Wolf, Block, Schorr and Solis-Cohen LLP

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ORIGINAL

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P.A.P.U.C.
SECRETARY'S BUREAU

February 27, 2001

HAND DELIVERY
James J. McNulty, Secretary
PA Public Utility Commission
Commonwealth Keystone Bldg, 2nd Floor
400 North Street
P.O. Box 3265
Harrisburg, PA 17105-3265

IRP-125042

RE: Reporting Requirements - 52 Pa. Code §§ 59.81 and 59.84

Dear Secretary McNulty:

Philadelphia Gas Works ("PGW") hereby requests (i) a 15-day extension, or until Friday, March 16, 2001, to file Forms 1A/1B/2A with calendar year 2000 information, and (ii) an extension until August 1, 2001 to file the Integrated Resource Planning ("IRP") Report, which is otherwise due June 1, 2001.

The overriding reason for these extension requests is PGW's severe staffing constraints. The individuals who must compile the information required by 52 Pa. Code §§ 59.81 and 59.84 are the same individuals that are involved in the following activities:

- Due February 28, 2001, and monthly thereafter – GCR compliance report
- Due March 1, 2001 – responses to hundreds of data requests in PGW's base rate proceeding
- Due March 1, 2001– interim GCR filing
- Due May 2, 2001 – 2001-2002 Annual GCR prefiling
- Due June 1, 2001 – 2001-2002 Annual GCR filing
- PGW's restructuring filing

Although PGW is committed to cooperating with the PUC in moving toward compliance with Commission requirements for traditional gas public utilities, these activities are straining PGW's already overburdened staff to its limits. In addition, although PUC staff has been very helpful in providing PGW with the filing information, PGW is essentially starting from "scratch" in setting up its system to compile and produce this information in a manner that allows for easy updates. However, PGW intends to submit the IRP Report earlier than August 1, 2001, if possible.

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Neither the Office of Trial Staff, the Office of Small Business Advocate nor Mr. William Hall of the Bureau of CEEP oppose these requests.

Accordingly, PGW respectfully requests that the Commission issue a Secretarial Letter approving these extension requests. If you have any questions concerning this filing, please contact me. Thank you.

Sincerely,

Kevin J. Moody
Wolf, Block, Schorr and Solis-Cohen LLP

KJM/jlg

cc: Karen Moury, Esq. Law Bureau
Andrew Tubbs, Esq. Law Bureau
William Hall, Bureau of CEEP

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of the foregoing document upon the participants, listed below, in accordance with the requirements of § 1.54 (relating to service by a participant).

VIA E-MAIL AND FIRST CLASS MAIL

Tim Wallick
Office of Trial Staff
PA Public Utility Commission
Pitnick Building
P.O. Box 3265
Harrisburg, PA 17105

James Mullins, Esquire
Office of Consumer Advocate
555 Walnut Street
Forum Place, 5th Fl.
Harrisburg, PA 17101

Steven Gray, Esquire
Office of Small Business Advocate
Commerce Building, Suite 1102
300 North Third Street
Harrisburg, PA 17101

Date: February 27, 2001

Kevin J. Moody

DSH:22785.1

A-125042

ARP 2000

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March 16, 2001

VIA HAND DELIVERY

IRP 125042

James McNulty, Secretary
PA Public Utility Commission
Commonwealth Keystone Bldg.
400 North Street, 2nd Floor
Harrisburg, PA 17120

RE: Philadelphia Gas Works - Annual Resource Planning Report

Dear Secretary McNulty:

Enclosed for filing please find the original and seven copies of Philadelphia Gas Works' Annual Resource Planning Report, Forms 1 & 2.

If you have any questions regarding this filing, please contact me.

Very truly yours,

Kevin J. Moody

Kevin J. Moody
For WOLF, BLOCK, SCHORR and SOLIS-COHEN LLP

KJM/jlg
Enclosures

cc: Calvin Birge,
Conservation, Economics and Energy Planning (w/enc)
Office of Consumer Advocate (w/enc)
Office of Small Business Advocate (w/enc)
Office of Trial Staff (w/enc.)

DSH:26576.1

IRP 125042

ANNUAL RESOURCE PLANNING REPORT

Philadelphia Gas Works

Philadelphia, Pennsylvania

2000

Forms 1 & 2

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, Pennsylvania 19122

ANNUAL RESOURCE PLANNING REPORT
Forms 1 & 2

Information Submitted in Compliance with and Pursuant to Title 52
Pennsylvania Code Section 59.81

PHILADELPHIA GAS WORKS

TABLE OF CONTENTS

Section 59.81: **General**

Pursuant to Section 59.81 (a), each major jurisdictional gas utility must file an annual resource planning report (ARPR) on or before June 1, 1996 and June 1 of each succeeding year, except Form 1A/2A which filing date is March 1. One (1) original and seven (7) copies of the report must be submitted to:

Secretary
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17105-3265

One copy should be submitted unbound for ease of duplication.

