                   | ) |                       |
| DUQUESNE LIGHT COMPANY            | ) | DOCKET NO. R-00974104 |
| FOR APPROVAL OF ITS RESTRUCTURING | ) |                       |
| PLAN UNDER SECTION 2806 OF THE    | ) |                       |
| PUBLIC UTILITY CODE               | ) |                       |

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BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

|                                   |   |                       |
|-----------------------------------|---|-----------------------|
| PENNSYLVANIA PUBLIC UTILITY       | ) |                       |
| COMMISSION, ET. AL                | ) |                       |
|                                   | ) |                       |
| v.                                | ) |                       |
|                                   | ) |                       |
| DUQUESNE LIGHT COMPANY            | ) | DOCKET NO. R-00974104 |
| FOR APPROVAL OF ITS RESTRUCTURING | ) |                       |
| PLAN UNDER SECTION 2806 OF THE    | ) |                       |
| PUBLIC UTILITY CODE               | ) |                       |

**DIRECT TESTIMONY OF RANDALL J. FALKENBERG**

1   **Q.    Please state your name and business address.**

2

3   **A.    Randall J. Falkenberg, Suite 475, 35 Glenlake Parkway, Atlanta, Georgia 30328.**

4

5   **Q.    What is your occupation and by whom are you employed?**

6

7   **A.    I am a utility rate and planning consultant holding the position of Vice President and**  
8           **Principal with the firm of J. Kennedy and Associates, Inc. ("Kennedy and**  
9           **Associates.")**

10

11   **Q.    Please briefly describe the nature of the consulting services provided by Kennedy**  
12           **and Associates.**

1 A. Kennedy and Associates provides consulting services in the electric, gas, and  
2 telephone utility industries. The firm provides expertise in system planning, load  
3 forecasting, financial analysis, cost of service, revenue requirements, and rate design.

1  
2  
3 **I. QUALIFICATIONS**

4  
5 **Q. Please describe your education and professional experience.**

6  
7  
8  
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21  
A. Exhibit No. \_\_\_(RJF-1) describes my education and experience within the utility industry. I have twenty years of experience in the utility industry and have worked for utilities, both as an employee and as a consultant, and as a consultant to major corporations, state and federal government agencies, and public service commissions. I have been directly involved in a number of cases related to the Bath County, Beaver Valley, Brandon Shores, Grand Gulf, Limerick, Millstone, Palo Verde, Perry, River Bend, Rocky Mountain, Susquehanna, Trimble County, Vogtle, and Wilson power plants concerning the topics of plant cancellation, phase-in, CWIP in the rate base, prudence, power system reliability, and economics.

During my employment with Ebasco Services in the late 1970s, I developed probabilistic production cost and reliability models used in studies for twenty utility companies and the Wisconsin Public Service Commission Staff. I personally directed a number of marginal and avoided cost studies performed for compliance with the Public Utility Regulatory Policies Act of 1978 ("PURPA"). At Ebasco, I also participated in a wide variety of consulting projects in the rate, planning, and forecasting areas.

1 In 1982 I accepted the position of Senior Consultant with Energy Management  
2 Associates ("EMA"). At EMA I trained and consulted with planners and financial  
3 analysts at several utilities in applications of the PROMOD III and PROSCREEN II  
4 planning models. In particular, I assisted planners in the application of these models  
5 to analyze revenue requirements and the financial impact of alternative expansion  
6 plans. I also assisted in EMA's educational seminars and trained utility personnel in  
7 revenue requirements analysis, production cost modeling, reliability analysis, and other  
8 techniques of generation planning.

9  
10 Since joining Kennedy and Associates in 1984, I have been responsible for the firm's  
11 work in the areas of generation planning, reliability analysis, and the rate treatment  
12 of new capacity additions. I have presented expert testimony on these and other  
13 matters in more than seventy-five cases before regulatory commissions and courts in  
14 Arkansas, Connecticut, Florida, Georgia, Kentucky, Louisiana, Maryland, Michigan,  
15 Minnesota, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Texas, and  
16 West Virginia. Included in Exhibit No. \_\_\_\_ (RJF-1) is a list of my appearances.

17  
18 **Q. Have you previously appeared before the Pennsylvania Public Utility Commission**  
19 **("PUC") or in proceedings involving utilities operating in both Pennsylvania and**  
20 **other jurisdictions?**

1 A. Yes. I have testified on about twenty previous occasions in cases involving the  
2 electric utilities operating in Pennsylvania and in other jurisdictions (Maryland, West  
3 Virginia and Ohio) in cases involving Pennsylvania companies' affiliate operations.  
4 I also testified in the PUC's Electric Utility Restructuring Investigation (Docket No.  
5 I-940032), in PECO's Application for Securitization (Docket No. R-00973877) and  
6 in the PECO, PP&L and GPU Restructuring proceedings (Docket Nos. R-00973593,  
7 R-00973594 and R-00974008/009 respectively).

8

9 **Q. Your testimony concerns marginal production costs and competitive market**  
10 **prices in Pennsylvania and the surrounding area. Please describe your relevant**  
11 **experience.**

12

13 A. I have performed marginal cost analyses for nearly twenty years. As noted above, I  
14 authored production cost simulation models used by a large number of utilities for  
15 their initial PURPA filings in 1980. This model was used for many years by a  
16 number of Ebasco's clients.

17

18 Since 1982, I have been involved in a wide variety of consulting assignments related  
19 to power system modeling and analysis of the utilities in Pennsylvania and the  
20 surrounding states. From 1982 to 1984, I assisted a number of utilities in the region  
21 with implementation of the PROMOD III and PROSCREEN II planning models. I

1 was involved in this work with training, modeling studies and database development  
2 for Allegheny Power System, Atlantic Electric, Duquesne Light and Indianapolis  
3 Power and Light Company. After joining Kennedy and Associates in 1984, I became  
4 involved in the West Penn Power and Monongahela Power proceedings concerning  
5 Bath County. I also appeared in the Susquehanna II rate cases and testified regarding  
6 the economics of that project. In 1985, I testified concerning the economics of plant  
7 cancellation in the Limerick II investigation. In 1986 and 1989, I testified in the  
8 Philadelphia Electric Company ("PECO") Limerick I and Limerick II rate  
9 proceedings. Also in 1989, I testified in the West Penn Milesburg, et al. proceedings.  
10 In those projects, I modeled the economics or system reliability of each utility. More  
11 recently, I have testified in cases involving APS operating units in Maryland and West  
12 Virginia addressing the economics of proposed Qualifying Facilities' ("QF") contracts.  
13 By virtue of this work, I have examined studies, performed modeling, and conducted  
14 analysis of nearly all of the major Pennsylvania utilities at some time since 1982.

15  
16 **Q. A major focus of your testimony in this proceeding concerns the modeling of a**  
17 **combination of the utilities in the region into a competitive market. Do you**  
18 **have experience related to modeling of production costs and/or market prices**  
19 **resulting from a combination of utilities?**

1 A. Yes. In 1992, I was responsible for modeling of the production cost savings  
2 stemming from the Gulf States Utilities ("GSU")/Entergy merger. In that proceeding,  
3 I examined the fuel and production cost savings resulting from the joint dispatch of  
4 those two utilities. I testified concerning the results of my studies before the  
5 Louisiana Public Service Commission ("LPSC") and the FERC. My conclusion, that  
6 the savings estimated by the applicants were greatly overstated, was instrumental in  
7 the LPSC and FERC adoption of fuel cost "hold-harmless" provisions.

8

9 In addition, I have been involved in many projects over the past two years concerning  
10 the modeling of market prices in various regional power markets. Below I have listed  
11 my major activities:

12

- 13 1. Testimony regarding computer simulation of pool wide dispatch protocols,  
14 market price and market power in a hypothetical Pennsylvania power pool.  
15 (December 1995)
- 16  
17 2. Publication in Public Utilities Fortnightly entitled PoolCo and Market  
18 Dominance related to the New York Power Pool (December 1995) and  
19 authorship of a companion article regarding Direct Access in New York.  
20 (February 1996)
- 21  
22 3. Projection of market prices in PJM under both direct access and/or a power  
23 pool arrangement for (confidential) client due diligence analysis in evaluation  
24 of a QF project. (February 1996)
- 25  
26 4. Detailed Study of Impacts of Retail Access, Market Prices and Stranded Costs  
27 in a Ten-State Southern Region for the Arkansas Electric Energy Consumers.  
28 (July 1997)

- 1           5.     Study of Electric Restructuring Issues for ERCOT: Market Prices, Market  
2           Power and Market Structure for the Office of Public Utility Counsel of Texas  
3           and presentation to Texas State Legislative aids. (November 1996)  
4
- 5           6.     Presentation of Direct Testimony and Exhibits related to market price forecasts  
6           and stranded costs estimates in the recent Philadelphia Electric Company  
7           Securitization docket (Case No. R-00973877 or the "QRO").  
8
- 9           7.     Presentation of Direct Testimony and Exhibits related to market price forecasts  
10          and stranded costs estimates in the recent PECO Energy, Pennsylvania Power  
11          & Light Company and Met-Ed/Penelec Restructuring Proceedings (Case Nos.  
12          R-00973593, R-00973594, R-00974008 and R-00974009).  
13
- 14          8.     Participation as a panelist in the FERC Technical Conference related to  
15          Congestion Pricing in the PJM Restructuring Proceeding (Docket Nos.  
16          OA97-261-000 and ER97-1082-000).

1                                    **II. INTRODUCTION AND SUMMARY**

2

3    **Q.     On whose behalf are you appearing?**

4

5    **A.     I am appearing on behalf of the Duquesne Industrial Intervenors (“DII”). This group**  
6           includes many of the largest customers on the Duquesne Light Company (“DLC”)  
7           system. As such, they have a direct interest in the amount of stranded costs  
8           authorized for recovery in this proceeding.

9

10   **Q.     What is the purpose of this testimony?**

11

12   **A.     I will address issues related to estimates of the market price for generation and the**  
13           resulting market value for DLC’s generation resources. I will also briefly address the  
14           market price analysis performed by Mr. Schnitzer.

15

16   **Q.     Please summarize the conclusions and recommendations of your testimony.**

17

18   **A.     My conclusions and recommendations are as follows:**

19

20           **1.     The PUC should use consistent methods and market price forecast**  
21           **assumptions to compute stranded costs for PECO, PP&L, GPU, WPP and**  
22           **DLC. I am in basic agreement with PECO’s methodology for computing**

1           stranded costs and recommend that it be applied for all utilities in  
2           Pennsylvania.

3           2.     DLC presents no comprehensive market price forecast. The "what-if"  
4           analysis performed by Mr. Schnitzer for the post 2005 period is based on  
5           a simplified and overly optimistic busbar cost analysis. The PUC cannot  
6           reasonably rely on Mr. Schnitzer's prices.

7  
8           3.     I propose that the PUC rely on the Energy Information Administration  
9           ("EIA") fuel price forecast for estimating market prices. I present my own  
10          independent market price and stranded cost forecast for DLC. I estimate  
11          DLC will have stranded costs for generation of \$1.0 billion.

12  
13  
14    Q.     Why should the Commission utilize consistent stranded costs calculation  
15          methodologies and market price assumptions in the PECO, PP&L, GPU, WPP  
16          and DLC restructuring cases?

17  
18    A.     DII believes that the PUC should utilize consistent market price assumptions and  
19          methodologies to compute stranded costs in all cases. While it is likely that some  
20          locational price differentials will exist between ECAR and PJM utilities, certain basic  
21          assumptions, such as the cost of new capacity, should be common to all utilities in  
22          Pennsylvania. The PUC should not allow various utilities to use wildly different  
23          methods and assumptions in computation of market prices.

24  
25          DII further believes that the Commission should adopt the basic PECO methodology  
26          for computing market value as opposed to the DLC proposal. PECO's method is a  
27          true market-oriented approach and computes the "loss" to shareholders based on the

1 difference between the after tax market value of their assets under competition and  
2 book value. The DLC proposal actually performs no specific stranded cost calculation  
3 and leaves the entire question open for the next seven years.

4

5 **Q. Why do you prefer the PECO method of computing the shortfall in plant value**  
6 **rather than DLC's approach?**

7

8 A. Mr. Baron discusses the policy issues as they related to the restructuring legislation and  
9 DLC's proposal. For my part, I point out that the PECO method is intended to  
10 compensate shareholders for the reduction in value of their property. The DLC  
11 method, on the other hand, seeks to largely perpetuate the current static form of  
12 regulation. For this reason, the PECO method is more appropriate for the purposes of  
13 this restructuring proceeding. While DLC claims its method is "market-based," the  
14 only true market-based approach would utilize an asset auction. My modeling using  
15 PECO's method provides the best estimate of the results of a capacity auction.  
16 However, based on the extremely favorable results stemming from Duquesne's recent  
17 sale of Fort Martin Unit 2 and other recent asset sales, DII would prefer Duquesne  
18 auction its assets as GPU is now doing.

1                   **III. ANALYSIS OF DLC AND ECAR MARKET PRICES**

2

3   **Q.    What are the basic elements of market prices for electricity?**

4

5   **A.    Costs for electric generators generally fall into two categories: fixed (or capacity**  
6           **related) and variable (or energy related) costs. For this reason, most analysts assume**  
7           **market prices will also reflect capacity and energy related cost components.**

8

9   **Q.    Are market capacity and energy prices independent?**

10

11   **A.    No. Under competition, suppliers will enter a market when the market prices are**  
12           **sufficient to recover both the capacity and energy cost of a new generator. Under**  
13           **perfect competition, market prices will equal the short run marginal cost of the least**  
14           **efficient resource required to meet the load plus an added premium for service**  
15           **reliability, sometimes called "shortage" or "rationing" costs. In nearly all of the other**  
16           **filings presented in Pennsylvania Restructuring proceedings, the models used by**  
17           **utilities or intervenors have not fully integrated this calculation. The implicit**  
18           **assumption made by all of the experts in the GPU, PP&L and PECO cases was that**  
19           **shortage costs will be sufficient over time to allow for recovery of the cost of new**  
20           **capacity. As a result, the problem has been at least partially separated into an analysis**

1 of market energy prices and capacity prices. In part this is necessary owing to the need  
2 for utilities to maintain reserve margins to provide for service reliability.

3

4 **Q. Does DLC follow any of these conventional approaches to estimate market prices?**

5

6 **A.** No. DLC presents no specific market price forecast for the period 1999 to 2029.

7 Indeed, the Company presents only a stream of possible spot prices and certain "price

8 scenarios" premised on long run marginal costs as estimated by Mr. Schnitzer. DLC

9 attempts to justify this omission on the basis that market prices are too uncertain to be

10 forecasted. I agree that there are certain difficulties in forecasting market electricity

11 prices. However, as economist William Baumol once stated, "The only thing worse

12 than forecasting the future is not forecasting the future!" DLC appears to prefer the

13 "head in the sand" approach to dealing with change. Based on DLC's comments, the

14 Company apparently has no idea of what its assets are now worth. One wonders how

15 DLC was able to decide that the sale of its share of Fort Martin Unit 2 to APS (at a

16 high multiple of book value) was a "good deal."

17

18 **Q. Mr. Schnitzer testifies that a true "market" based evaluation would be superior**

19 **to an administratively determined estimate of stranded costs. Do you agree?**

1 A. Perhaps Mr. Schnitzer has a point. However, current electricity markets are too  
2 immature to provide a realistic assessment of market prices needed for this type of  
3 analysis. A reasonable solution would be for DLC to offer its assets for sale. GPU  
4 has recently decided to do just that. DLC's proposal to use short term contract prices  
5 is really not a reasonable approach because it does not derive a true market value or  
6 stranded cost. It would be equivalent to Mr. Schnitzer determining the "stranded cost"  
7 of his car by running an ad in the classifieds to *rent* it for a few months and then  
8 comparing the best offer to his monthly car payments. In contrast to the low market  
9 prices suggested by recent solicitations (comparable to the above-referenced amateurish  
10 automobile rental scenario), recent asset sales have produced exceptionally good results.  
11 Until DLC is willing to actually put its assets on the block, the claim that market prices  
12 are now low is completely irrelevant. Indeed, the Commission should well recall that  
13 Duquesne sold its share of Fort Martin Unit 2 to APS for a substantial gain. Thus, the  
14 actual market data currently available suggests that Duquesne has not realistically  
15 assessed its stranded costs. In short, DLC has not met anything close to a reasonable  
16 burden of proof.

17

18 **Relevant Energy Market**

19

20 Q. Explain the steps involved in estimation of market energy prices.

1 A. The first step is to determine the relevant energy market. I model ECAR loads and  
2 supply in my approach. DLC does not fully model any supply region.

3

4 While I do not dispute that regions outside of ECAR may have *some* influence on  
5 ECAR market prices, broadening the boundaries of the market to include distant  
6 utilities requires even more data. The quality of data is a problem in this sort of  
7 analysis and I seriously doubt that adding more questionable data to an analysis can  
8 ever improve the validity of the results. However, it is reasonable to include forecasts  
9 of imports and exports of energy from other regions. DLC has not even done this  
10 much.

11

12 **Data Requirements**

13

14 Q. What is the next step in the estimation of market energy prices?

15

16 A. The next step is to perform a production simulation of market energy prices. To do  
17 so, one must simulate the operation of a competitive bid based (rather than regulated  
18 incremental cost based) regional energy market. In short, the model used must  
19 simulate a competitive market, not the heretofore regulated power pools. DLC has  
20 performed no complete long term analysis of market prices in a competitive market.

1 Q. What kind of data is most important in this type of analysis?

2

3 A. Obviously, fuel prices are quite important. Information about the regional fleet of  
4 generation resources such as generator capacities, heat rates, availability statistics, and  
5 maintenance requirements is required. In addition, the demand side (customer energy  
6 demands, average energy and usage patterns, etc.) as well as possible imports or  
7 exports of power from outside the region are important. Finally, a forecast of capacity  
8 additions in the competitive market is also needed. Once again, DLC has failed to  
9 provide a comprehensive (or even minimal) analysis of these factors.

10

11 **Market-based Bidding and Heat Rate Inputs**

12

13 Q. How do you model a competitive bid-based market?

14

15 A. I assume that all generators will bid their output at full load average variable cost into  
16 a "spot" pool. This assumption treats all generators consistently, eliminates the risk of  
17 negative cycles and reasonably approximates the profit maximization strategies in  
18 energy markets that suppliers might be expected to utilize in the absence of market  
19 power. In contrast, DLC has made no integrated analysis of market-based bidding  
20 strategies over the forecast horizon.

1           **Heat Rate Data Quality**

2

3    **Q.    What is your preferred source of heat rate data?**

4

5    **A.**Like most experts, I use the EIA Form 860 full load heat rates. This data presents the  
6           most recent tested full load average heat rates as reported by utility plant owners. As  
7           such, it represents the most realistic and consistent source of data available. While  
8           individual utilities undoubtedly have more detailed data available for their own units,  
9           in most cases they lack similar detailed information for their competitors' generators.