One courtesy copy should also be submitted to:

Pennsylvania Public Utility Commission
Conservation, Economics and Energy Planning
P.O. Box 3265
Harrisburg, PA 17105-3265
Attn. Calvin Birge

Also submit one (1) copy to the following:

Office of Consumer Advocate
555 Walnut Street
Forum Place, 5th Floor
Harrisburg, PA 17101-1921

Office of Small Business Advocate
Suite 1102, Commerce Building
300 N. Second Street
Harrisburg, PA 17101

Be sure to indicate the name and telephone number of at least one individual at the company who is familiar with the filing and will be available to answer any questions the Commission staff may have. You may also wish to list those individuals who are directly involved in the preparation of the various document components.

Information contained in annual resource planning reports must be utility-specific. The report should follow an outline similar to that which is contained herein, with narrative accompanying the required data. Forms may be modified to accommodate wide columns of numbers and enhance readability, but the general format should be used to maintain consistency.

This information is not generally considered confidential. Utilities are obligated to provide complete information. However, we will treat as confidential those portions of the report designated by the utility as proprietary. If a utility's proprietary claim is challenged, the Commission will direct the utility to file a petition for protective order pursuant to 52 PA Code 5.423.

All questions concerning the reporting requirements for Forms IRP Gas 1A through 9 should be addressed to Pennsylvania Public Utility Commission Bureau of Conservation, Economics and Energy Planning.

Response:

An original, seven (7) copies, and one unbound copy of Forms 1A, 1B, 2A, 2b, and 2C along with a general discussion of the methodologies, data sources, and assumptions are being submitted to meet the requirements of the March 1 filing.

All questions concerning the ARPR should be directed to Mr. William Muntzer, Director, Gas Planning, Rates and Regulatory Affairs at (215) 684-6623. The following individual will be available to answer questions concerning each section:

Mr. Pascal (Pat) J. Durante, Manager, Gas Planning at (215) 684-6317

Section 59.81 **Forms IRP-Gas 1A, and 1B – Annual and Peak Day Demand**

The load growth projections shall reflect the effects of price elasticity, market induced conservation, building and appliance efficiency standards, and the effects of the utility's existing and planned conservation and load management activities.

Response: Please see the attached documentation and forms.

FORM-IRP-GAS-1A: ANNUAL GAS REQUIREMENTS
REPORTING UTILITY: PHILADELPHIA GAS WORKS

(VOLUMES IN MMcF)

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Firm Sales:						
Retail Residential	42,851	42,136	46,941	45,386	45,201	44,731
Retail Commercial	9,429	11,351	11,991	12,006	12,218	12,149
Retail Industrial	1,406	1,299	1,494	1,544	1,599	1,622
Electric Power Generation						
Exchanges with Other Utilies						
Unaccounted For Gas	2,286	3,659	3,272	2,158	2,261	2,247
Company Use	67	69	81	93	93	93
Other (Off-system/Unbilled Estimate)						
Subtotal Firm Sales	56,039	58,514	63,779	61,187	61,372	60,843
Interruptible Sales:						
Retail	8,273	8,396	7,643	10,110	10,438	9,644
Electric Power Generation	169	208	137	168	167	122
Company's Own Plant	427	449	478	539	535	519
Unaccounted For Gas	294	293	258	285	295	277
Subtotal Interruptible Sales	9,163	9,346	8,516	11,101	11,436	10,561
SUBTOTAL FIRM AND INTERRUPTIBLE SALES:	65,201	67,860	72,295	72,288	72,808	71,404
Transportation:						
Firm Residential						
Firm Commercial						
Firm Industrial	11,115	11,012	9,228	10,546	10,546	10,083
Interruptible Residential						
Interruptible Commercial		-	-	-	-	-
Interruptible Industrial	2,427	2,988	3,263	3,802	4,216	7,525
Electric Power Generation						
Subtotal Tranportation	13,542	14,000	12,491	14,348	14,762	17,608
TOTAL GAS REQUIREMENTS	78,743	81,860	84,786	86,636	87,570	89,012
Increase (Decrease)	na	3,117	2,926	1,850	934	1,442
Percent Change (%)	na	3.96%	3.57%	2.18%	1.08%	1.65%

FORM-IRP-GAS-1B:PEAK DAY REQUIREMENTS
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(VOLUMES IN MMcF)

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Firm Sales:						
Retail Residential	384.5	413.2	379.0	519.0	516.5	511.1
Retail Commercial	84.4	111.3	96.8	137.1	139.5	139.1
Retail Industrial	12.6	12.6	12.4	17.5	17.5	18.1
Electric Power Generation	0.0	0.0	0.0	0.0	0.0	0.0
Exchanges with Other Utilies	0.0	0.0	0.0	0.0	0.0	0.0
Unaccounted For Gas	20.6	36.2	26.3	24.5	25.9	25.7
Company Use	0.5	0.6	0.5	1.4	1.4	1.4
Other (Off-system/Unbilled Estimate)	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Firm Sales	502.7	573.8	514.9	699.5	700.8	695.3
Interruptible Sales:						
Retail	37.5	52.9	4.2	0.0	0.0	46.9
Electric Power Generation	0.3	0.3	0.0	0.0	0.0	0.0
Company's Own Plant	1.3	1.9	1.1	0.0	0.0	0.0
Unaccounted For Gas	0.2	2.0	0.2	0.0	0.0	1.7
Subtotal Interruptible Sales	39.3	57.1	5.5	0.0	0.0	46.9
SUBTOTAL FIRM AND INTERRUPTIBLE SALES:	541.9	630.9	520.4	699.5	700.8	742.2
Transportation:						
Firm Residential	0.0	0.0	0.0	0.0	0.0	0.0
Firm Commercial	0.0	0.0	0.0	0.0	0.0	0.0
Firm Industrial	15.7	30.7	20.5	0.0	0.0	0.0
Interruptible Residential	0.0	0.0	0.0	0.0	0.0	0.0
Interruptible Commercial	0.0	0.0	0.0	0.0	0.0	0.0
Interruptible Industrial	1.0	2.9	0.8	0.0	0.0	0.0
Electric Power Generation	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Tranportation	16.7	33.6	21.3	0.0	0.0	0.0
TOTAL GAS REQUIREMENTS	558.6	664.6	541.7	699.5	700.8	742.2
Increase (Decrease)	na	106	(123)	158	1	41
Percent Change (%)	na	18.96%	-18.49%	29.13%	0.20%	5.91%

Introduction

By Order entered January 11, 1996, the Pennsylvania Public Utility Commission (PUC) adopted final regulations (52 PA Code §§ 59.81 - 59.84) which set forth revised requirements for filing an Annual Resource Planning Report (the Plan). The Plan submitted represents Philadelphia Gas Works' (PGW or the Company) belief that integrated resource planning (IRP) is a workable approach to utility planning.

This plan summary contains historical data and projections for annual, winter and peak day supply to meet projected customer requirements in a least cost manner, while ensuring adequate and reliable service. It is organized into the following 6 sections:

I. PGW's Overall Approach to Integrated Resource Planning

II. Supply Forecasting Methodology and Assumptions

III. Demand Forecasting Methodology and Assumptions

IV Peak Day Forecasting Methodology and Assumptions

V. PGW Corporate Modeling System

I. PGW's Overall Approach to Integrated Resource Planning

PGW Optimization Standard for Purchasing and Utilizing Gas Supplies

As reasonably anticipated, PGW intends meeting its contractual obligations to supply all of its current customers in its service territory on the coldest day and throughout the season. Projected customer requirements for design day and design winter conditions form the basis for capacity commitments for pipeline supply, storage, and transportation contracting.

Natural gas supplies are purchased under a portfolio approach, intending to secure the lowest overall price, consistent with the primary corporate goals of reliability and security of supply. In addition, consideration is given to maintaining a diversity of sources and types of supply, coupled with contractual and operational flexibility on both a daily and seasonal basis. Short term purchases from spot market sources are utilized to the maximum degree that they are more economical, available, and transportable.

Natural gas supplies are utilized so as to maximize net contributions subject to reliability constraints. Supply contract obligations are honored and prudent Gas Control operational requirements are assumed. Storage contracts are drawn upon so as to always maintain an inventory level sufficient for protection in the event that design temperature conditions should occur in the remaining segment of any winter season. Within the above parameters, priority is given to utilizing the most economical sources of supply first, within the context of preserving the capability of meeting seasonal and annual demands rather than the momentary daily requirements. All facilities and sources of supply, flowing, storage and LNG are available to achieve the intended end; namely, maximizing net contributions subject to reliability constraints.