10

11   **Q.    Do you have concerns regarding the heat rates for new generators used by DLC?**

12

13   **A.**Yes. Mr. Schnitzer has used a range of heat rates from 6,365 to 6,625 btu/kWh for a  
14           new combined cycle plant. I believe this entire range is overly optimistic, for it would  
15           not encompass most recently completed units actually operating at this time. Implicit  
16           in this forecast is a speculative assumption about improvements in heat rates in the  
17           future. This assumption gives no consideration to possible new environmental  
18           regulations, plant aging, or even effects of cycling that might degrade future  
19           performance. I use a more realistic and conservative figure of 7,000 btu/kWh.

1 I have researched a number of recently completed projects (PSE&G's Bergen plant,  
2 Delmarva's Hay Road plant, and two built by Florida Power & Light). None of these  
3 plants exhibits a heat rate even this low. In 1995 Bergen operated with a heat rate of  
4 8,089 (and I estimate a full load heat rate of 8,080 from the EIA Form 860). The  
5 Delmarva plant operated in 1995 with a 7,782 btu/kWh heat rate and approximately a  
6 50% capacity factor, while the FP&L plants (which were base loaded) showed an  
7 average heat rate of 7,390 btu/kWh. The FP&L and PSE&G plants are re-powering  
8 projects, an approach which I expect to be appealing to existing utility suppliers with  
9 a large fleet of older power plants.

10  
11 I also recently toured a combined cycle cogeneration project in Florida. I learned that  
12 the heat rate for that facility (a state of the art unit built in 1994, and the most efficient  
13 power plant in Florida) achieved a full load heat rate under the best conditions of 7,200  
14 btu/kWh. Nonetheless, I continue to use the 7,000 btu/kWh figure.

15  
16 **Fuel Price Forecasts**

17  
18 **Q. Do you have any comments regarding the fuel price forecast developed by Mr.**  
19 **Schnitzer?**

1 A. Fuel prices are quite important to this type of analysis and are difficult to predict. It  
2 is worthwhile for the Commission to review the types of forecasts filed by other  
3 utilities in their restructuring proceedings. In its filing, PECO presented two nationally  
4 recognized fuel price forecasts prepared by independent, disinterested organizations.  
5 In this case, Mr. Schnitzer proposes to utilize current forward contract prices to  
6 estimate natural gas prices for the year 2005. He then escalates the 2005 forward  
7 price at his assumed rate of inflation (2.5%) to derive a longer term forecast.

8  
9 Q. Do you agree with this procedure?

10

11 A. Use of current forward contract prices is *one* way that might be used to perform this  
12 sort of analysis. However, it is foolish to assume that forward contract prices will  
13 perform any better than a forecast from any other legitimate source. While one can  
14 obtain a supply of gas now with a guarantee of the contract price at a specific value,  
15 there is no assurance that when the year 2005 arrives, the contract price paid will be  
16 in line with the market.<sup>1</sup> If it is above market, the contract owner will have paid "too  
17 much." If it is below market, the owner will have the opportunity to make windfall  
18 profits. The only thing we can say for sure about a forward contract is that the seller

---

<sup>1</sup> Indeed, above market coal contracts are now legion in the utility industry for precisely this reason.

1 thinks market prices will be lower than contract prices in the future and that the buyer  
2 believes just the opposite.

3

4 Forward contracts and futures markets exist for many commodities. Does anyone care  
5 today what gold futures were selling for in 1987? Indeed, markets can produce prices  
6 that appear irrational at times. Recall the minor "dip" in stock prices that took place  
7 in October 1987 (or October 1997) for a prime example. In the end, a forward  
8 contract has some credibility, in that buyers and sellers are "betting" real money on it.  
9 However, legitimate independent forecasts also are of at least equal merit. I prefer to  
10 rely upon the EIA forecast. One advantage of using a forecast instead of forward  
11 contracts is that commodity contract prices can fluctuate substantially in a brief period  
12 of time.<sup>2</sup> Consequently, I recommend that the Commission rely on a reputable  
13 independent forecast of fuel prices in this proceeding.

14

---

<sup>2</sup> I believe that Mr. Schnitzer should update his results daily for the remainder of this proceeding if he is truly committed to his "market" concept. However, I will not request Mr. Schnitzer do so because his 2005 forecast of gas prices for new combined cycle units does not differ substantially from the EIA based forecast I utilize. For the post 2005 period, Mr. Schnitzer simply *assumes* gas prices will escalate with inflation, while EAI's National Energy Model projects about 1% real growth. Mr. Schnitzer makes no claim of having actual market information after 2005. I believe the EIA forecast is more credible than Mr. Schnitzer's assumption that after 2005 gas prices will simply track inflation.

1           **Market Capacity Prices**

2

3   **Q.    Please explain how you compute market capacity prices.**

4

5   **A.    Overall, I add capacity to meet a 15% reserve margin requirement for ECAR. I**  
6           determine an optimal capacity mix in my ECAR production cost model in order to  
7           equalize the net capacity cost of new combined cycle capacity with the fixed cost of  
8           capacity for a pure peaking plant. If the net cost of a combined cycle ("CC") plant  
9           exceeds the cost of a pure peaking unit, I would simply add pure peaking capacity (oil-  
10          fired CTs) to the regional mix. Otherwise, I add more CC capacity. The DLC method  
11          provides no such complete analysis of future capacity additions.

12

13   **Q.    What do you mean by the net cost of capacity?**

14

15   **A.    The net cost of capacity for a combined cycle plant is the residual of the fixed costs**  
16          of ownership of a new unit less the equivalent cost of pure peaking capacity and any  
17          energy profits. The energy profits are computed by deducting the variable costs of new  
18          combined cycle units from their market energy revenues as determined in my model.

19

20   **Q.    Contrast your approach with Mr. Schnitzer's method.**

1 A. Mr. Schnitzer does not actually ever calculate a specific market price. Rather, he  
2 proposes a range of prices based on a range of long run marginal costs for new market  
3 entry. I agree with the concept that long run marginal cost will ultimately set market  
4 prices. In fact, I have used a comparable approach in other cases where the level of  
5 detail required was lower or where the constraints of the proceeding indicated such an  
6 approach was clearly warranted. However, his analysis may gloss over a number of  
7 problems, such as the choice of an optimal capacity addition, the presence of excess  
8 baseload capacity in ECAR, and the question of where a new combined cycle plant  
9 might fit into the regional mix. While my own modeling is not nearly as complex as  
10 some of those that have been presented in other Pennsylvania Restructuring  
11 proceedings, I believe it does capture a necessary level of detail that is missing in Mr.  
12 Schnitzer's analysis.

13  
14 **Q. Do you believe Mr. Schnitzer's method for developing a range of prices is valid?**

15  
16 A. Mr. Schnitzer's approach is unrealistic. Mr. Schnitzer nominates a range of capacity  
17 prices, heat rates, carrying costs, and etc. He then selects the low and high end of each  
18 variable to derive his low and high prices. There is no reason to assume, however, that  
19 there is any realistic chance that all of the "low" or "high" variables will occur  
20 simultaneously. For example, it is quite unlikely that both the low heat rate and low  
21 capital cost estimates would occur in tandem. In fact, I will demonstrate shortly that

1 capital costs are inversely related to heat rates: the more efficient plants cost more to  
2 build. Thus, the simultaneous selection of all "low" or all "high" values is unrealistic.  
3 Arbitrarily combining the extreme values of all variables does nothing but produce a  
4 meaningless analysis. The wide range in possible prices that Mr. Schnitzer laments  
5 stem mostly from the fact that he has "manufactured" much of the claimed uncertainty  
6 by his combination of extreme values. In addition, even his so called "high" prices  
7 reflect heat rates and capacity cost forecasts that are more properly characterized as  
8 "low", "optimistic", or even "wildly optimistic" estimates. In other words, even Mr.  
9 Schnitzer's "high" prices reflect unreasonably low capacity costs and exceptionally high  
10 efficiency rates for new units.

11  
12 **Q. Are there other factors that are missing from Mr. Schnitzer's analysis?**

13  
14 **A.** Mr. Schnitzer shows no evidence to support his conclusion that new combined cycle  
15 plants will be the most economic capacity addition. He does not determine where such  
16 units will fall into the regional dispatch. He performs no detailed examination of the  
17 need for capacity in the region. He assumes all generators will be paid the same  
18 market prices, regardless of where they appear in the regional dispatch. All of these  
19 factors influence market prices and where possible, should be considered in a more  
20 detailed analysis.

1 Q. What are the key data inputs in such an analysis?

2

3 A. Naturally the capital, O&M and other costs of new CT and combined cycle generation  
4 are the key variables. The differential between these costs is also quite significant  
5 because that will largely determine the optimal mix of new peaking and combined  
6 cycle capacity. In addition, the annual cost of ownership is also quite important. This  
7 is computed from assumptions regarding the cost of capital for non-regulated power  
8 plants, tax rates, depreciation rates, etc. These basically represent the same types of  
9 inputs as one would find in any conventional utility calculation of revenue  
10 requirements, though it is optimistically assumed that in a competitive market  
11 developers will be willing to "back-load" payments and profits. Under conventional  
12 regulation, such payments have always been "front-loaded." This difference in  
13 assumed cost recovery patterns substantially increases the risks of new generation  
14 resources, and should be compensated for with a higher cost of capital.

15

16 Q. Does Mr. Schnitzer make any other assumptions that would obviously bias his  
17 long run marginal cost estimates?

18

19 A. Yes. Mr. Schnitzer assumes a range cost estimate for new combined cycle plants in  
20 the year 2005 of \$395/kW to \$500/kW. These costs for new CCs are extremely  
21 optimistic. In fact, Mr. Schnitzer's figures are by far the most optimistic of any used

1 to date in Pennsylvania Restructuring proceedings, once adjusted to current dollar  
2 values. Based on constant 1996 dollars, and Mr. Schnitzer's assumed 2.5% inflation  
3 rate, the projected range for new CCs is only \$316 to \$400/kW. No other expert has  
4 estimated costs this low. In fact, many estimates for gas-fired combustion turbines  
5 (which are typically cheaper to install) have exceeded Mr. Schnitzer's low range cost  
6 estimate for CCs.

7  
8 **Q. How does the \$316-\$400/kW range for a CC compare to cost estimates used by**  
9 **other experts in recent related proceedings?**

10  
11 **A.** I have consistently used \$595/kW for a combined cycle unit and \$300/kW for a new  
12 oil-fired CT. In the PECO Securitization proceeding, PECO's witness, Dr.  
13 Hieronymus, initially estimated a cost of \$655/kW for a CC and \$360/kW for a gas-  
14 fired CT. While Dr. Hieronymus did initially reduce his cost estimates in the PECO  
15 restructuring (to \$519/kW), it is my understanding that in producing his rebuttal  
16 testimony, Dr. Hieronymus once again increased his CC and CT cost estimates.  
17 Further, in the PECO case, another PECO witness, Mr. Bustard, estimated a cost of  
18 \$625/kW for new combined cycle plants. In the PP&L case, PP&L's witness, Dr.  
19 Jones, assumed that new combined cycle plants would cost \$595/kW and new gas-fired  
20 CTs would cost \$338/kW in his EGEAS simulations. Finally, in the GPU case, GPU's  
21 witness, Mr. Roberts, estimated that new CC's would cost \$490/kW while a dual-fuel

1 CT would cost \$350/kW. None of these figures approach the low levels assumed by  
2 Mr. Schnitzer for new CCs.

3

4 **Q. Did Mr. Schnitzer provide compelling documentation supporting these optimistic**  
5 **assumptions for new plants?**

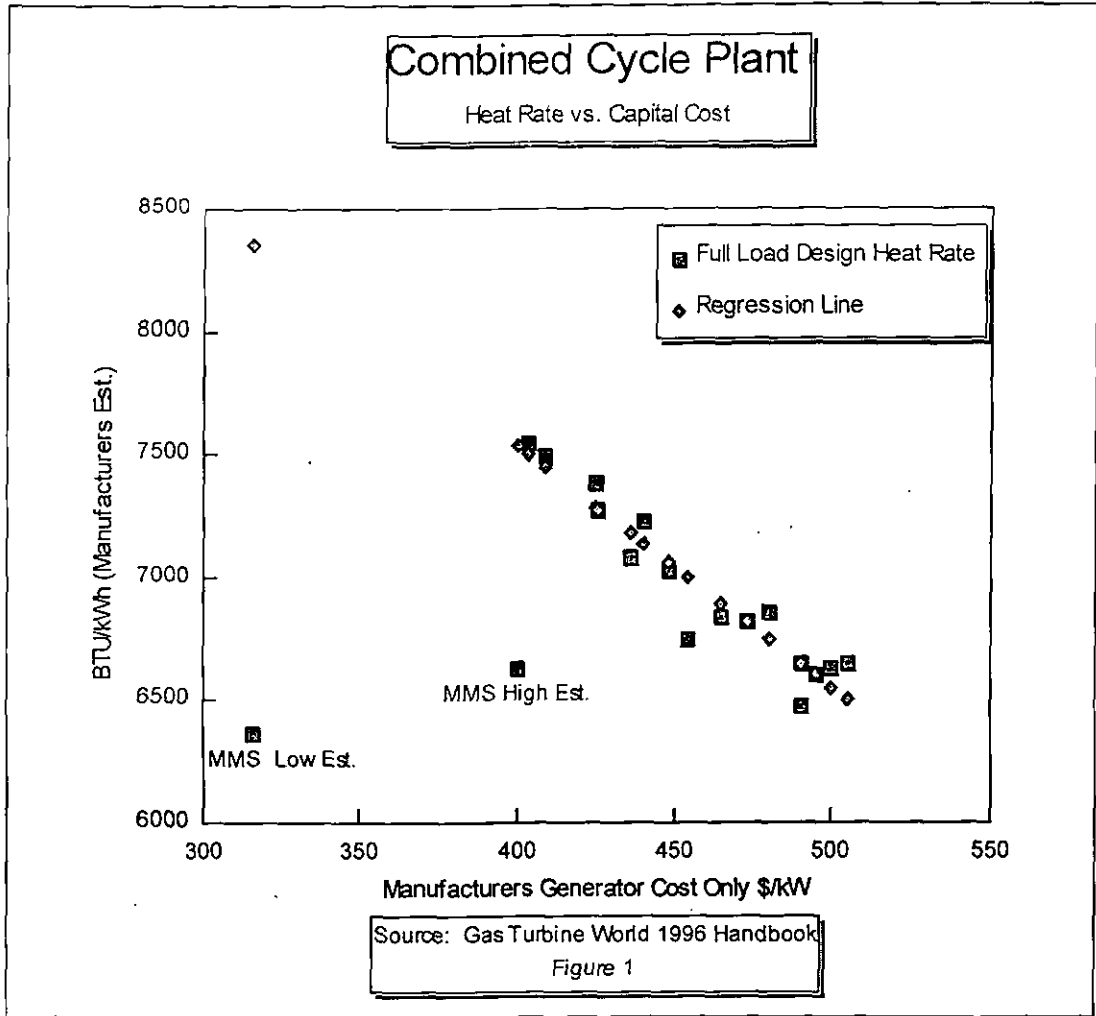
6

7 A. No. In the response to OCA-III-20, supporting documentation was provided for  
8 combined cycle assumptions. However, this "support" amounts to various publications  
9 in the trade press discussing announced costs for certain projects and certain  
10 manufacturers data. Such information is vague and difficult to interpret to say the very  
11 least. For example, if it is announced that a 500-mW plant is being built for \$200  
12 million, one is lead to assume that this implies a cost of \$400/kW. However, it is left  
13 unstated whether the \$200 million figure represents all costs including infrastructure,  
14 financing, utility connections, engineering fees, land, legal fees, escalation, and etc.  
15 In fact, we do not even know if the capacity figures cited represent ISO (59-degree)  
16 ratings, or summer ratings. A 500-MW plant may only provide 450 mW at the time  
17 of the summer peak. In addition, the reported figures are nothing more than estimates  
18 themselves and we do not know if the final cost will meet the announced budget.  
19 Indeed, the developers of such projects have good reasons *not* to reveal accurate project  
20 costs to their competitors.

1 Q. Did Mr. Schnitzer provide any more specific source data that supports your  
2 contention that his cost estimates are unrealistic?

3 A. Yes. Mr. Schnitzer provides pages from the Gas Turbine World ("GTW")1996  
4 Handbook as support for his combined cycle assumptions (such as the estimate of a  
5 6,600 BTU/kWh heat rate and \$316 to 400/kW capital costs). However, Mr.  
6 Schnitzer's figures appear to be totally inconsistent with the GTW publication. Figure  
7 1, below, shows the actual relationship between heat rates and the direct generator-only  
8 costs for the plants contained in the Gas Turbine World 1996 Handbook. As pointed  
9 out earlier, the more efficient plants cost more to build. This figure demonstrates that  
10 Mr. Schnitzer has selected unrealistically optimistic figures for both capital costs and  
11 heat rates. His only justification for these assumptions is apparently his speculative  
12 belief that post-2000 time frame improvements will both increase plant efficiencies and  
13 decrease capital costs substantially.

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Q. Heat rates for new gas turbine based generators have improved over time. Is there reason to expect that the historical improvement trend will not continue?

1 A. No trend persists forever. As technologies mature, efficiency gains become harder to  
2 achieve. Steam power plant efficiencies have improved little in the past 30 years. For  
3 example, in 1962 PECO's Eddystone plant was the most efficient power plant in the  
4 U.S. It had a full load heat rate of 8,588 btu/kWh. While Eddystone now has a heat  
5 rate in excess of 10,000 btu/kWh, few steam plants today have heat rates below 9,000  
6 and I know of none below 8,000 btu/kWh. If Eddystone could still operate at its 1962  
7 heat rate, it would be one of the most efficient steam plants in the U.S. Changes in  
8 environmental regulations, other factors, and the maturation of the technology have  
9 produced little efficiency gains for steam plants in the past 30 years. Plant aging, on  
10 the other hand, has actually reduced efficiencies in some cases.

11

12 Given the improvements in heat rates already experienced in combustion turbine and  
13 combined cycle generators, it is probable that future efficiency gains will also be  
14 difficult to achieve. In addition, some of the ingredients that have fostered improved  
15 efficiencies in gas turbine technology (notably high fuel prices and perhaps even large  
16 military expenditures on jet engine technology) may no longer exist. When fuel prices  
17 are high (or expected to be high) efficiency gains are economic. However, under the  
18 very low fuel price forecasts now expected by Mr. Schnitzer and others it is hard to  
19 see why developers will be willing to pay more for improved efficiency in the future.<sup>3</sup>

---

<sup>3</sup> At one time, fuel efficient cars were in high demand. Now, after years of stable gas prices, consumers have become far less concerned about mileage estimates.

1 Efficiency gains do not "just happen." They result when economic factors make them  
2 profitable. All of this suggests that future heat rate gains in combined cycle and  
3 combustion turbine technologies are highly speculative at best and contra-indicated by  
4 low fuel prices.

5

6 **Q. Does the Gas Turbine World 1996 Handbook provide additional insights into**  
7 **problems with Mr. Schnitzer's cost estimates for combined cycle plants?**

8

9 **A.** Yes. The publication points out in a number of instances that the cost figures  
10 presented exclude many items and represent nothing but the most basic combined cycle  
11 plant equipment costs. None of the figures shown in Figure 1 even reflect all relevant  
12 costs. I will quote below a number of significant passages:

13

14 **"These are average turnkey plant prices, reflecting the median of the price**  
15 **range for a 'no-frills' plant."**

16

17 **"Remember, that these \$ figures are designed for scoping and preliminary**  
18 **project assessment. They are not 'nailed down' numbers that you will**  
19 **actually end up paying for a new combined cycle. There are simply too**  
20 **many options and variable to attempt that."**

21

22 **"No catalytic converters for NO<sub>x</sub> or CO reduction. Minimum exhaust**  
23 **stack."**

24

25 **"Does not include electrical substation or switchyard or a pipeline to bring**  
26 **in gas fuel, or storage or treatment for liquid (if dual fuel). Administrative**  
27 **offices, workshops or storage building not included. No black start**  
28 **generator sets. Minimal operational spares."**

1                   “For example, construction costs can vary dramatically as a function of  
2 labor rates at different site locations.”  
3

4                   “Also affecting prices is overproduction at the gas turbine and steam  
5 turbine OEMs. Series-produced, inventoried machines are being offered  
6 at bargain basement prices to clear shelves.”  
7

8                   “These turnkey plant price levels, as noted, are for ‘plain vanilla’ plant  
9 equipment and services. Extended site work such as cogeneration process,  
10 steam or utility plant tie-ins are not covered, nor are extensive building,  
11 nor a large inventory of operational spares such as combustor baskets,  
12 blades and vanes, etc.”  
13

14                   “Also not included are the indirect or so-called ‘soft costs’ that can  
15 significantly increase the overall project costs.”  
16

17                   “These soft costs would include interest during construction, financing and  
18 legal fee, licensing, permitting, insurance and bonding, workman’s  
19 compensation, sales tax, extensive inland freight, owners costs and  
20 overhead, and, finally, project contingency funds.” (Gas Turbine World  
21 1996 Handbook, pages 1-12 to 1-18)  
22

23                   Based on these passages, I see no way that Mr. Schnitzer’s cost estimate could possibly  
24 include all of the above-referenced costs. These are obvious, costly, omissions in Mr.  
25 Schnitzer’s analysis. Further, the current oversupply of turbines referenced above  
26 could not be expected to last for the next 30 years. In sum, it appears that Mr.  
27 Schnitzer has made some totally unrealistic assumptions in his derivation of the  
28 combined cycle unit heat rates and capital costs that are not supported in his own  
29 source documents.

1 Q. Have there been any recent reports of reliability problems with new combined  
2 cycle or combustion turbine plants that give cause for concern?

3  
4 A. Yes. The August 12, 1996 Electric Utility Week presents an article that discusses  
5 serious problems with advanced combined-cycle and combustion turbine units that have  
6 become a major concern with owners, investors and insurers. According to this article,  
7 more than a half-dozen major failures are known and General Electric has indicated  
8 that some 70 of its machines (many not yet installed) required repair and overhaul in  
9 the past two years. The article further discusses plant explosions, litigation and  
10 increases in the cost of insurance and financing. Insurers are reported to have major  
11 concerns about the size and complexity of these newer turbines, and some insurers have  
12 left the market.

13  
14 Q. Does this mean you lack confidence in new combined cycle or combustion turbine  
15 technology?

16  
17 A. No. I expect that these types of problems will be resolved eventually. However, I am  
18 quite skeptical about the extremely optimistic assumptions being made regarding the  
19 reliability, O&M costs, and maintenance requirements of these large and highly  
20 complex new machines. What I find to be truly interesting is the fact that many utility  
21 industry experts (including Mr. Schnitzer) have been quick to assume (or point out) the

1 recently reported reductions in capital cost estimates for such plants, while ignoring the  
2 recent spate of reliability problems.

1        **IV. INDEPENDENT ESTIMATES OF DLC GENERATION STRANDED COST**

2  
3        **Q.**     What is the purpose of this section of your testimony?

4  
5        **A.**     DLC has presented no comprehensive market price analysis. The limited "what-if"  
6            analysis of market prices performed by Mr. Schnitzer is seriously flawed. For this  
7            reason, I present a totally independent market price forecast. I will do so using my  
8            own models and the EIA fuel price forecast. Using this price forecast, I then compute  
9            my own estimate of DLC stranded costs.

10  
11        **Independent Modeling of Market Prices and Stranded Costs**

12  
13        **Q.**     **How have you modeled ECAR market prices?**

14  
15        **A.**     I have used my own production costing models to simulate ECAR market prices. I  
16            have independently assembled all of the data required for this simulation from publicly  
17            available data sources. Rather than clutter my analysis with numerous undocumented,  
18            ad-hoc adjustments, I have preferred to adhere to the figures published in the original  
19            source documents.

20  
21        **Q.**     **Please discuss the models employed in your analysis.**

1 A. My analysis rests on two basic models: a Probabilistic market price simulation model  
2 and a Monte Carlo pumped storage simulation model. These models provide the basic  
3 simulation results for my studies. I will refer to these models as the "Probabilistic"  
4 model and the "Monte Carlo" model.

5  
6 **Q. Please describe what you mean by a probabilistic modeling.**

7  
8 A. Random forced outages of large generating units can result in substantial increases in  
9 marginal generation costs as higher cost intermediate and peaking units are dispatched  
10 to serve load. A probabilistic simulation computes the expected value of production  
11 costs (both total and marginal costs) by computing the probability weighted average  
12 of all possible generator outages. The methodology used to calculate probabilistic  
13 production cost results are described in technical publications.<sup>4</sup> A Monte Carlo  
14 simulation performs the same calculation by developing a series of simulations of a  
15 large number of possible outage states and computes the average result from these  
16 trials. Both techniques can be equally accurate. Probabilistic techniques are  
17 computationally more efficient, but generally require creation of a load duration curve  
18 and therefore lose the chronological character of the system dispatch that is more  
19 important for modeling of pumped storage, for example. Monte Carlo techniques are

---

<sup>4</sup> Power System Simulation Based on Probability Analysis: RR Booth, presented for publication to the IEEE Power Committee, April 29, 1970 describes the concept.

1 not as efficient, and the operation of individual steam plants is more difficult to  
2 capture. In my simulations, I use the Probabilistic model to compute revenues and  
3 market prices for all plants except pumped storage units for which I use the Monte  
4 Carlo model.

5

6 **Q. Can you illustrate the difference between a probabilistic calculation and a Monte**  
7 **Carlo simulation?**

8

9 A. I'll provide a simple example of how each of these techniques work. Assume you  
10 wanted to find out the expected value of one roll of the die. You could perform a  
11 probabilistic calculation by summing the possible outcome of each roll of the die (one  
12 through six) times the probability of each outcome (one-sixth). For a "fair" die the  
13 result would be 3.5. A Monte Carlo simulation would roll the die a large number of  
14 times and simply average the results. Once again, with a fair die the result would tend  
15 toward 3.5 as the number of rolls increases. By making enough rolls you could get as  
16 close as desired to the "correct" answer.

17

18 **Q. What determines the best approach to be used for a given problem?**

19

20 A. That is based on the nature of the problem. For the simple die example above, it  
21 would obviously be easier to perform a probability calculation. However, in more

1 complex problems (such as more complex games where results from one-roll impacts  
2 outcomes on later rolls) a Monte Carlo simulation can be much easier to implement.  
3 For my modeling, the probabilistic approach is the most efficient for all but pumped  
4 storage plants.

5  
6 **Q. Have you used these models previously in regulatory proceedings or consulting**  
7 **projects?**

8  
9 A. Yes. The Probabilistic model contains the probabilistic production cost engine that I  
10 have used in numerous regulatory proceedings before a variety of Commissions since  
11 1984. I most recently applied this model in preparation of my testimony in the  
12 Commission's Investigation on Restructuring in 1995, where I used it to simulate a  
13 hypothetical Pennsylvania spot energy market, and in the PUC's restructuring  
14 proceedings involving the PJM utilities in the Commonwealth (PECO, PP&L and  
15 GPU). Exhibit No. \_\_\_(RJF-2) is a summary of regulatory proceedings in which I have  
16 used the model in the past and a list of comparison studies I performed to  
17 "benchmark"<sup>5</sup> this model with a comparable utility company model. I have  
18 successfully benchmarked this model with nearly every major utility production cost  
19 model in use in the industry today, including PROMOD III, PROSCREEN, EGEAS,

---

<sup>5</sup> A benchmark is a comparison of results of different models for a specific set of output variables.

1 UPM and several others. The production costing engine used in this system allows for  
2 a highly variable level of detail. I have found that by increasing the level of detail in  
3 the input data to that comparable with the most significant assumptions used by the  
4 utility model, I am able to replicate the results of far more detailed models. For  
5 example, in the current PECO proceeding I demonstrated the ability of the model to  
6 reasonably replicate the results of the GE MAPS program as implemented by Dr.  
7 Hieronymus, the PMDAM model used by Mr. Bustard, and the IPM model used by  
8 Dr. Venkateshwara.

9  
10 **Q. How does this replication of results between models assist the analyst and the**  
11 **Commission?**

12  
13 **A.** In two ways: first, it enables one to maintain confidence in a model if its results track  
14 those of comparable models. Second, it provides a powerful diagnostic tool. By  
15 replicating the results of the various models in use, I am sometimes able to determine  
16 the significance of various assumptions used in other models.

17  
18 **Q. Please describe the Monte Carlo model.**

19  
20 **A.** This program models the economics of pumped storage plants using a probabilistic  
21 (Monte Carlo) technique and the same data base as the basic probabilistic model, but

1 with a higher level of detail. The model enables one to estimate hourly marginal costs  
2 for a given region. It then makes the economic determination of whether to utilize a  
3 pumped storage unit on a given day based on the ability to offset high cost generation  
4 during peak hours with lower cost energy (recognizing pumping losses) during the off-  
5 peak period. The model maintains the chronology of daily loads and enables a more  
6 realistic modeling of pumped storage plants than other resources. The model outputs  
7 are then used to develop an input load shape for the Probabilistic model and provides  
8 estimates of the profitability of pumped storage plants.

9  
10 **Q. How do you define the regional energy market in your analysis?**

11  
12 **A.** I limited my modeling to specific loads and resources to the ECAR region. The ECAR  
13 region is quite large and there is ample reason to believe it is appropriate to confine  
14 the review to ECAR alone as discussed earlier. While it is expected (and indeed  
15 demonstrated by my own modeling) that PJM will have higher market prices than  
16 ECAR, transmission constraints limit the possible flow of power into that market.  
17 Further, my modeling of markets in the Southern U.S. for other projects indicates  
18 higher prices may prevail in that area as well.

19  
20 **Q. Did you model transmission constraints within ECAR?**

1 A. No. As a result, my modeling projects the most efficient generation dispatch possible.  
2 Most market price studies I have reviewed demonstrate that over time locational price  
3 differentials will be minimized because the long run marginal cost of new generation  
4 does not demonstrate wide regional variations. Note that Mr. Schnitzer's market price  
5 analysis provides no analysis of transmission constraints either.

6  
7 **Q. What are the data requirements for your modeling?**

8  
9 A. My modeling considers the same types of data as required in conventional utility  
10 production cost simulations: hourly load shapes; peak demands and energy forecasts;  
11 unit capacities; equivalent forced outage rates and plant maintenance requirements;  
12 maintenance schedule information; generator fuel types, prices, and escalation rates;  
13 heat rates; and operating constraints, if applicable. In addition, I require data for non-  
14 utility generators, imports and exports from other regions. Finally, my model utilizes  
15 data regarding changes in unit ratings, retirements and additions.

16  
17 **Q. Please describe the data sources you relied upon.**

18  
19 A. I obtained the necessary data from publicly available sources as shown on Table 1.

Table 1

| Date Requirement:            | Source                              |
|------------------------------|-------------------------------------|
| 8760 Hourly Loads            | 1995 FERC Form 714 for ECAR         |
| Load Forecast                | 1996 ECAR Form OE-411               |
| Unit Availability Data       | 1992-1996 NERC GADS                 |
| Seasonal Unit Capacities     | 1995/96/97 ECAR Form OE-411         |
| Unit Heat Rates              | 1995 EIA Form 860                   |
| Unit Base Fuel Cost          | 1995 FERC Form 423, FERC Form 1     |
| Unit Capacity Changes        | 1995/96/97 ECAR Form OE-411         |
| Fuel Price Escalation Rates  | EIA Annual Energy Outlook 1997      |
| Unit Fuel Type               | ECAR Forms OE-411, FERC Form 1      |
| Non Utility Generators       | 1996 ECAR Form OE-411               |
| Maintenance Avoided Periods  | Analysis of Seasonal Marginal Costs |
| Regional Imports and Exports | 1996 ECAR Form OE-411               |

16 Q. How many generators did you model in ECAR?

1 A. I modeled more than 600 individual generators in addition to the pumped storage plants  
2 in the region and a large number of capacity additions, IPP's, exports and imports.

3

4 **Q. Do the sources listed above provide all of your data requirements?**

5

6 A. Virtually all of the data I require came from these sources. In very few cases (such  
7 as hydro plants for example) some of the data I used came from other sources. For  
8 some of the smaller generators owned by public power agencies in ECAR, I estimated  
9 fuel prices based on average prices for other plants in the region. Likewise, in a few  
10 cases where data was not reported in the Form 860, I estimated heat rates from other  
11 sources.

12

13 **Q. Did you make any other adjustments to this data?**

14

15 A. For all practical purposes the answer is no. My intention was to only change data from  
16 these sources when the original source data was clearly wrong or inappropriate for the  
17 model. I did take steps to verify the data from the sources used, and in a few cases  
18 where it could be confirmed that the reported data was in error, I obtained more correct  
19 data.

20

21 **Q. How did you determine the most economic mix of new generators?**

1 A. I assumed that new CTs would be the most economic capacity choice in ECAR and  
2 added this type of capacity to meet an assumed reserve margin requirement of 15%.  
3 However, I modeled a 50 mW combined cycle plant in the mix. If the incremental  
4 capital cost of a combined cycle plant over a CT was profitable, I replaced some CT  
5 generation with CC units. For the most part, owing to the low energy prices in  
6 ECAR, CTs were the most economic capacity choice.

7

8 **Q. How did you verify the accuracy of your model?**

9

10 A. I decided that the best approach would be to benchmark the model against other  
11 models used in Pennsylvania Restructuring proceedings. The PECO models were  
12 selected because they utilized a range of modeling techniques and used differing fuel  
13 price, capacity addition and load forecast data. To perform this analysis I first  
14 developed a single database using data common to all three PECO models and my own  
15 market price studies. I then derived input assumptions for the most critical differences  
16 between the assumptions of the three PECO experts. I then attempted to reproduce the  
17 results of their modeling studies.

18

19 **Q. What are the results of these simulations?**

1 A. I was able to track the forecasts of market prices of the PHB, EDS and ICF models  
2 reasonably well. Exhibit No. \_\_\_(RJF-3) summarizes the results of this comparison  
3 and indeed demonstrates that I am able to use a single model and generator database  
4 (with only limited input changes) to predict the results of the other experts' models.  
5

6 **Q. Do you believe these results indicate general agreement between your model and**  
7 **the PECO models when comparable assumptions are used?**  
8

9 A. Yes. I am satisfied with these results, but chose not to totally refine these simulations  
10 because I was more interested in performing market price simulations than comparisons  
11 to models that are using erroneous data. I am convinced that resolving any differences  
12 that remain between these models would not significantly change the results.  
13

14 **Q. Let's turn now to your own assumptions. First of all, you have been fairly clear**  
15 **that the most crucial assumptions relate to the cost of new generators. What were**  
16 **your assumptions?**  
17

18 A. I estimated the cost for a new combined cycle plant of \$595/kW. I also assumed a cost  
19 of \$300/kW for a new oil-fired CT. I did not model gas-fired or dual-fuel CTs.  
20 However, I have no reason to dispute that the cost of such units would be in the range

1 of \$338 (for gas units as estimated by PP&L in its restructuring case) to \$350/kW (for  
2 a dual-fueled unit as estimated by GPU in its restructuring case).

3

4 **Q. Please describe the evidence that you rely on to support your decision to reject**  
5 **Mr. Schnitzer's cost estimate for a new combined cycle plant.**

6

7 **A.** I have examined a great number of sources of plant costs, actual historical data, and  
8 other experts' estimates. From this analysis I have estimated the total capital cost of  
9 a new combined cycle plant to be \$595/kW, and a new oil-fired combustion turbine to  
10 be \$300/kW. I do consider both of these costs optimistic.

11

12 Like Mr. Schnitzer, I also examined the 1996 Gas Turbine World Handbook. The data  
13 I examined depicts a relationship between plant heat rates and capital costs: more  
14 efficient plants cost more per kW. Figure No. 1, referenced earlier, shows the actual  
15 relationship between heat rate and the direct cost of generators for plants contained in  
16 the Gas Turbine World publication. Based on these figures, I believe a midrange cost  
17 would be approximately \$500/kW for a unit with a heat rate of a little over 7,000  
18 btu/kWh. However, as previously discussed, these figures exclude a number of  
19 important costs that add substantially to the cost of new generators.

1       The items excluded are obviously quite significant. It has been estimated in both the  
2       PECO and West Penn Power cases that the land, gas pipeline costs, and utility tie-ins  
3       will amount to approximately \$50/kW. Based on my review, this estimate is very  
4       optimistic, particularly considering gas pipeline costs. In addition, interest during  
5       construction, contingencies, and the other costs excluded would be significant. It could  
6       easily take two to three years or more to site, license, finance, construct and test a  
7       project. Even assuming minimal short term interest rates of 5%, interest alone could  
8       add 10-15% to the total project cost. Further, the current oversupply of turbines  
9       referenced above could not be expected to last for the next 30 years. In the end, I  
10      believe that these figures support a total plant cost of at least the \$595/kW, identical  
11      to the level estimated by PP&L in its restructuring case. This estimate provides a more  
12      reasonable allowance for all costs including the above-listed excluded costs such as  
13      pipeline costs, utility tie-ins, interest during construction, legal fees, siting, licensing,  
14      project contingencies, more normal market conditions, and etc. This estimate  
15      represents a "plain vanilla" cost only and does not provide an allowance for the extra  
16      redundancies and operational spares needed to insure availabilities in excess of the  
17      levels achieved by normal utility plants.

18

19    **Q.    What capital cost did you assume for combustion turbines?**

1 A. As discussed earlier, I used \$300/kW as my capital cost estimate for a new oil-fired  
2 CT. Once again this is based on consideration of the GTW data with sufficient  
3 additions for the excluded costs.

4  
5 **Q. What real fixed charge rate did you assume?**

6  
7 A. For combustion turbines I assumed a 13.34% rate. For combined cycle plants I am  
8 concerned that the longer lead times and higher capital costs of such plants, plus the  
9 far greater susceptibility to inflation and fuel price swings makes these riskier  
10 endeavors, particularly to the extent that fuel cost savings are needed to repay the  
11 added capital costs. However, I still used the same 13.34% real fixed charge rate.  
12 This figure falls within the range of real fixed charge rates assumed by PECO's experts  
13 in the current restructuring proceeding and in the recently completed QRO proceeding,  
14 after certain errors and omissions in their estimates were corrected. Exhibit  
15 No.\_\_(RJF-4) provides my calculation of the real fixed charge rate.

16  
17 **Q. Are there any other adjustments to your market value calculation?**

18  
19 A. Yes. As discussed by Mr. Kollen, I have excluded fossil decommissioning expenses.  
20 Likewise, I did not include decommissioning costs for new capacity resources.

1 Q. Please describe the results of your analysis.

2

3 A. Exhibit No. \_\_\_\_ (RJF-5) summarizes my estimate of market prices and DLC's stranded  
4 generation costs under the EIA fuel price forecast. For DLC I estimate a total stranded  
5 generation cost of \$1.0 billion.

6

7 Q. Why do the market prices shown in Exhibit No. \_\_\_\_ (RJF-5c), page 3 of 4, vary by  
8 plant?

9

10 A. Each plant enters the dispatch sequence at a different time. Units with low fuel costs  
11 (such as nuclear plants) will run all hours they are available. Higher cost coal or oil  
12 plants would run only when market prices are high enough so that they may operate  
13 at a profit. Thus, units with higher fuel costs will have higher average prices but will  
14 have lower capacity factors.

15

16 Q. Does this conclude your testimony?

17

18 A. Yes.

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY )  
COMMISSION, ET. AL )

V. )

DUQUESNE LIGHT COMPANY )  
FOR APPROVAL OF ITS RESTRUCTURING )  
PLAN UNDER SECTION 2806 OF THE )  
PUBLIC UTILITY CODE )

DOCKET NO. R-00974104

EXHIBITS OF  
RANDALL J. FALKENBERG

ON BEHALF OF THE

DUQUESNE INDUSTRIAL INTERVENORS

BOC Gases  
General Motors Corp.  
J&L Specialty Steel, Inc.  
LTV Steel Company, Inc.

Nabisco Inc.  
Nova Chemicals, Inc.  
USX Corporation - US Steel Group

J. KENNEDY AND ASSOCIATES, INC.  
ATLANTA, GEORGIA

NOVEMBER 1997

## QUALIFICATIONS OF RANDALL J. FALKENBERG, VICE PRESIDENT

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### EDUCATIONAL BACKGROUND

I received my Bachelor of Science degree with Honors in Physics and a minor in mathematics from Indiana University. I received a Master of Science degree in Physics from the University of Minnesota. My thesis research was in nuclear theory. At Minnesota I also did graduate work in engineering economics and econometrics. I have completed advanced study in power system reliability analysis.

### PROFESSIONAL EXPERIENCE

After graduating from the University of Minnesota in 1977, I was employed by Minnesota Power as a Rate Engineer. I designed and coordinated the Company's first load research program. I also performed load studies used in cost-of-service studies and assisted in rate design activities.

In 1978, I accepted the position of Research Analyst in the Marketing and Rates department of Puget Sound Power and Light Company. In that position, I prepared the two-year sales and revenue forecasts used in the Company's budgeting activities and developed methods to perform both near- and long-term load forecasting studies.

In 1979, I accepted the position of Consultant in the Utility Rate Department of Ebasco Service Inc. In 1980, I was promoted to Senior Consultant in the Energy Management Services Department. At Ebasco I performed and assisted in numerous studies in the areas of cost of service, load research, and utility planning. In particular, I was involved in studies concerning analysis of excess capacity, evaluation of the planning activities of a major utility on behalf of its public service commission, development of a methodology for computing avoided costs and cogeneration rates, long-term electricity price forecasts, and cost allocation studies.

At Ebasco, I specialized in the development of computer models used to simulate utility production costs, system reliability, and load patterns. I was the principal author of production costing software used by eighteen utility clients and public service commissions for evaluation of marginal costs, avoided costs and production costing analysis. I assisted over a dozen utilities in the performance of marginal and avoided cost studies related to the PURPA of 1978. In this capacity, I worked with utility planners and rate specialists in quantifying the rate and cost impact of generation expansion alternatives. This activity included estimating carrying costs, O&M expenses, and capital cost estimates for future generation.

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J. KENNEDY AND ASSOCIATES, INC.

## **QUALIFICATIONS OF RANDALL J. FALKENBERG, VICE PRESIDENT**

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In 1982 I accepted the position of Senior Consultant with Energy Management Associates, Inc. and was promoted to Lead Consultant in June 1983. At EMA I trained and consulted with planners and financial analysts at several utilities in applications of the PROMOD and PROSCREEN planning models. I assisted planners in applications of these models to the preparation of studies evaluating the revenue requirements and financial impact of generation expansion alternatives, alternate load growth patterns and alternate regulatory treatments of new baseload generation. I also assisted in EMA's educational seminars where utility personnel were trained in aspects of production cost modeling and other modern techniques of generation planning.

I became a Principal in Kennedy and Associates in 1984. Since then I have performed numerous economic studies and analyses of the expansion plans of several utilities. I have testified on several occasions regarding plant cancellation, power system reliability, phase-in of new generating plants, and the proper rate treatment of new generating capacity.

### **PAPERS AND PRESENTATIONS**

**Mid-America Regulatory Commissioners Conference - June 1984: "Nuclear Plant Rate Shock - Is Phase-In the Answer"**

**Electric Consumers Resource Council - Annual Seminar, September 1986: "Rate Shock, Excess Capacity and Phase-in"**

**The Metallurgical Society - Annual Convention, February 1987: "The Impact of Electric Pricing Trends on the Aluminum Industry"**

**Public Utilities Fortnightly - "Future Electricity Supply Adequacy: The Sky Is Not Falling" What Others Think, January 5, 1989 Issue**

**Public Utilities Fortnightly - "PoolCo and Market Dominance" December 7, 1995 Issue**

Expert Testimony Appearances  
of  
Randall J. Falkenberg  
As of Fall 1997

| Date  | Case          | Jurisdct. | Party  | Utility                        | Subject  |
|-------|---------------|-----------|--|--------------------------------|--|
| 3/84  | 8924          | KY        | Airco Carbide                                    | Louisville Gas & Electric      | CWIP in rate base.   |
| 5/84  | 830470-EI     | FL        | Florida Industrial Power Users Group             | Fla. Power Corp.               | Phase-in of coal unit, fuel savings basis, cost allocation.                            |
| 10/84 | 89-07-R       | CT        | Connecticut Ind. Energy Consumers                | Connecticut Light & Power      | Excess capacity.   |
| 11/84 | R-842651      | PA        | Lehigh Valley Power Committee                    | Pennsylvania Power & Light Co. | Phase-in of nuclear unit.  |
| 2/85  | I-840381      | PA        | Phila. Area Ind. Energy Users' Group             | Philadelphia Electric Co.      | Economics of cancellation of nuclear generating units.                                 |
| 3/85  | Case No. 9243 | KY        | Kentucky Industrial Utility Consumers            | Louisville Gas & Electric Co.  | Economics of cancelling fossil generating units.                                       |
| 3/85  | R-842632      | PA        | West Penn Power Industrial Intervenors           | West Penn Power Co.            | Economics of pumped storage generating units, optimal res. margin, excess capacity.    |
| 3/85  | 3498-U        | GA        | Georgia Public Service Commission Staff          | Georgia Power Co.              | Nuclear unit cancellation, load and energy forecasting, generation planning economics. |
| 5/85  | 84-768-E-42T  | WV        | West Virginia Multiple Intervenors               | Monongahela Power Co.          | Economics of pumped storage generating units, reserve margin, excess capacity.         |
| 7/85  | E-7, SUB 391  | NC        | Carolina Industrial Group for Fair Utility Rates | Duke Power Co.                 | Nuclear economics, fuel cost projections.  |
| 7/85  | 9299          | KY        | Kentucky Industrial Utility Consumers            | Union Light, Heat & Power Co.  | Interruptible rate design.   |
| 8/85  | 84-249-U      | AR        | Arkansas Electric Energy Consumers               | Arkansas Power & Light Co.     | Prudence review.   |
| 1/86  | 85-09-12      | CT        | Connecticut Ind. Energy Consumers                | Connecticut Light & Power Co.  | Excess capacity, financial impact of phase-in nuclear plant.                           |
| 1/86  | R-850152      | PA        | Philadelphia Area Industrial Energy Users' Group | Philadelphia Electric Co.      | Phase-in and economics of nuclear plant.   |
| 2/86  | R-850220      | PA        | West Penn Power Industrial Intervenors           | West Penn Power                | Optimal reserve margins, prudence, off-system sales guarantee plan.                    |
| 5/86  | 86-081-E-GI   | WV        | West Virginia Energy Users' Group                | Monongahela Power Co.          | Generation planning study, economics prudence of a pumped storage hydroelectric unit.  |

**Expert Testimony Appearances  
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| Date         | Case  | Jurisdct. | Party   | Utility                             | Subject   |
|--------------|---|-----------|---|-------------------------------------|---|
| 5/86         | 3554-U  | GA        | Attorney General<br>Georgia Public<br>Service Commission<br>Staff | Georgia Power Co.                   | Cancellation of nuclear plant.  |
| 9/86         | 29327/28                                      | NY        | Occidental Chemical<br>Corp.                                      | Niagara Mohawk<br>Power Co.         | Avoided cost, production<br>cost models.  |
| 9/86         | E7-<br>Sub 408                                | NC        | NC Industrial<br>Energy Committee                                 | Duke Power Co.                      | Incentive fuel adjustment<br>clause.  |
| 12/86<br>613 | 9437/   | KY        | Attorney General<br>of Kentucky                                   | Big Rivers Elect.<br>Corp.          | Power system reliability<br>analysis, rate treatment of<br>excess capacity.                   |
| 5/87         | 86-524-<br>E-SC                               | WV        | West Virginia Energy<br>Users' Group                              | Monongahela Power                   | Economics and rate treatment<br>of Bath County pumped storage<br>County Pumped Storage Plant. |
| 6/87         | U-17282                                       | LA        | Louisiana<br>Public Service<br>Commission Staff                   | Gulf States<br>Utilities            | Prudence of River Bend<br>Nuclear Plant.  |
| 6/87         | PUC-87-<br>013-RD<br>E002/E-015<br>-PA-86-722 | MN        | Eveleth Mines<br>& USX Corp.                                      | Minnesota Power/<br>Northern States | Sale of generating<br>unit and reliability<br>Power requirements.                             |
| 7/87         | Docket<br>9885                                | KY        | Attorney General<br>of Kentucky                                   | Big Rivers Elec.<br>Corp.           | Financial workout plan for<br>Big Rivers.   |
| 8/87         | 3673-U  | GA        | Georgia Public<br>Service Commission<br>Staff                     | Georgia Power Co.                   | Nuclear plant prudence audit,<br>Vogtle buyback expenses.                                     |
| 10/87        | R-850220                                      | PA        | WPP Industrial<br>Intervenors                                     | West Penn Power                     | Need for power and economics,<br>County Pumped Storage Plant                                  |
| 10/87        | 870220-EI                                     | FL        | Occidental Chemical   | Fla. Power Corp.                    | Cost allocation methods and<br>interruptible rate design.                                     |
| 10/87        | 870220-EI                                     | FL        | Occidental Chemical   | Fla. Power Corp.                    | Nuclear plant performance.  |
| 1/88         | Case No.<br>9934                              | KY        | Kentucky Industrial<br>Utility Consumers                          | Louisville Gas &<br>Electric Co.    | Review of the current status<br>of Trimble County Unit 1.                                     |
| 3/88         | 870189-EI                                     | FL        | Occidental Chemical<br>Corp.                                      | Fla. PowerCorp.                     | Methodology for evaluating<br>interruptible load.   |
| 5/88         | Case No.<br>10217                             | KY        | National Southwire<br>Aluminum Co.,<br>ALCAN Alum Co.             | Big Rivers Elec.<br>Corp.           | Debt restructuring<br>agreement.  |

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| Date  | Case                    | Jurisdct.                             | Party  | Utility  | Subject  |
|-------|-------------------------|---------------------------------------|--|--|--|
| 7/88  | Case No.<br>325224      | LA                                    | Louisiana Public<br>Service Commission<br>Staff              | Gulf States<br>Utilities                                     | Prudence of River Bend<br>Nuclear Plant.   |
|       |                         | 19th<br>Div I<br>Judicial<br>District |  |  |  |
| 10/88 | 3780-U                  | GA                                    | Georgia Public<br>Service Commission<br>Staff                | Atlanta Gas Light<br>Co.                                     | Weather normalization of gas<br>sales and revenues.  |
| 10/88 | 3799-U                  | GA                                    | Georgia Public<br>Service Commission<br>Staff                | United Cities Gas<br>Co.                                     | Weather normalization of gas<br>sales and revenues.  |
| 12/88 | 88-171-<br>EL-AIR       | OH                                    | Ohio Industrial<br>Energy Consumers                          | Toledo Edison Co.,<br>Cleveland Electric<br>Illuminating Co. | Power system reliability<br>reserve margin.  |
|       | 88-170-<br>EL-AIR       | OH                                    |  |  |  |
| 1/89  | I-880052                | PA                                    | Philadelphia Area<br>Industrial Energy<br>Users' Group       | Philadelphia<br>Electric Co.                                 | Nuclear power plant outage,<br>replacement fuel cost<br>recovery.                              |
| 2/89  | 10300                   | KY                                    | Green River Steel Co.  | Kentucky Util.   | Contract termination clause<br>and interruptible rates.  |
| 3/89  | P-870216<br>283/284/286 | PA                                    | Armco Advanced<br>Materials Corp.,<br>Allegheny Ludlum Corp. | West Penn Power  | Reserve margin, avoided<br>costs.  |
| 5/89  | 3741-U                  | GA                                    | Georgia Public<br>Service Commission<br>Staff                | Georgia Power Co.  | Prudence of fuel procurement.  |
| 8/89  | 3840-U                  | GA                                    | Georgia Public<br>Service Commission<br>Staff                | Georgia Power Co.  | Need and economics coal &<br>nuclear capacity, power system<br>planning.                       |
| 10/89 | 2087                    | NM                                    | Attorney General of<br>New Mexico                            | Public Service Co.<br>of New Mexico                          | Power system planning,<br>economic and reliability<br>analysis, nuclear planning,<br>prudence. |
| 10/89 | 89-128-U                | AR                                    | Arkansas Electric<br>Energy Consumers                        | Arkansas Power<br>Light Co.                                  | Economic impact of asset<br>transfer and stipulation and<br>settlement agreement.              |
| 11/89 | R-891364                | PA                                    | Philadelphia Area<br>Industrial Energy<br>Users' Group       | Philadelphia<br>Electric Co.                                 | Sale/leaseback nuclear plant,<br>excess capacity, phase-in<br>construction delay imprudence.   |
| 1/90  | U-17282                 | LA                                    | Louisiana Public<br>Service Commission<br>Staff              | Gulf States<br>Utilities                                     | Sale/leaseback nuclear power<br>plant.   |

Expert Testimony Appearances  
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As of Fall 1997

| Date  | Case               | Jurisdic. | Party  | Utility                           | Subject  |
|-------|--------------------|-----------|--|-----------------------------------|--|
| 4/90  | 89-1001-<br>El-AIR | OH        | Industrial Energy<br>Consumers                                   | Ohio Edison Co.                   | Power supply reliability,<br>excess capacity adjustment.   |
| 4/90  | N/A                | N.O.      | New Orleans<br>Business Counsel                                  | New Orleans Public<br>Service Co. | Municipalization of investor-<br>owned utility, generation<br>planning & reliability                       |
| 7/90  | 3723-U             | GA        | Georgia Public<br>Service Commission<br>Staff                    | Atlanta Gas Light<br>Co.          | Sales & weather normalization<br>adjustment rider.   |
| 9/90  | 8278               | MD        | Maryland Industrial<br>Group                                     | Baltimore Gas &<br>Electric Co.   | Revenue requirements, gas and<br>electric CWIP in rate base.   |
| 9/90  | 90-158             | KY        | Kentucky Industrial<br>Utility Consumers                         | Louisville Gas &<br>Electric Co.  | Power system planning study.   |
| 12/90 | U-9346<br>Rebuttal | MI        | Association of<br>Businesses Advocating<br>Tariff Equity (ABATE) | Consumers Power                   | DSM Methods & Policy Issues.   |
| 5/91  | 3979-U             | GA        | Georgia Public<br>Service Commission<br>Staff                    | Georgia Power Co.                 | Demand-side management, load<br>forecasting, and IRP.  |
| 7/91  | 9945               | TX        | Office of Public<br>Utility Counsel                              | El Paso Electric<br>Co.           | Power system planning,<br>quantification of damages of<br>imprudence, environmental<br>cost of electricity |
| 8/91  | 4007-U             | GA        | Georgia Public<br>Service Commission<br>Staff                    | Georgia Power Co.                 | Integrated resource planning,<br>regulatory risk assessment.   |
| 11/91 | 10200              | TX        | Office of Public<br>Utility Counsel                              | Texas-New Mexico<br>Power Co.     | Imprudence disallowance.   |
| 12/91 | U-17282            | LA        | Louisiana Public<br>Service Commission<br>Staff                  | Gulf States<br>Utilities          | Year-end sales and customer<br>adjustment, jurisdictional<br>allocation.                                   |
| 1/92  | 89-783-<br>E-C     | WVA       | West Virginia<br>Energy Users Group                              | Monongahela Power<br>Co.          | Avoided cost, reserve margin,<br>power plant economics.  |
| 3/92  | 91-370             | KY        | Newport Steel Co.  | Union Light, Heat<br>& Power Co.  | Interruptible rates, design,<br>cost allocation.   |
| 5/92  | 91890              | FL        | Occidental Chemical<br>Corp.                                     | Fla. Power Corp.                  | Incentive regulation,<br>jurisdictional separation,<br>interruptible rate design.                          |
| 6/92  | 4131-U             | GA        | Georgia Textile<br>Manufacturers Assn.                           | Georgia Power Co.                 | Integrated resource planning,<br>DSM.  |
| 9/92  | 920324             | FL        | Florida Industrial<br>Power Users Group                          | Tampa Electric Co.                | Cost allocation, interruptible<br>rates decoupling and DSM.  |

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| Date  | Case                            | Jurisdct. | Party  | Utility   | Subject   |
|-------|---------------------------------|-----------|--|---|---|
| 10/92 | 4132-U                          | GA        | Georgia Textile<br>Manufacturers Assn.                         | Georgia Power Co.                                 | Residential conservation<br>program certification.                                    |
| 10/92 | 11000                           | TX        | Office of Public<br>Utility Counsel                            | Houston Lighting<br>and Power Co.                 | Certification of utility<br>cogeneration project.                                     |
| 11/92 | U-19904                         | LA        | Louisiana Public<br>Service Commission<br>Staff                | Entergy/Gulf<br>States Utilities<br>(Direct)      | Production cost savings<br>from merger.   |
| 11/92 | 8469                            | MD        | Westvaco Corp.   | Potomac Edison Co.                                | Cost allocation, revenue<br>distribution.   |
| 11/92 | 920606                          | FL        | Florida Industrial<br>Power Users Group                        | Statewide<br>Rulemaking                           | Decoupling, demand-side<br>management, conservation,<br>performance incentive factor. |
| 12/92 | R-009<br>22378                  | PA        | Armco Advanced<br>Materials                                    | West Penn Power                                   | Energy allocation of<br>production costs.   |
| 1/93  | 8179                            | MD        | Eastalco Aluminum/<br>Westvaco Corp.                           | Potomac Edison Co.                                | Economics of QF vs. combined<br>cycle power plant.                                    |
| 2/93  | 92-E-0814<br>88-E-081           | NY        | Occidental Chemical<br>Corp.                                   | Niagara Mohawk<br>Power Corp.                     | Special rates, wheeling.  |
| 3/93  | U-19904                         | LA        | Louisiana Public<br>Service Commission<br>Staff                | Entergy/Gulf<br>States Utilities<br>(Surrebuttal) | Production cost savings from<br>merger.   |
| 4/93  | EC92<br>21000<br>ER92-806-000   | FERC      | Louisiana Public<br>Service Commission<br>Staff                | Gulf States<br>Utilities/Entergy                  | GSU Merger prodcution cost<br>savings   |
| 6/93  | 930055-EU                       | FL        | Florida Industrial<br>Power Users' Group                       | Statewide<br>Rulemaking                           | Stockholder icentives for<br>off-system sales.  |
| 9/93  | 92-490,<br>92-490A,<br>90-360-C | KY        | Kentucky Industrial<br>Utility Customers<br>& Attorney General | Big Rivers Elec.<br>Corp.                         | Prudence of fuel procurement<br>decisions.  |
| 9/93  | 4152-U                          | GA        | Georgia Textile<br>Manufacturers Assn.                         | Georgia Power Co.                                 | Cost allocation of pollution<br>control equipment.                                    |
| 4/94  | E-015/<br>GR-94-001             | MN        | Large Power<br>Intervenors                                     | Minn. Power Co.                                   | Analysis of revenue req.<br>and cost allocation issues.                               |
| 4/94  | 93-465                          | KY        | Kentucky Industrial<br>Utility Customers                       | Kentucky Utilities                                | Review and critique proposed<br>environmental surcharge.                              |
| 4/94  | 4895-U                          | GA        | Georgia Textile<br>Manufacturers Assn.                         | Georgia Power Co                                  | Purchased power agreement<br>and fuel adjustment clause.                              |
| 4/94  | E-015/<br>GR-94-001             | MN        | Large Power<br>Intervenors                                     | Minnesota Power<br>Light Co.                      | Rev. requirements, incentive<br>compensation.   |

Expert Testimony Appearances  
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As of Fall 1997

| Date  | Case                     | Jurisd. Party | Party   | Utility                           | Subject  |
|-------|--------------------------|---------------|---|-----------------------------------|--|
| 7/94  | 94-0035-E-42T            | WV            | West Virginia Energy Users' Group               | Monongahela Power Co.             | Revenue annualization, ROE performance bonus, and cost allocation.     |
| 8/94  | 8652                     | MD            | Westvaco Corp.                                  | Potomac Edison Co.                | Revenue requirements, ROE performance bonus, and revenue distribution. |
| 1/95  | 94-332                   | KY            | Kentucky Industrial Utility Customers           | Louisville Gas & Electric Company | Environmental surcharge.   |
| 1/95  | 94-996-EL-AIR            | OH            | Industrial Energy Users of Ohio                 | Ohio Power Company                | Cost-of-service, rate design, demand allocation of power               |
| 3/95  | E999-CI                  | MN            | Large Power Intervenor                          | Minnesota Public Utilities Comm.  | Environmental Costs Of electricricity                                  |
| 4/95  | 95-060                   | KY            | Kentucky Industrial Utility Customers           | Kentucky Utilities Company        | Six month review of CAAA surcharge.                                    |
| 11/95 | I-940032                 | PA            | The Industrial Energy Consumers of Pennsylvania | Statewide - all utilities         | Direct Access vs. Poolco, modeling Poolco, market power.               |
| 11/95 | 95-455                   | KY            | Kentucky Industrial Utility Customers           | Kentucky Utilities Company        | Clean Air Act Surcharge,   |
| 12/95 | 95-455                   | KY            | Kentucky Industrial Utility Customers           | Louisville Gas & Electric Company | Clean Air Act Compliance Surcharge.                                    |
| 6/96  | 960409-EI                | FL            | Florida Industrial Power Users Group            | Tampa Electric Co.                | Polk County Power Plant Rate Treatment Issues.                         |
| 3/97  | R-973877                 | PA            | PAIEUG.   | PECO Energy                       | Stranded Costs & Market Prices.  |
| 3/97  | 970096-EQ                | FL            | FIPUG   | Fla. Power Corp.                  | Buyout of QF Contract  |
| 6/97  | R-00973593               | PA            | PAIEUG  | PECO Energy                       | Market Prices, Stranded Cost   |
| 7/97  | R-00973594               | PA            | PPLICA  | Penn. Pwr. & Lt.                  | Market Prices, Stranded Cost   |
| 8/97  | 96-360-U                 |               | AEBC  | Entergy Ark. Inc.                 | Market Prices and Stranded Costs, Cost Allocation, Rate Design         |
| 10/97 | 6739-U                   |               | GPSC Staff                                      | Gerogia Power                     | Planning Prudence of Pumped Storage Power Plant                        |
| 10/97 | R-00974008<br>R-00974009 | PA<br>pa      | MIEUG<br>PICA                                   | Metropolitan Ed.<br>PENELEC       | Market Prices, Stranded Costs  |

## Exhibit No. (RJF-2)

**PRODUCTION COST MODEL STUDIES AND BENCHMARKS TO UTILITY COMPANY  
MODELS USED IN REGULATORY PROCEEDINGS**

| <u>Year</u> | <u>Company</u>                   | <u>Docket No.</u>        | <u>Utility Co. Model</u>         | <u>Application</u>               |
|-------------|----------------------------------|--------------------------|----------------------------------|----------------------------------|
| 1984        | Louisville Gas & Electric        | KPSC-8924                | EBASCO Prod. Cost Model          | Production Cost                  |
| 1984        | Florida Power Corp.              | FPSC-830470 EI           | EMA PROMOD III                   | Production Cost                  |
| 1984        | Connecticut Light & Power        | COPUC-840713             | NU Deterministic                 | Production Cost                  |
| 1985        | Monongahela Power Co.            | WVPS-84-768-E42T         | NA                               | Reliability                      |
| 1985        | Louisville Gas & Electric        | KPSC-9243                | EPRI EGEAS                       | Production Cost                  |
| 1985        | Cincinnati Gas & Electric        | KPSC-9299                | NA                               | Reliability                      |
| 1986        | Georgia Power Company            | GPSC-3554-U              | EPRI UPM                         | Production Cost                  |
| 1986        | Big Rivers Electric Corp.        | KPSC-9437,9613           | EMA PROMOD III, BREC Model       | Reliability                      |
| 1987        | Monongahela Power Co.            | WVPS-86-524-E-SC         | EMA PROMOD III                   | Production Cost & Reliability    |
| 1987        | West Penn Power Co.              | PENN. PUC R850220        | EMA PROMOD III                   | Production Cost & Reliability    |
| 1987        | Georgia Power Company            | GPSC-3673-U              | GPC MODEL                        | Production Cost                  |
| 1988        | Louisville Gas & Electric        | KPSC-9984                | EPRI EGEAS                       | Production Cost & Reliability    |
| 1988        | Cleveland Electric               | PUCO-88-170 EL AIR       | Centerior Model                  | Reliability                      |
| 1988        | Toledo Edison                    | PUCO-88-171 EL AIR       | Centerior Model                  | Reliability                      |
| 1989        | West Penn Power Co.              | P-870216/283<br>/284/286 | PROMOD III, APS<br>Historic Data | Production Cost<br>& Reliability |
| 1989        | Georgia Power Company            | GPSC 3840-U              | EPRI UPM                         | Production Cost                  |
| 1990        | Ohio Edison Company              | 89-1001-EL-AIR           | OES                              | Reliability                      |
| 1990        | New Orleans Public Service, Inc. | City Council Hearing     | n/a                              | Reliability                      |
| 1992        | GSU/Entergy                      | U-19904                  | EMA PROMOD III                   | Production Cost                  |
| 1992        | Potomac Edison                   | 8179                     | n/a                              | Production Cost                  |
| 1995        | Pennsylvania                     | 1-940032                 | n/a                              | Market Price Simulation          |
| 1997        | PECO Energy                      | R-00973593               | EDS-PMDAM, ICF-IPM, GE- MAPS     | PJM Pool Market Prices           |

Exhibit No. \_\_\_\_ (RJF- 3)

Comparison of Market Price Model Results  
K&A Model vs. MAPS,IPM, PMDAM

| Year    | =====PHB Assumptions===== |       |        |         | =====ICF Assumptions===== |       |        |         | =====EDS Assumptions===== |       |        |         |                         |       |        |         |
|---------|---------------------------|-------|--------|---------|---------------------------|-------|--------|---------|---------------------------|-------|--------|---------|-------------------------|-------|--------|---------|
|         | -----Market Energy-----   |       |        |         | -----Market Energy-----   |       |        |         | -----Market Energy-----   |       |        |         | -----Cap. & Energy----- |       |        |         |
|         | MAPS                      | K&A   | \$/mWh | % Diff. | IPM                       | K&A   | \$/mWh | % Diff. | PMDM                      | K&A   | \$/mWh | % Diff. | PMDM                    | K&A   | \$/mWh | % Diff. |
| 1999    | 20.50                     | 23.04 | 2.54   | 12.37%  | 22.18                     | 24.34 | 2.16   | 9.7%    | 22.08                     | 22.86 | 0.77   | 3.51%   | 25.72                   | 26.49 | 0.77   | 3.01%   |
| 2000    |                           |       |        |         | 23.86                     | 25.77 | 1.91   | 8.0%    | 23.50                     | 24.25 | 0.75   | 3.19%   | 28.23                   | 28.98 | 0.75   | 2.65%   |
| 2001    |                           |       |        |         | 24.59                     | 25.73 | 1.14   | 4.6%    | 25.08                     | 25.11 | 0.03   | 0.14%   | 31.94                   | 31.98 | 0.03   | 0.11%   |
| 2002    |                           |       |        |         | 25.59                     | 26.73 | 1.14   | 4.4%    | 26.07                     | 26.46 | 0.39   | 1.49%   | 33.30                   | 33.49 | 0.18   | 0.55%   |
| 2003    |                           |       |        |         | 26.44                     | 27.23 | 0.79   | 3.0%    | 27.33                     | 27.66 | 0.33   | 1.20%   | 34.90                   | 34.85 | -0.04  | -0.13%  |
| 2004    | 28.00                     | 28.12 | 0.12   | 0.43%   | 27.51                     | 27.60 | 0.09   | 0.3%    | 28.53                     | 28.74 | 0.21   | 0.75%   | 36.40                   | 36.16 | -0.24  | -0.65%  |
| 2005    |                           |       |        |         | 28.66                     | 28.25 | -0.41  | -1.4%   | 29.45                     | 29.90 | 0.45   | 1.52%   | 37.56                   | 37.46 | -0.10  | -0.26%  |
| 2006    |                           |       |        |         | 30.04                     | 29.73 | -0.31  | -1.0%   | 30.55                     | 31.52 | 0.97   | 3.18%   | 38.76                   | 38.88 | 0.11   | 0.29%   |
| 2007    |                           |       |        |         | 31.28                     | 30.68 | -0.60  | -1.9%   | 31.93                     | 32.61 | 0.68   | 2.11%   | 40.29                   | 40.47 | 0.18   | 0.44%   |
| 2008    |                           |       |        |         | 32.77                     | 31.66 | -1.11  | -3.4%   | 33.86                     | 33.75 | -0.11  | -0.33%  | 42.14                   | 41.99 | -0.15  | -0.36%  |
| 2009    | 36.15                     | 35.34 | -0.81  | -2.23%  | 33.91                     | 33.35 | -0.56  | -1.7%   | 34.88                     | 35.70 | 0.82   | 2.34%   | 43.67                   | 43.69 | 0.01   | 0.03%   |
| 2010    |                           |       |        |         | 35.29                     | 34.52 | -0.77  | -2.2%   | 36.66                     | 37.05 | 0.39   | 1.06%   | 45.70                   | 45.47 | -0.23  | -0.51%  |
| 2011    |                           |       |        |         | 36.43                     | 35.77 | -0.66  | -1.8%   | 37.84                     | 38.25 | 0.42   | 1.10%   | 47.26                   | 47.18 | -0.08  | -0.18%  |
| 2012    |                           |       |        |         | 37.80                     | 37.11 | -0.69  | -1.8%   | 39.96                     | 39.55 | -0.41  | -1.03%  | 49.00                   | 48.99 | -0.01  | -0.03%  |
| 2013    |                           |       |        |         | 39.24                     | 39.20 | -0.04  | -0.1%   | 41.07                     | 41.74 | 0.66   | 1.62%   | 50.69                   | 50.75 | 0.06   | 0.12%   |
| 2014    |                           |       |        |         | 40.69                     | 40.71 | 0.02   | 0.1%    | 42.81                     | 43.23 | 0.42   | 0.97%   | 52.93                   | 52.73 | -0.20  | -0.38%  |
| Average | 28.22                     | 28.83 | 0.62   | 2.18%   | 31.02                     | 31.15 | 0.13   | 0.42%   | 31.98                     | 32.40 | 0.42   | 1.32%   | 39.91                   | 39.97 | 0.07   | 0.16%   |

Exhibit No. (RJF-4)

INPUT PARAMETERS SUMMARY

|                     |         |                     |         |   |
|---------------------|---------|---------------------|---------|---|
| Unit Size (mW)      | 1       | Tax Life            | 20      | 0 |
| On-line date        | 1       | MACRS rate          | 0.00%   |   |
| On-line month       | 1       | Tax Depn Base/Book  | 100.00% |   |
| Book Life           | 23      | Tax Rate            | 40.64%  |   |
| Investment (\$/kW)  | 100,000 | Other Tax Rate      | 1.00%   |   |
| Inflation           | 3.11%   | % Of Year           | 100.00% |   |
| Cost of Debt        | 9.90%   | Month PV Adj        | 100.00% |   |
| Percent Debt        | 50.00%  | Investment (\$ 000) | 10,000  |   |
| Cost of Equity      | 14.00%  | Salvage (%)         | 0.00%   |   |
| Percent Equity      | 50.00%  | ITC Rate            | 0       |   |
| Rate of Return      | 11.95%  | ITC Amort           | 0.0     |   |
| AA G Loading        | 0.00%   | Salvage \$          | 0       |   |
| BOY =0, EOY =1, AVG | 2       | ITC Total           | 0       |   |

SUMMARY OF RESULTS

|                   |         |          |        |
|-------------------|---------|----------|--------|
|                   | PV RR   | FCCR     | ECCR   |
| Rev Req (PV RR)   | 128177  | 16.5510% | 13.34% |
| Cap Rec. Factor   | 12.913% | 16551    |        |
| Rate of Return    | 61928   | 8.00%    |        |
| FITRIT            | 24835   | 3.21%    |        |
| Book Depreciation | 33871   | 4.35%    |        |
| Insurance         | 0       | 0.00%    |        |
| Property Taxes    | 7744    | 1.00%    |        |
|                   |         | 16551    |        |

Notes: 1. The 1% is only enough to cover the Prop. Taxes. In TPH-5, page 24 prop. Tax for CTS are about \$2.84/kW year or about 1% of investment new plant.  
2. Uses ICF conservative capital structure.

ANNUAL REVENUE REQUIREMENTS

| ** RATE BASE (\$MILL, BOY) ** |            | APPLIED |            | ** DEFERRED TAXES ** |           |           |             |              |             |       |                |             |           | 16.55%   |           | 40.64% |                   |          |           |            |                | ECCR           |           | PW     |           |            |
|-------------------------------|------------|---------|------------|----------------------|-----------|-----------|-------------|--------------|-------------|-------|----------------|-------------|-----------|----------|-----------|--------|-------------------|----------|-----------|------------|----------------|----------------|-----------|--------|-----------|------------|
| GROSS PLANT                   | ACCUM DEPR | ADFIT   | BOY INVEST | AVG. INVEST          | BOOK DEPR | DEBT COST | EQUITY COST | ACC TAX DEPR | SL TAX DEPR | DFIT  | TAXABLE INCOME | CURRENT TAX | TOTAL TAX | Subtotal | Other Tax | A&G    | PROP. TA INSURANC | TOTAL RR | PW FACTOR | PW REV REQ | NPV of REV REQ | -----ECCR----- | REV. REQ. | RATE   | PW FACTOR | PW REV REQ |
| 1                             | 100,000    |         | 100,000    | 97,948               | 4,348     | 4,848     | 8,856       | 3,750        | 4,348       | (243) | 12,148         | 4,937       | 4,894     | 20747    | 1,000     | 0      | 1000              | 21,747   | 0.8933    | 19,425     | 19,425         | 13343          | 13.34%    | 89.33% | 11918     |            |
| 2                             | 100,000    | 4,348   | (243)      | 95,885               | 93,138    | 4,348     | 4,810       | 8,520        | 7,219       | 4,348 | 1,187          | 8,112       | 3,297     | 4,484    | 19941     | 1,000  | 0                 | 1000     | 20,941    | 0.7978     | 16,709         | 36,135         | 13758     | 13.76% | 79.79%    | 22896      |
| 3                             | 100,000    | 8,696   | 924        | 90,380               | 87,733    | 4,348     | 4,343       | 6,141        | 6,877       | 4,348 | 947            | 8,017       | 3,258     | 4,205    | 19037     | 1,000  | 0                 | 1000     | 20,037    | 0.7127     | 14,281         | 50,415         | 14186     | 14.19% | 71.27%    | 33006      |
| 4                             | 100,000    | 13,043  | 1,870      | 85,086               | 82,540    | 4,348     | 4,086       | 5,778        | 6,177       | 4,348 | 743            | 7,904       | 3,212     | 3,956    | 18167     | 1,000  | 0                 | 1000     | 18,167    | 0.6367     | 12,203         | 62,618         | 14827     | 14.63% | 63.67%    | 42319      |
| 5                             | 100,000    | 17,391  | 2,814      | 79,995               | 77,544    | 4,348     | 3,838       | 5,428        | 5,713       | 4,348 | 555            | 7,779       | 3,161     | 3,716    | 17331     | 1,000  | 0                 | 1000     | 18,331    | 0.5687     | 10,424         | 73,043         | 15082     | 15.08% | 56.87%    | 50895      |
| 6                             | 100,000    | 21,739  | 3,169      | 75,092               | 72,728    | 4,348     | 3,600       | 5,091        | 5,285       | 4,348 | 361            | 7,639       | 3,105     | 3,485    | 16524     | 1,000  | 0                 | 1000     | 17,524    | 0.5080     | 8,902          | 81,945         | 15551     | 15.55% | 50.80%    | 58795      |
| 7                             | 100,000    | 26,087  | 3,550      | 70,364               | 68,060    | 4,348     | 3,370       | 4,786        | 4,888       | 4,348 | 220            | 7,488       | 3,043     | 3,263    | 15746     | 1,000  | 0                 | 1000     | 16,746    | 0.4538     | 7,599          | 89,544         | 16034     | 16.03% | 45.38%    | 66071      |
| 8                             | 100,000    | 30,435  | 3,789      | 65,796               | 63,587    | 4,348     | 3,148       | 4,451        | 4,522       | 4,348 | 71             | 7,324       | 2,977     | 3,047    | 14994     | 1,000  | 0                 | 1000     | 15,994    | 0.4053     | 6,483          | 96,026         | 16533     | 16.53% | 40.53%    | 72772      |
| 9                             | 100,000    | 34,783  | 3,840      | 61,378               | 59,180    | 4,348     | 2,929       | 4,143        | 4,462       | 4,348 | 48             | 6,889       | 2,790     | 2,838    | 14258     | 1,000  | 0                 | 1000     | 15,258    | 0.3621     | 5,574          | 101,550        | 17047     | 17.05% | 36.21%    | 78944      |
| 10                            | 100,000    | 39,130  | 3,888      | 56,983               | 54,788    | 4,348     | 2,712       | 3,835        | 4,481       | 4,348 | 48             | 6,347       | 2,590     | 2,626    | 13520     | 1,000  | 0                 | 1000     | 14,520    | 0.3234     | 4,698          | 106,745        | 17577     | 17.58% | 32.34%    | 84829      |
| 11                            | 100,000    | 43,478  | 3,832      | 52,590               | 50,392    | 4,348     | 2,494       | 3,527        | 4,482       | 4,348 | 48             | 5,828       | 2,369     | 2,415    | 12765     | 1,000  | 0                 | 1000     | 13,765    | 0.2889     | 3,982          | 110,228        | 18124     | 18.12% | 28.89%    | 89865      |
| 12                            | 100,000    | 47,826  | 3,879      | 48,195               | 45,998    | 4,348     | 2,277       | 3,220        | 4,461       | 4,348 | 48             | 5,311       | 2,158     | 2,204    | 12049     | 1,000  | 0                 | 1000     | 13,049    | 0.2581     | 3,367          | 113,596        | 18688     | 18.69% | 25.81%    | 94687      |
| 13                            | 100,000    | 52,174  | 4,025      | 43,801               | 41,604    | 4,348     | 2,059       | 2,912        | 4,462       | 4,348 | 48             | 4,792       | 1,947     | 1,994    | 11313     | 1,000  | 0                 | 1000     | 12,313    | 0.2305     | 2,838          | 116,434        | 19269     | 19.27% | 23.05%    | 99129      |
| 14                            | 100,000    | 56,522  | 4,071      | 39,407               | 37,210    | 4,348     | 1,842       | 2,605        | 4,461       | 4,348 | 48             | 4,275       | 1,737     | 1,783    | 10578     | 1,000  | 0                 | 1000     | 11,578    | 0.2059     | 2,384          | 118,818        | 19868     | 19.87% | 20.59%    | 103220     |
| 15                            | 100,000    | 60,870  | 4,117      | 35,013               | 32,816    | 4,348     | 1,624       | 2,297        | 4,462       | 4,348 | 48             | 3,756       | 1,526     | 1,573    | 9942      | 1,000  | 0                 | 1000     | 10,842    | 0.1839     | 1,994          | 120,812        | 20486     | 20.49% | 18.39%    | 106988     |
| 16                            | 100,000    | 65,217  | 4,163      | 30,618               | 28,422    | 4,348     | 1,407       | 1,990        | 4,461       | 4,348 | 48             | 3,239       | 1,316     | 1,362    | 9106      | 1,000  | 0                 | 1000     | 10,106    | 0.1643     | 1,660          | 122,472        | 21123     | 21.12% | 16.43%    | 110458     |
| 17                            | 100,000    | 69,565  | 4,209      | 26,225               | 24,028    | 4,348     | 1,189       | 1,682        | 4,462       | 4,348 | 48             | 2,719       | 1,105     | 1,152    | 8371      | 1,000  | 0                 | 1000     | 9,371     | 0.1468     | 1,375          | 123,848        | 21780     | 21.78% | 14.68%    | 113654     |
| 18                            | 100,000    | 73,913  | 4,256      | 21,831               | 19,834    | 4,348     | 972         | 1,374        | 4,461       | 4,348 | 48             | 2,202       | 895       | 941      | 7635      | 1,000  | 0                 | 1000     | 8,635     | 0.1311     | 1,132          | 125,980        | 22457     | 22.46% | 13.11%    | 116598     |
| 19                            | 100,000    | 78,261  | 4,302      | 17,437               | 15,240    | 4,348     | 754         | 1,067        | 4,462       | 4,348 | 48             | 1,683       | 684       | 730      | 6899      | 1,000  | 0                 | 1000     | 7,899     | 0.1171     | 925            | 125,905        | 23156     | 23.16% | 11.71%    | 119310     |
| 20                            | 100,000    | 82,609  | 4,348      | 13,043               | 10,846    | 4,348     | 537         | 759          | 4,461       | 4,348 | 48             | 1,188       | 474       | 520      | 6184      | 1,000  | 0                 | 1000     | 7,184     | 0.1046     | 749            | 126,654        | 23876     | 23.88% | 10.46%    | 121807     |
| 21                            | 100,000    | 86,957  | 4,394      | 8,649                | 6,906     | 4,348     | 342         | 483          | 2,231       | 4,348 | (890)          | 2,931       | 1,191     | 331      | 5504      | 1,000  | 0                 | 1000     | 6,504     | 0.0934     | 608            | 127,262        | 24818     | 24.62% | 9.34%     | 124107     |
| 22                            | 100,000    | 91,304  | 3,534      | 5,162                | 3,871     | 4,348     | 192         | 271          | 0           | 4,348 | (1,787)        | 4,804       | 1,952     | 188      | 4996      | 1,000  | 0                 | 1000     | 5,996     | 0.0835     | 500            | 127,762        | 25384     | 25.38% | 8.35%     | 126226     |
| 23                            | 100,000    | 95,652  | 1,767      | 2,581                | 1,290     | 4,348     | 64          | 90           | 0           | 4,348 | (1,787)        | 4,500       | 1,829     | 62       | 4564      | 1,000  | 0                 | 1000     | 5,564     | 0.0745     | 415            | 128,177        | 26174     | 26.17% | 7.45%     | 128177     |
| 24                            | 100,000    | 100,000 | (0)        | (0)                  | (0)       | 0         | 0           | 0            | 0           | 0     | 0              | 0           | 0         | 0        | 0         | 0      | 0                 | 0        | 0         | 0.0686     | 0              | 128,177        | 0         | 0.00%  | 6.86%     | 128177     |

## Stranded Cost

Exhibit No. \_\_\_(RJF-5a)  
Duquesne Light Company  
TOTAL STRANDED COST CALCULATION

|   |            |
|---|------------|
| Net Present Value of Contribution Margins | (\$16,742) |
| Total Adjusted NPV                        | (\$16,742) |
| Book Value less ITC                       | \$979,130  |
| Stranded Generation Cost                  | \$995,872  |

## NUG Obligation Stranded Costs

Scenario: EIA FUEL PRICE Escalation

Market Value

Exhibit No. (RJF-5b)  
 CALCULATION OF NET PRESENT VALUE OF CONTRIBUTION MARGINS

| Year       | Capacity    |      |     |         | Total | Capacity  | Energy      | PSH       | Total Costs | O&M         | Cap. Add  | Other Tax | A&G       | Emission  | Net Margin  |            |
|------------|-------------|------|-----|---------|-------|-----------|-------------|-----------|-------------|-------------|-----------|-----------|-----------|-----------|-------------|------------|
|            | Large Units | CT's | PSH | Charges |       | Revenue   | Margins     | Margins   |             |             |           |           |           |           |             |            |
| 1999       | 2468        | 0    | 0   | 2468    | 47.46 | \$117,511 | \$1,969,326 | \$0       | \$3,173,451 | \$1,470,844 | \$290,629 | \$155,878 | \$981,202 | \$274,899 | (\$16,742)  |            |
| 1999       | 2468        | 0    | 0   | 2468    | 47.46 | \$117,141 | \$103,214   | \$0       | \$332,102   | \$135,500   | \$34,102  | \$28,800  | \$114,000 | \$19,700  | (\$111,747) |            |
| 2000       | 2468        | 0    | 0   | 2468    | 48.65 | \$120,070 | \$112,025   | \$0       | \$320,289   | \$120,500   | \$35,289  | \$28,700  | \$115,800 | \$20,000  | (\$88,194)  |            |
| 2001       | 2468        | 0    | 0   | 2468    | 49.87 | \$123,071 | \$125,244   | \$0       | \$323,483   | \$112,600   | \$30,883  | \$28,800  | \$125,800 | \$25,400  | (\$75,167)  |            |
| 2002       | 2468        | 0    | 0   | 2468    | 51.11 | \$126,148 | \$142,179   | \$0       | \$345,778   | \$129,200   | \$29,878  | \$28,900  | \$129,600 | \$28,200  | (\$77,451)  |            |
| 2003       | 2468        | 0    | 0   | 2468    | 52.39 | \$129,302 | \$165,343   | \$0       | \$359,725   | \$134,200   | \$35,125  | \$29,000  | \$133,400 | \$28,000  | (\$65,081)  |            |
| 2004       | 2468        | 0    | 0   | 2468    | 53.70 | \$132,534 | \$191,577   | \$0       | \$397,133   | \$133,600   | \$68,833  | \$28,900  | \$135,900 | \$29,900  | (\$73,021)  |            |
| Disc. Rate | 2005        | 1994 | 0   | 0       | 1994  | 55.04     | \$109,757   | \$179,573 | \$0         | \$321,128   | \$116,800 | \$23,828  | \$27,100  | \$125,500 | \$27,900    | (\$31,798) |
| 7.83%      | 2006        | 1994 | 0   | 0       | 1994  | 56.42     | \$112,501   | \$212,795 | \$0         | \$264,865   | \$149,550 | \$23,895  | \$0       | \$60,780  | \$30,640    | \$60,431   |
| 10.53%     | 2007        | 1994 | 0   | 0       | 1994  | 54.21     | \$108,095   | \$251,461 | \$0         | \$265,613   | \$147,640 | \$21,793  | \$0       | \$63,210  | \$32,970    | \$93,943   |
| Tax Rate   | 2008        | 1994 | 0   | 0       | 1994  | 57.44     | \$114,527   | \$260,455 | \$0         | \$280,489   | \$159,910 | \$19,019  | \$0       | \$65,400  | \$36,160    | \$94,493   |
| 41.49%     | 2009        | 1994 | 0   | 0       | 1994  | 60.76     | \$121,151   | \$266,684 | \$0         | \$287,021   | \$163,800 | \$18,541  | \$0       | \$67,970  | \$36,710    | \$100,814  |
|            | 2010        | 1994 | 0   | 0       | 1994  | 62.28     | \$124,180   | \$266,351 | \$0         | \$295,819   | \$160,120 | \$28,959  | \$0       | \$70,360  | \$36,380    | \$94,712   |
|            | 2011        | 1807 | 0   | 0       | 1807  | 63.83     | \$115,348   | \$253,732 | \$0         | \$288,626   | \$165,980 | \$18,636  | \$0       | \$65,680  | \$38,330    | \$80,454   |
|            | 2012        | 1621 | 0   | 0       | 1621  | 65.43     | \$106,061   | \$253,547 | \$0         | \$256,924   | \$150,120 | \$15,994  | \$0       | \$61,190  | \$29,620    | \$102,684  |
| Post 2014  | 2013        | 1621 | 0   | 0       | 1621  | 67.07     | \$108,713   | \$264,751 | \$0         | \$250,271   | \$141,100 | \$15,931  | \$0       | \$63,090  | \$30,150    | \$123,193  |
| inflation  | 2014        | 1621 | 0   | 0       | 1621  | 63.56     | \$103,034   | \$290,032 | \$0         | \$272,954   | \$158,500 | \$14,944  | \$0       | \$65,430  | \$34,080    | \$120,112  |
| 2.50%      | 2015        | 1059 | 0   | 0       | 1059  | 65.15     | \$68,995    | \$197,369 | \$0         | \$186,815   | \$118,640 | \$12,825  | \$0       | \$43,590  | \$11,760    | \$79,549   |
|            | 2016        | 446  | 0   | 0       | 446   | 66.78     | \$29,784    | \$85,948  | \$0         | \$91,305    | \$62,680  | \$4,865   | \$0       | \$18,010  | \$5,750     | \$24,427   |
|            | 2017        | 274  | 0   | 0       | 274   | 68.45     | \$18,755    | \$57,210  | \$0         | \$89,205    | \$65,420  | \$3,925   | \$0       | \$16,410  | \$3,450     | (\$13,240) |
|            | 2018        | 274  | 0   | 0       | 274   | 70.16     | \$19,224    | \$58,640  | \$0         | \$82,394    | \$57,090  | \$4,024   | \$0       | \$17,070  | \$4,210     | (\$4,530)  |
|            | 2019        | 274  | 0   | 0       | 274   | 71.91     | \$19,705    | \$60,107  | \$0         | \$94,754    | \$68,540  | \$4,124   | \$0       | \$17,770  | \$4,320     | (\$14,943) |
|            | 2020        | 274  | 0   | 0       | 274   | 73.71     | \$20,197    | \$61,609  | \$0         | \$75,967    | \$57,840  | \$4,227   | \$0       | \$13,900  | \$0         | \$5,839    |
|            | 2021        | 274  | 0   | 0       | 274   | 75.56     | \$20,702    | \$63,150  | \$0         | \$78,043    | \$59,240  | \$4,333   | \$0       | \$14,470  | \$0         | \$5,809    |
|            | 2022        | 274  | 0   | 0       | 274   | 77.44     | \$21,220    | \$64,729  | \$0         | \$79,551    | \$60,050  | \$4,441   | \$0       | \$15,060  | \$0         | \$6,397    |
|            | 2023        | 274  | 0   | 0       | 274   | 79.38     | \$21,750    | \$66,346  | \$0         | \$86,972    | \$66,760  | \$4,552   | \$0       | \$15,660  | \$0         | \$1,124    |
|            | 2024        | 274  | 0   | 0       | 274   | 81.36     | \$22,294    | \$68,004  | \$0         | \$77,626    | \$66,660  | \$4,666   | \$0       | \$16,300  | \$0         | \$12,672   |
|            | 2025        | 274  | 0   | 0       | 274   | 83.40     | \$22,851    | \$69,706  | \$0         | \$90,893    | \$69,140  | \$4,783   | \$0       | \$16,970  | \$0         | \$1,665    |
|            | 2026        | 274  | 0   | 0       | 274   | 85.48     | \$23,423    | \$71,448  | \$0         | \$87,362    | \$64,800  | \$4,902   | \$0       | \$17,660  | \$0         | \$7,508    |
|            | 2027        | 274  | 0   | 0       | 274   | 87.62     | \$24,008    | \$73,235  | \$0         | \$89,546    | \$66,420  | \$5,025   | \$0       | \$18,102  | \$0         | \$7,697    |
|            | 2028        | 274  | 0   | 0       | 274   | 89.81     | \$24,608    | \$75,066  | \$0         | \$91,785    | \$68,081  | \$5,150   | \$0       | \$18,554  | \$0         | \$7,889    |
|            | 2029        | 274  | 0   | 0       | 274   | 92.06     | \$25,224    | \$76,943  | \$0         | \$94,080    | \$69,783  | \$5,279   | \$0       | \$19,018  | \$0         | \$8,087    |

NPV of Net Margins After Tax

Large Units  
Capacity mW

| UNIT   | PERRY 1 | BEAV. V. 2 | BEAV. V. 2 | Cheawic 1 | Eirama 4 | Eirama 3 | WSammis 7 | Manstie 3 | Eastak 5 | Manstie 2 | Manstie 1 | Eirama 1 | Eirama 2 |
|--------|---------|------------|------------|-----------|----------|----------|-----------|-----------|----------|-----------|-----------|----------|----------|
| Own %  | 13.77   | 13.88      | 47.53      | 100       | 100      | 100      | 31.17     | 13.66     | 31.16    | 7.89      | 29.19     | 100      | 100      |
| Retire | 2029    | 2029       | 2015       | 2014      | 2004     | 2004     | 2010      | 2016      | 2011     | 2016      | 2015      | 2004     | 2004     |
| 1999   | 2488    | 161        | 113        | 385       | 562      | 171      | 109       | 187       | 110      | 188       | 62        | 228      | 97       |
| 2000   | 2468    | 161        | 113        | 385       | 562      | 171      | 109       | 187       | 110      | 188       | 62        | 228      | 97       |
| 2001   | 2488    | 161        | 113        | 385       | 562      | 171      | 109       | 187       | 110      | 188       | 62        | 228      | 97       |
| 2002   | 2468    | 161        | 113        | 385       | 562      | 171      | 109       | 187       | 110      | 188       | 62        | 228      | 97       |
| 2003   | 2488    | 161        | 113        | 385       | 562      | 171      | 109       | 187       | 110      | 188       | 62        | 228      | 97       |
| 2004   | 2468    | 161        | 113        | 385       | 562      | 171      | 109       | 187       | 110      | 188       | 62        | 228      | 97       |
| 2005   | 1994    | 161        | 113        | 385       | 562      | 0        | 0         | 187       | 110      | 188       | 62        | 228      | 0        |
| 2006   | 1994    | 161        | 113        | 385       | 562      | 0        | 0         | 187       | 110      | 188       | 62        | 228      | 0        |
| 2007   | 1994    | 161        | 113        | 385       | 562      | 0        | 0         | 187       | 110      | 188       | 62        | 228      | 0        |
| 2008   | 1994    | 161        | 113        | 385       | 562      | 0        | 0         | 187       | 110      | 188       | 62        | 228      | 0        |
| 2009   | 1994    | 161        | 113        | 385       | 562      | 0        | 0         | 187       | 110      | 188       | 62        | 228      | 0        |
| 2010   | 1994    | 161        | 113        | 385       | 562      | 0        | 0         | 187       | 110      | 188       | 62        | 228      | 0        |
| 2011   | 1807    | 161        | 113        | 385       | 562      | 0        | 0         | 187       | 110      | 188       | 62        | 228      | 0        |
| 2012   | 1821    | 161        | 113        | 385       | 562      | 0        | 0         | 110       | 0        | 62        | 228       | 0        | 0        |
| 2013   | 1821    | 161        | 113        | 385       | 562      | 0        | 0         | 110       | 0        | 62        | 228       | 0        | 0        |
| 2014   | 1821    | 161        | 113        | 385       | 562      | 0        | 0         | 110       | 0        | 62        | 228       | 0        | 0        |
| 2015   | 1059    | 161        | 113        | 385       | 0        | 0        | 0         | 110       | 0        | 62        | 228       | 0        | 0        |
| 2016   | 448     | 161        | 113        | 0         | 0        | 0        | 0         | 110       | 0        | 62        | 0         | 0        | 0        |
| 2017   | 274     | 161        | 113        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2018   | 274     | 161        | 113        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2019   | 274     | 161        | 113        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2020   | 274     | 161        | 113        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2021   | 274     | 161        | 113        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2022   | 274     | 161        | 113        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2023   | 274     | 161        | 113        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2024   | 274     | 161        | 113        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2025   | 274     | 161        | 113        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2026   | 274     | 161        | 113        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2027   | 274     | 161        | 113        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2028   | 274     | 161        | 113        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2029   | 274     | 161        | 113        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |

Large Unit Output Report

| UNIT   | PERRY 1 | BEAV. V. 2 | BEAV. V. 2 | Cheawic 1 | Eirama 4 | Eirama 3 | WSammis 7 | Manstie 3 | Eastak 5 | Manstie 2 | Manstie 1 | Eirama 1 | Eirama 2 |
|--------|---------|------------|------------|-----------|----------|----------|-----------|-----------|----------|-----------|-----------|----------|----------|
| Own %  | 13.77   | 13.88      | 47.53      | 100       | 100      | 100      | 31.17     | 13.66     | 31.16    | 7.89      | 29.19     | 100      | 100      |
| Retire | 2029    | 2029       | 2015       | 2014      | 2004     | 2004     | 2010      | 2016      | 2011     | 2016      | 2015      | 2004     | 2004     |
| 1999   | 16664   | 1071       | 807        | 2752      | 3965     | 1273     | 812       | 1379      | 809      | 1287      | 351       | 1238     | 479      |
| 2000   | 16692   | 1071       | 807        | 2752      | 3965     | 1273     | 812       | 1379      | 809      | 1288      | 353       | 1250     | 486      |
| 2001   | 16816   | 1071       | 807        | 2782      | 3965     | 1273     | 812       | 1380      | 812      | 1292      | 369       | 1305     | 507      |
| 2002   | 16895   | 1071       | 807        | 2752      | 3965     | 1273     | 812       | 1380      | 813      | 1293      | 379       | 1342     | 486      |
| 2003   | 17017   | 1071       | 807        | 2752      | 3965     | 1273     | 812       | 1381      | 815      | 1288      | 394       | 1396     | 545      |
| 2004   | 17117   | 1071       | 807        | 2752      | 3965     | 1273     | 812       | 1382      | 816      | 1289      | 406       | 1444     | 564      |
| 2005   | 13960   | 1071       | 807        | 2752      | 3965     | 0        | 0         | 1382      | 816      | 1300      | 409       | 1458     | 0        |
| 2006   | 14015   | 1071       | 807        | 2752      | 3965     | 0        | 0         | 1382      | 817      | 1302      | 418       | 1501     | 0        |
| 2007   | 14068   | 1071       | 807        | 2752      | 3965     | 0        | 0         | 1382      | 818      | 1304      | 427       | 1542     | 0        |
| 2008   | 14108   | 1071       | 807        | 2762      | 3965     | 0        | 0         | 1383      | 818      | 1305      | 434       | 1573     | 0        |
| 2009   | 14139   | 1071       | 807        | 2752      | 3965     | 0        | 0         | 1383      | 819      | 1307      | 439       | 1596     | 0        |
| 2010   | 14161   | 1071       | 807        | 2752      | 3965     | 0        | 0         | 1383      | 820      | 1308      | 442       | 1613     | 0        |
| 2011   | 12796   | 1071       | 807        | 2752      | 3965     | 0        | 0         | 0         | 821      | 1309      | 445       | 1626     | 0        |
| 2012   | 11502   | 1071       | 807        | 2752      | 3965     | 0        | 0         | 0         | 822      | 0         | 448       | 1637     | 0        |
| 2013   | 11512   | 1071       | 807        | 2752      | 3965     | 0        | 0         | 0         | 822      | 0         | 449       | 1646     | 0        |
| 2014   | 11521   | 1071       | 807        | 2752      | 3965     | 0        | 0         | 0         | 822      | 0         | 451       | 1653     | 0        |
| 2015   | 7556    | 1071       | 807        | 2752      | 0        | 0        | 0         | 0         | 822      | 0         | 451       | 1653     | 0        |
| 2016   | 3151    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 822      | 0         | 451       | 0        | 0        |
| 2017   | 1878    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2018   | 1878    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2019   | 1878    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2020   | 1878    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2021   | 1878    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2022   | 1878    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2023   | 1878    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2024   | 1878    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2025   | 1878    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2026   | 1878    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2027   | 1878    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2028   | 1878    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |
| 2029   | 1878    | 1071       | 807        | 0         | 0        | 0        | 0         | 0         | 0        | 0         | 0         | 0        | 0        |

Fuel Cost \$(1000)

| UNIT   | PERRY 1 | BEAV. V 2 | BEAV. V. 2 | Cheswic 1 | Eirama 4 | Eirama 3 | WSammis 7 | Mansfie 3 | Eastlak 5 | Mansfie 2 | Mansfie 1 | Eirama 1 | Eirama 2 |      |
|--------|---------|-----------|------------|-----------|----------|----------|-----------|-----------|-----------|-----------|-----------|----------|----------|------|
| Own %  | 13.77   | 13.88     | 47.53      | 100       | 100      | 100      | 31.17     | 13.66     | 31.16     | 7.89      | 29.19     | 100      | 100      |      |
| Redire | 2029    | 2029      | 2015       | 2014      | 2004     | 2004     | 2010      | 2010      | 2011      | 2016      | 2015      | 2004     | 2004     |      |
| 1999   | 170228  | 6405      | 5883       | 20582     | 41240    | 14096    | 9311      | 18063     | 9610      | 15277     | 4365      | 15533    | 6108     | 5745 |
| 2000   | 173594  | 6565      | 6030       | 21107     | 41892    | 14319    | 9460      | 18320     | 9760      | 15515     | 4468      | 15925    | 6290     | 5943 |
| 2001   | 178231  | 6730      | 6181       | 21635     | 42554    | 14545    | 9607      | 18586     | 9947      | 15825     | 4738      | 16883    | 6574     | 6326 |
| 2002   | 182411  | 6897      | 6335       | 22178     | 43226    | 14775    | 9761      | 18858     | 10112     | 16093     | 4947      | 17633    | 6973     | 6625 |
| 2003   | 187249  | 7070      | 6484       | 22731     | 43909    | 15008    | 9916      | 17135     | 10301     | 16404     | 5217      | 18644    | 7389     | 7031 |
| 2004   | 191920  | 7247      | 6656       | 23299     | 44602    | 15245    | 10073     | 17411     | 10474     | 16888     | 5461      | 19590    | 7776     | 7400 |
| 2005   | 154383  | 7428      | 6822       | 23882     | 45308    | 0        | 0         | 17687     | 10837     | 16946     | 5588      | 20085    | 0        | 0    |
| 2006   | 157986  | 7614      | 6993       | 24478     | 46023    | 0        | 0         | 17971     | 10823     | 17250     | 5817      | 21016    | 0        | 0    |
| 2007   | 161568  | 7804      | 7168       | 25081     | 46750    | 0        | 0         | 18257     | 11002     | 17541     | 6031      | 21924    | 0        | 0    |
| 2008   | 165053  | 7989      | 7347       | 25718     | 47489    | 0        | 0         | 18548     | 11184     | 17833     | 6217      | 22718    | 0        | 0    |
| 2009   | 168507  | 8200      | 7531       | 26361     | 48239    | 0        | 0         | 18844     | 11382     | 18153     | 6387      | 23410    | 0        | 0    |
| 2010   | 171872  | 8405      | 7719       | 27020     | 49002    | 0        | 0         | 19145     | 11566     | 18449     | 6537      | 24029    | 0        | 0    |
| 2011   | 155812  | 8615      | 7912       | 27895     | 49775    | 0        | 0         | 0         | 11762     | 18751     | 6684      | 24618    | 0        | 0    |
| 2012   | 139841  | 8830      | 8110       | 28387     | 50562    | 0        | 0         | 0         | 11954     | 0         | 6824      | 25174    | 0        | 0    |
| 2013   | 142653  | 9051      | 8312       | 29098     | 51361    | 0        | 0         | 0         | 12147     | 0         | 6965      | 25719    | 0        | 0    |
| 2014   | 145458  | 9277      | 8520       | 29825     | 52173    | 0        | 0         | 0         | 12341     | 0         | 7097      | 26225    | 0        | 0    |
| 2015   | 95626   | 9504      | 8732       | 30572     | 0        | 0        | 0         | 0         | 12852     | 0         | 7277      | 26889    | 0        | 0    |
| 2016   | 39120   | 9742      | 8951       | 0         | 0        | 0        | 0         | 0         | 12968     | 0         | 7459      | 0        | 0        | 0    |
| 2017   | 19160   | 9985      | 9175       | 0         | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2018   | 19639   | 10235     | 9404       | 0         | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2019   | 20131   | 10492     | 9639       | 0         | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2020   | 20633   | 10753     | 9880       | 0         | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2021   | 21149   | 11022     | 10127      | 0         | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2022   | 21678   | 11288     | 10380      | 0         | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2023   | 22220   | 11580     | 10640      | 0         | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2024   | 22776   | 11870     | 10906      | 0         | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2025   | 23344   | 12166     | 11178      | 0         | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2026   | 23929   | 12471     | 11458      | 0         | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2027   | 24527   | 12783     | 11744      | 0         | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2028   | 25140   | 13102     | 12038      | 0         | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2029   | 25767   | 13429     | 12338      | 0         | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0        | 0        | 0    |

Fuel Cost \$/mWh

| UNIT   | PERRY 1 | BEAV. V 2 | BEAV. V. 2 | Cheswic 1 | Eirama 4 | Eirama 3 | WSammis 7 | Mansfie 3 | Eastlak 5 | Mansfie 2 | Mansfie 1 | Eirama 1 | Eirama 2 |       |
|--------|---------|-----------|------------|-----------|----------|----------|-----------|-----------|-----------|-----------|-----------|----------|----------|-------|
| Own %  | 13.77   | 13.88     | 47.53      | 100       | 100      | 100      | 31.17     | 13.66     | 31.16     | 7.89      | 29.19     | 100      | 100      |       |
| Redire | 2029    | 2029      | 2015       | 2014      | 2004     | 2004     | 2010      | 2010      | 2011      | 2016      | 2015      | 2004     | 2004     |       |
| 1999   | 10.22   | 5.98      | 7.29       | 7.48      | 10.40    | 11.07    | 11.47     | 11.85     | 11.88     | 11.87     | 12.44     | 12.55    | 12.75    | 13.03 |
| 2000   | 10.40   | 6.13      | 7.47       | 7.87      | 10.57    | 11.25    | 11.65     | 11.83     | 12.06     | 12.08     | 12.68     | 12.74    | 12.94    | 13.24 |
| 2001   | 10.60   | 6.28      | 7.66       | 7.88      | 10.73    | 11.43    | 11.83     | 12.02     | 12.25     | 12.25     | 12.84     | 12.94    | 13.18    | 13.43 |
| 2002   | 10.80   | 6.44      | 7.85       | 8.06      | 10.90    | 11.61    | 12.02     | 12.22     | 12.44     | 12.45     | 13.05     | 13.14    | 13.38    | 13.63 |
| 2003   | 11.00   | 6.60      | 8.05       | 8.26      | 11.07    | 11.79    | 12.21     | 12.41     | 12.64     | 12.64     | 13.24     | 13.36    | 13.56    | 13.84 |
| 2004   | 11.21   | 6.77      | 8.25       | 8.47      | 11.25    | 11.98    | 12.41     | 12.60     | 12.84     | 12.85     | 13.45     | 13.57    | 13.79    | 14.07 |
| 2005   | 11.06   | 6.94      | 8.45       | 8.66      | 11.43    | 0.00     | 0.00      | 12.80     | 13.04     | 13.04     | 13.68     | 13.78    | 0.00     | 0.00  |
| 2006   | 11.27   | 7.11      | 8.67       | 8.89      | 11.61    | 0.00     | 0.00      | 13.00     | 13.25     | 13.25     | 13.92     | 14.00    | 0.00     | 0.00  |
| 2007   | 11.48   | 7.29      | 8.88       | 9.12      | 11.79    | 0.00     | 0.00      | 13.21     | 13.45     | 13.45     | 14.12     | 14.22    | 0.00     | 0.00  |
| 2008   | 11.70   | 7.47      | 9.10       | 9.35      | 11.98    | 0.00     | 0.00      | 13.41     | 13.67     | 13.67     | 14.32     | 14.44    | 0.00     | 0.00  |
| 2009   | 11.92   | 7.66      | 9.33       | 9.58      | 12.17    | 0.00     | 0.00      | 13.63     | 13.90     | 13.89     | 14.55     | 14.67    | 0.00     | 0.00  |
| 2010   | 12.14   | 7.85      | 9.57       | 9.82      | 12.36    | 0.00     | 0.00      | 13.84     | 14.10     | 14.10     | 14.79     | 14.90    | 0.00     | 0.00  |
| 2011   | 12.18   | 8.04      | 9.80       | 10.06     | 12.55    | 0.00     | 0.00      | 14.33     | 14.32     | 14.32     | 15.02     | 15.14    | 0.00     | 0.00  |
| 2012   | 12.16   | 8.24      | 10.05      | 10.32     | 12.75    | 0.00     | 0.00      | 0.00      | 14.54     | 0.00      | 15.23     | 15.38    | 0.00     | 0.00  |
| 2013   | 12.39   | 8.45      | 10.30      | 10.57     | 12.95    | 0.00     | 0.00      | 0.00      | 14.78     | 0.00      | 15.51     | 15.63    | 0.00     | 0.00  |
| 2014   | 12.83   | 8.66      | 10.56      | 10.84     | 13.18    | 0.00     | 0.00      | 0.00      | 15.01     | 0.00      | 15.74     | 15.87    | 0.00     | 0.00  |
| 2015   | 12.66   | 8.87      | 10.82      | 11.11     | 0.00     | 0.00     | 0.00      | 0.00      | 15.39     | 0.00      | 16.14     | 16.27    | 0.00     | 0.00  |
| 2016   | 12.42   | 9.10      | 11.09      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 15.78     | 0.00      | 16.54     | 0.00     | 0.00     | 0.00  |
| 2017   | 10.20   | 9.32      | 11.37      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2018   | 10.46   | 9.56      | 11.65      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2019   | 10.72   | 9.80      | 11.94      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2020   | 10.99   | 10.04     | 12.24      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2021   | 11.26   | 10.28     | 12.55      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2022   | 11.54   | 10.55     | 12.86      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2023   | 11.83   | 10.81     | 13.18      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2024   | 12.13   | 11.08     | 13.51      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2025   | 12.43   | 11.36     | 13.85      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2026   | 12.74   | 11.64     | 14.20      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2027   | 13.06   | 11.94     | 14.55      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2028   | 13.39   | 12.23     | 14.82      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2029   | 13.72   | 12.54     | 15.29      | 0.00      | 0.00     | 0.00     | 0.00      | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |

Market Energy Prices \$/MWh

| UNIT   | PERRY 1 | BEAV. V.2 | BEAV. V.2 | Cheswic 1 | Etama 4 | Etama 3 | WSamaria 7 | Manstie 3 | Eastak 5 | Manstie 2 | Manstie 1 | Etama 1 | Etama 2 |
|--------|---------|-----------|-----------|-----------|---------|---------|------------|-----------|----------|-----------|-----------|---------|---------|
| Own %  | 13.77   | 13.88     | 47.53     | 100       | 100     | 100     | 31.17      | 13.68     | 31.16    | 7.89      | 26.19     | 100     | 100     |
| Retire | 2029    | 2029      | 2015      | 2014      | 2004    | 2004    | 2010       | 2016      | 2011     | 2018      | 2015      | 2004    | 2004    |
| 1999   | 18.41   | 18.28     | 16.30     | 18.28     | 16.28   | 16.28   | 16.29      | 16.32     | 16.32    | 16.34     | 16.96     | 17.27   | 17.48   |
| 2000   | 17.11   | 16.96     | 16.97     | 16.96     | 16.96   | 16.95   | 16.94      | 16.97     | 17.00    | 17.02     | 17.65     | 18.11   | 18.38   |
| 2001   | 18.05   | 17.88     | 17.90     | 17.88     | 17.88   | 17.87   | 17.86      | 17.88     | 17.91    | 17.93     | 18.56     | 18.70   | 19.46   |
| 2002   | 19.21   | 19.01     | 19.03     | 19.02     | 19.02   | 19.01   | 18.99      | 19.03     | 19.04    | 19.08     | 19.77     | 19.93   | 20.87   |
| 2003   | 20.72   | 20.50     | 20.52     | 20.51     | 20.50   | 20.49   | 20.47      | 20.51     | 20.53    | 20.56     | 21.23     | 21.46   | 22.17   |
| 2004   | 22.40   | 22.16     | 22.19     | 22.17     | 22.17   | 22.15   | 22.14      | 22.16     | 22.19    | 22.23     | 22.89     | 23.13   | 24.03   |
| 2005   | 23.92   | 23.77     | 23.80     | 23.78     | 23.78   | 0.00    | 0.00       | 23.77     | 23.79    | 23.84     | 24.59     | 24.86   | 0.00    |
| 2006   | 26.46   | 26.30     | 26.33     | 26.31     | 26.30   | 0.00    | 0.00       | 26.30     | 26.33    | 26.38     | 27.16     | 27.40   | 0.00    |
| 2007   | 29.38   | 29.21     | 29.24     | 29.22     | 29.22   | 0.00    | 0.00       | 29.21     | 29.22    | 29.27     | 30.03     | 30.24   | 0.00    |
| 2008   | 30.16   | 30.04     | 30.07     | 30.05     | 30.05   | 0.00    | 0.00       | 30.02     | 30.06    | 30.09     | 30.66     | 30.86   | 0.00    |
| 2009   | 30.78   | 30.66     | 30.71     | 30.68     | 30.68   | 0.00    | 0.00       | 30.67     | 30.72    | 30.73     | 31.19     | 31.35   | 0.00    |
| 2010   | 30.95   | 30.86     | 30.90     | 30.87     | 30.87   | 0.00    | 0.00       | 30.85     | 30.86    | 30.91     | 31.29     | 31.39   | 0.00    |
| 2011   | 32.01   | 31.93     | 31.96     | 31.94     | 31.93   | 0.00    | 0.00       | 0.00      | 31.92    | 31.96     | 32.28     | 32.38   | 0.00    |
| 2012   | 34.20   | 34.13     | 34.16     | 34.14     | 34.14   | 0.00    | 0.00       | 34.09     | 0.00     | 34.40     | 34.54     | 0.00    | 0.00    |
| 2013   | 35.39   | 35.32     | 35.36     | 35.33     | 35.33   | 0.00    | 0.00       | 0.00      | 35.28    | 0.00      | 35.63     | 35.68   | 0.00    |
| 2014   | 37.80   | 37.74     | 37.78     | 37.75     | 37.75   | 0.00    | 0.00       | 0.00      | 37.70    | 0.00      | 37.97     | 38.06   | 0.00    |
| 2015   | 38.78   | 38.69     | 38.73     | 38.70     | 0.00    | 0.00    | 0.00       | 0.00      | 38.65    | 0.00      | 38.92     | 39.01   | 0.00    |
| 2016   | 39.69   | 39.66     | 39.70     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 39.62    | 0.00      | 39.90     | 0.00    | 0.00    |
| 2017   | 40.67   | 40.65     | 40.69     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 0.00     | 0.00      | 0.00      | 0.00    | 0.00    |
| 2018   | 41.68   | 41.66     | 41.71     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 0.00     | 0.00      | 0.00      | 0.00    | 0.00    |
| 2019   | 42.73   | 42.71     | 42.75     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 0.00     | 0.00      | 0.00      | 0.00    | 0.00    |
| 2020   | 43.79   | 43.77     | 43.82     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 0.00     | 0.00      | 0.00      | 0.00    | 0.00    |
| 2021   | 44.89   | 44.87     | 44.91     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 0.00     | 0.00      | 0.00      | 0.00    | 0.00    |
| 2022   | 46.01   | 45.99     | 46.04     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 0.00     | 0.00      | 0.00      | 0.00    | 0.00    |
| 2023   | 47.16   | 47.14     | 47.19     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 0.00     | 0.00      | 0.00      | 0.00    | 0.00    |
| 2024   | 48.34   | 48.32     | 48.37     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 0.00     | 0.00      | 0.00      | 0.00    | 0.00    |
| 2025   | 49.55   | 49.53     | 49.57     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 0.00     | 0.00      | 0.00      | 0.00    | 0.00    |
| 2026   | 50.79   | 50.77     | 50.81     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 0.00     | 0.00      | 0.00      | 0.00    | 0.00    |
| 2027   | 52.06   | 52.03     | 52.09     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 0.00     | 0.00      | 0.00      | 0.00    | 0.00    |
| 2028   | 53.36   | 53.34     | 53.39     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 0.00     | 0.00      | 0.00      | 0.00    | 0.00    |
| 2029   | 54.69   | 54.67     | 54.72     | 0.00      | 0.00    | 0.00    | 0.00       | 0.00      | 0.00     | 0.00      | 0.00      | 0.00    | 0.00    |

Market Energy Revenues (\$1000)

| UNIT   | PERRY 1 | BEAV. V.2 | BEAV. V.2 | Cheswic 1 | Etama 4 | Etama 3 | WSamaria 7 | Manstie 3 | Eastak 5 | Manstie 2 | Manstie 1 | Etama 1 | Etama 2 |
|--------|---------|-----------|-----------|-----------|---------|---------|------------|-----------|----------|-----------|-----------|---------|---------|
| Own %  | 13.77   | 13.88     | 47.53     | 100       | 100     | 100     | 31.17      | 13.68     | 31.16    | 7.89      | 26.19     | 100     | 100     |
| Retire | 2029    | 2029      | 2015      | 2014      | 2004    | 2004    | 2010       | 2016      | 2011     | 2018      | 2015      | 2004    | 2004    |
| 1999   | 273442  | 17438     | 13151     | 44812     | 84561   | 20724   | 13206      | 22458     | 13202    | 21010     | 5911      | 20992   | 8271    |
| 2000   | 285619  | 18160     | 13898     | 46876     | 67246   | 21583   | 13757      | 23395     | 13752    | 21890     | 6231      | 22180   | 8800    |
| 2001   | 303475  | 19147     | 14442     | 49212     | 70900   | 22754   | 14500      | 24873     | 14542    | 23166     | 6847      | 24401   | 9726    |
| 2002   | 324590  | 20365     | 15361     | 52342     | 75408   | 24188   | 15422      | 26255     | 16479    | 24671     | 7491      | 26742   | 10712   |
| 2003   | 352592  | 21855     | 16560     | 56430     | 81288   | 26085   | 16825      | 28318     | 16729    | 26662     | 8368      | 29965   | 12085   |
| 2004   | 383497  | 23736     | 17904     | 61008     | 87882   | 28200   | 17975      | 30620     | 18100    | 28883     | 9292      | 33406   | 13551   |
| 2005   | 333956  | 25463     | 19206     | 65447     | 94287   | 0       | 0          | 32849     | 19416    | 30687     | 10057     | 36244   | 0       |
| 2006   | 370781  | 28167     | 21245     | 72394     | 104296  | 0       | 0          | 36343     | 21511    | 34341     | 11360     | 41124   | 0       |
| 2007   | 413029  | 31283     | 23597     | 80406     | 115839  | 0       | 0          | 40370     | 23906    | 36170     | 12823     | 46635   | 0       |
| 2008   | 425508  | 32173     | 24268     | 82694     | 119133  | 0       | 0          | 41520     | 24592    | 39273     | 13308     | 48547   | 0       |
| 2009   | 435191  | 32853     | 24780     | 84440     | 121652  | 0       | 0          | 42412     | 25158    | 40170     | 13892     | 50034   | 0       |
| 2010   | 438223  | 33056     | 24934     | 84963     | 122404  | 0       | 0          | 42672     | 25309    | 40426     | 13830     | 50629   | 0       |
| 2011   | 409544  | 34194     | 25792     | 87666     | 126616  | 0       | 0          | 0         | 26203    | 41831     | 14365     | 52655   | 0       |
| 2012   | 393388  | 36552     | 27570     | 93947     | 135348  | 0       | 0          | 0         | 28018    | 0         | 15410     | 56545   | 0       |
| 2013   | 407404  | 37829     | 28534     | 97230     | 140078  | 0       | 0          | 0         | 29002    | 0         | 15997     | 58736   | 0       |
| 2014   | 435490  | 40419     | 30488     | 103888    | 149668  | 0       | 0          | 0         | 30993    | 0         | 17125     | 62809   | 0       |
| 2015   | 292895  | 41437     | 31254     | 106489    | 0       | 0       | 0          | 0         | 31773    | 0         | 17554     | 64468   | 0       |
| 2016   | 125068  | 42473     | 32035     | 0         | 0       | 0       | 0          | 0         | 32567    | 0         | 17993     | 0       | 0       |
| 2017   | 76370   | 43535     | 32835     | 0         | 0       | 0       | 0          | 0         | 0        | 0         | 0         | 0       | 0       |
| 2018   | 78279   | 44823     | 33656     | 0         | 0       | 0       | 0          | 0         | 0        | 0         | 0         | 0       | 0       |
| 2019   | 80238   | 45740     | 34498     | 0         | 0       | 0       | 0          | 0         | 0        | 0         | 0         | 0       | 0       |
| 2020   | 82242   | 46862     | 35360     | 0         | 0       | 0       | 0          | 0         | 0        | 0         | 0         | 0       | 0       |
| 2021   | 84299   | 48055     | 36244     | 0         | 0       | 0       | 0          | 0         | 0        | 0         | 0         | 0       | 0       |
| 2022   | 86407   | 49256     | 37151     | 0         | 0       | 0       | 0          | 0         | 0        | 0         | 0         | 0       | 0       |
| 2023   | 88566   | 50487     | 38079     | 0         | 0       | 0       | 0          | 0         | 0        | 0         | 0         | 0       | 0       |
| 2024   | 90780   | 51749     | 39031     | 0         | 0       | 0       | 0          | 0         | 0        | 0         | 0         | 0       | 0       |
| 2025   | 93050   | 53043     | 40007     | 0         | 0       | 0       | 0          | 0         | 0        | 0         | 0         | 0       | 0       |
| 2026   | 95377   | 54370     | 41007     | 0         | 0       | 0       | 0          | 0         | 0        | 0         | 0         | 0       | 0       |
| 2027   | 97762   | 55729     | 42033     | 0         | 0       | 0       | 0          | 0         | 0        | 0         | 0         | 0       | 0       |
| 2028   | 100206  | 57122     | 43084     | 0         | 0       | 0       | 0          | 0         | 0        | 0         | 0         | 0       | 0       |
| 2029   | 102710  | 58550     | 44160     | 0         | 0       | 0       | 0          | 0         | 0        | 0         | 0         | 0       | 0       |

Energy Margins (\$1000)

| UNIT   | PERRY 1 | BEAV. V.2 | BEAV. V.2 | Cheswic 1 | Eirama 4 | Eirama 3 | W'Seminis 7 | Mansfie 3 | Eastlak 5 | Mansfie 2 | Mansfie 1 | Eirama 1 | Eirama 2 |      |
|--------|---------|-----------|-----------|-----------|----------|----------|-------------|-----------|-----------|-----------|-----------|----------|----------|------|
| Own %  | 13.77   | 13.88     | 47.53     | 100       | 100      | 100      | 31.17       | 13.88     | 31.18     | 7.89      | 29.19     | 100      | 100      |      |
| Retire | 2029    | 2029      | 2015      | 2014      | 2004     | 2004     | 2010        | 2018      | 2011      | 2016      | 2015      | 2004     | 2004     |      |
| 1999   | 103214  | 11031     | 7268      | 24220     | 23321    | 6628     | 3895        | 6395      | 3592      | 5733      | 1548      | 5459     | 2163     | 1963 |
| 2000   | 112025  | 11595     | 7868      | 25569     | 25354    | 7264     | 4297        | 7075      | 3992      | 6375      | 1763      | 6255     | 2510     | 2308 |
| 2001   | 125244  | 12417     | 8261      | 27577     | 26346    | 8209     | 4893        | 8087      | 4595      | 7341      | 2109      | 7518     | 3052     | 2839 |
| 2002   | 142179  | 13468     | 9026      | 30166     | 32182    | 9423     | 5661        | 9397      | 5367      | 8578      | 2544      | 9109     | 3739     | 3519 |
| 2003   | 165343  | 14885     | 10066     | 33699     | 37389    | 11077    | 8709        | 11183     | 8428      | 10278     | 3149      | 11321    | 4696     | 4463 |
| 2004   | 191577  | 16489     | 11248     | 37709     | 43290    | 12955    | 7902        | 13209     | 7626      | 12197     | 3831      | 13816    | 5775     | 5530 |
| 2005   | 179573  | 18035     | 12384     | 41565     | 48979    | 0        | 0           | 15162     | 8779      | 14041     | 4469      | 16159    | 0        | 0    |
| 2006   | 212795  | 20553     | 14252     | 47815     | 58273    | 0        | 0           | 18372     | 10688     | 17091     | 5543      | 20108    | 0        | 0    |
| 2007   | 251481  | 23479     | 16429     | 55315     | 69089    | 0        | 0           | 22113     | 12904     | 20629     | 6792      | 24711    | 0        | 0    |
| 2008   | 260455  | 24174     | 16921     | 56976     | 71644    | 0        | 0           | 22872     | 13406     | 21440     | 7091      | 25829    | 0        | 0    |
| 2009   | 268684  | 24853     | 17249     | 58079     | 73413    | 0        | 0           | 23588     | 13776     | 22017     | 7305      | 26624    | 0        | 0    |
| 2010   | 266351  | 24651     | 17215     | 57943     | 73402    | 0        | 0           | 23527     | 13743     | 21977     | 7293      | 26600    | 0        | 0    |
| 2011   | 253732  | 25579     | 17880     | 60193     | 76841    | 0        | 0           | 0         | 14441     | 23080     | 7681      | 28037    | 0        | 0    |
| 2012   | 253547  | 27722     | 19460     | 65580     | 84784    | 0        | 0           | 0         | 16064     | 0         | 8586      | 31371    | 0        | 0    |
| 2013   | 264751  | 28778     | 20222     | 68132     | 88715    | 0        | 0           | 0         | 16855     | 0         | 9032      | 33017    | 0        | 0    |
| 2014   | 290032  | 31142     | 21968     | 74063     | 97495    | 0        | 0           | 0         | 18652     | 0         | 10028     | 36684    | 0        | 0    |
| 2015   | 197369  | 31833     | 22322     | 75817     | 0        | 0        | 0           | 0         | 19121     | 0         | 10277     | 37599    | 0        | 0    |
| 2016   | 85948   | 32731     | 23084     | 0         | 0        | 0        | 0           | 0         | 19599     | 0         | 10534     | 0        | 0        | 0    |
| 2017   | 57210   | 33550     | 23680     | 0         | 0        | 0        | 0           | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2018   | 58840   | 34388     | 24252     | 0         | 0        | 0        | 0           | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2019   | 60107   | 35248     | 24659     | 0         | 0        | 0        | 0           | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2020   | 61609   | 36129     | 25480     | 0         | 0        | 0        | 0           | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2021   | 63150   | 37033     | 26117     | 0         | 0        | 0        | 0           | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2022   | 64729   | 37858     | 26771     | 0         | 0        | 0        | 0           | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2023   | 66346   | 38907     | 27439     | 0         | 0        | 0        | 0           | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2024   | 68004   | 39879     | 28125     | 0         | 0        | 0        | 0           | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2025   | 69706   | 40877     | 28829     | 0         | 0        | 0        | 0           | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2026   | 71448   | 41899     | 29549     | 0         | 0        | 0        | 0           | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2027   | 73235   | 42946     | 30289     | 0         | 0        | 0        | 0           | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2028   | 75066   | 44020     | 31046     | 0         | 0        | 0        | 0           | 0         | 0         | 0         | 0         | 0        | 0        | 0    |
| 2029   | 76943   | 45121     | 31822     | 0         | 0        | 0        | 0           | 0         | 0         | 0         | 0         | 0        | 0        | 0    |

Unit Capacity Factors

| UNIT   | PERRY 1 | BEAV. V.2 | BEAV. V.2 | Cheswic 1 | Eirama 4 | Eirama 3 | W'Seminis 7 | Mansfie 3 | Eastlak 5 | Mansfie 2 | Mansfie 1 | Eirama 1 | Eirama 2 |       |
|--------|---------|-----------|-----------|-----------|----------|----------|-------------|-----------|-----------|-----------|-----------|----------|----------|-------|
| Own %  | 13.77   | 13.88     | 47.53     | 100       | 100      | 100      | 31.17       | 13.88     | 31.18     | 7.89      | 29.19     | 100      | 100      |       |
| Retire | 2029    | 2029      | 2015      | 2014      | 2004     | 2004     | 2010        | 2018      | 2011      | 2016      | 2015      | 2004     | 2004     |       |
| 1999   | 77.08   | 75.94     | 81.53     | 81.60     | 80.54    | 84.98    | 85.04       | 84.18     | 83.96     | 78.99     | 64.63     | 61.98    | 56.37    | 51.90 |
| 2000   | 77.21   | 75.94     | 81.53     | 81.60     | 80.54    | 84.98    | 85.04       | 84.18     | 83.96     | 78.93     | 64.69     | 62.58    | 57.20    | 52.84 |
| 2001   | 77.78   | 75.94     | 81.53     | 81.60     | 80.54    | 84.98    | 85.04       | 84.24     | 84.27     | 79.29     | 67.94     | 65.34    | 59.87    | 55.43 |
| 2002   | 78.15   | 75.94     | 81.53     | 81.60     | 80.54    | 84.98    | 85.04       | 84.24     | 84.37     | 79.36     | 69.78     | 67.19    | 61.43    | 57.20 |
| 2003   | 78.71   | 75.94     | 81.53     | 81.60     | 80.54    | 84.98    | 85.04       | 84.30     | 84.58     | 79.66     | 72.54     | 69.90    | 64.14    | 59.78 |
| 2004   | 79.17   | 75.94     | 81.53     | 81.60     | 80.54    | 84.98    | 85.04       | 84.37     | 84.68     | 79.72     | 74.75     | 72.30    | 66.37    | 61.90 |
| 2005   | 79.92   | 75.94     | 81.53     | 81.60     | 80.54    | 0.00     | 0.00        | 84.37     | 84.68     | 79.79     | 75.31     | 73.00    | 0.00     | 0.00  |
| 2006   | 80.23   | 75.94     | 81.53     | 81.60     | 80.54    | 0.00     | 0.00        | 84.37     | 84.79     | 79.91     | 76.96     | 75.15    | 0.00     | 0.00  |
| 2007   | 80.54   | 75.94     | 81.53     | 81.60     | 80.54    | 0.00     | 0.00        | 84.37     | 84.89     | 80.03     | 78.62     | 77.20    | 0.00     | 0.00  |
| 2008   | 80.77   | 75.94     | 81.53     | 81.60     | 80.54    | 0.00     | 0.00        | 84.43     | 84.89     | 80.09     | 79.91     | 78.76    | 0.00     | 0.00  |
| 2009   | 80.94   | 75.94     | 81.53     | 81.60     | 80.54    | 0.00     | 0.00        | 84.43     | 84.99     | 80.22     | 80.83     | 79.91    | 0.00     | 0.00  |
| 2010   | 81.07   | 75.94     | 81.53     | 81.60     | 80.54    | 0.00     | 0.00        | 84.43     | 85.10     | 80.28     | 81.38     | 80.76    | 0.00     | 0.00  |
| 2011   | 80.84   | 75.94     | 81.53     | 81.60     | 80.54    | 0.00     | 0.00        | 0.00      | 85.20     | 80.34     | 81.93     | 81.41    | 0.00     | 0.00  |
| 2012   | 81.00   | 75.94     | 81.53     | 81.60     | 80.54    | 0.00     | 0.00        | 0.00      | 85.31     | 0.00      | 82.49     | 81.98    | 0.00     | 0.00  |
| 2013   | 81.07   | 75.94     | 81.53     | 81.60     | 80.54    | 0.00     | 0.00        | 0.00      | 85.31     | 0.00      | 82.67     | 82.41    | 0.00     | 0.00  |
| 2014   | 81.13   | 75.94     | 81.53     | 81.60     | 80.54    | 0.00     | 0.00        | 0.00      | 85.31     | 0.00      | 83.04     | 82.78    | 0.00     | 0.00  |
| 2015   | 81.45   | 75.94     | 81.53     | 81.60     | 0.00     | 0.00     | 0.00        | 0.00      | 85.31     | 0.00      | 83.04     | 82.76    | 0.00     | 0.00  |
| 2016   | 80.65   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 85.31     | 0.00      | 83.04     | 0.00     | 0.00     | 0.00  |
| 2017   | 78.24   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2018   | 78.24   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2019   | 78.24   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2020   | 78.24   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2021   | 78.24   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2022   | 78.24   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2023   | 78.24   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2024   | 78.24   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2025   | 78.24   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2026   | 78.24   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2027   | 78.24   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2028   | 78.24   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |
| 2029   | 78.24   | 75.94     | 81.53     | 0.00      | 0.00     | 0.00     | 0.00        | 0.00      | 0.00      | 0.00      | 0.00      | 0.00     | 0.00     | 0.00  |

**FILE**

**CONTINUED**