II. Supply Forecasting Methodology and Assumptions
Basic Assumptions

The PGW Gas Supply Policy Committee, representing senior corporate management as well as Gas Planning, Gas Control, Gas Supply, Regulatory and Marketing departmental management, approved the aforementioned Optimization Standard for Purchasing and Utilizing Gas Supplies (Section I). All natural gas purchases continue to be made in accordance with this standard. Projected sales, revenues and natural gas expenses in this report reflect application of this agreement, particularly in the areas of inventory valuation, priorities of gas selection and interruptible supply availability.

PGW's supply strategy incorporates maintaining full current winter day deliverability with regard to transportation capacity. A variety of long term supply contracts are necessary to support pipeline transportation capacity because reliance upon best effort spot suppliers to fill wintertime capacity required to meet firm customers' demands has proven to be an unreliable alternative. As a result, longer-term contracts are utilized to support firm transportation capacity. To accomplish this end, the Company purchases winter supply contracts with daily deliverability equal to approximately 58% of the contractual daily transportation entitlements on its two interstate pipelines with direct connections to PGW's service territory. Additionally, these supply contracts match the contractual entitlements of the two pipelines by sourcing supply in a manner consistent with the pipeline's upstream contractual requirements. In this way, PGW not only helps ensure the security of supply by sourcing the gas from geographically diverse supply regions but also this diversity allows PGW to take advantage of the pricing basis differential inherent in these supply locations.

These contracts all contain the ability to fix the price for upcoming months as well as to allow the pricing to default to an agreed upon market index when there is no market advantage in fixing a price before the month begins. PGW uses this fixed price option in conjunction with its Gas Cost Rate (GCR) filing (GCR filing includes pricing based upon the Standard and Poors' "DRI Price Forecast") by always attempting to buy under the DRI forecasted prices.

II. Supply Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

Through the matching of the duration supply contracts to a seasonal demand, such as the Winter operating season, the firm rate payers benefit from not paying demand charges year-round.

A second component of PGW's supply portfolio, or a volume equal to 32% of pipeline capacity, is purchased gas based on a first-of-the-month index pricing methodology, with contracts that allow for daily change in volumetric take. This allows the Company to effectively shut-off higher priced supply, replacing such supply with daily cheaper spot priced gases. Under assumed normal winter conditions, PGW utilizes certain storage fields (ANR, Equitrans, Eminence and Washington), in a manner similar to third party supply.

Specifically, these storage contracts do not contain bundled transportation to the PGW city gate. Therefore, storages must flow within PGW's contractual upstream capacity rights on TETCO and TGPL. Typical daily delivery from these fields utilizes approximately 10% of the daily TETCO and TGPL capacity rights to the Philadelphia city gates. These storage fields also act as a physical fixed price counter to winter price conditions since the WACOG in these storages typically reflects a winter/summer pricing differential.

PGW's summer purchasing strategy also incorporates a portfolio approach to the purchase of system supply and storage refill. The GCR filing, with its Standard and Poors' based pricing, is again used as a yardstick in purchasing supply for both system supply and storage refill. PGW attempts to always purchase a portion of its supply needs below the projected GCR cost estimate with a portion of the portfolio purchased at default, first-of-the-month pricing. These first of the month pricing option contracts, in most instances, allow PGW to evaluate daily spot prices and provide for a turn-off of first-of-the-month index priced supply in favor of the purchase of more advantageous daily spot purchases or, operating conditions permitting, use of underground storage and LNG.

II. Supply Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

Operating flexibility is sustained by variations in contract stipulations, to permit the system to swing on the most economical gas supplies available while maintaining the ability to supply rapidly fluctuating temperature requirements. Storage facilities are substituted wherever opportunity affords to reduce annual expense for flowing 365 day pipeline service without damage to peak day and peak winter season delivery capability. Direct control of all storage permits PGW to minimize winter costs by injecting lower priced summer purchases and to cycle storage to balance daily take fluctuations to avoid overrun/balancing charges.

Operating conditions permitting, the Company enters into the FERC approved capacity release market to offset demand charges it pays for its firm transportation and/or the incremental off-systems sales market when it is economically advantageous for the firm rate payer. In both instances, these opportunities are sought only when firm customer needs are satisfied. Additionally, PGW's bundled storages and LNG can be utilized as a substitute for higher price gas supply based on market pricing conditions and the results of PGW's weekly status report. Effectively, the Gas Supply Group is at all times studying the market for any economic advantage it can bring to the firm rate payer.

III. Demand Forecasting Methodology and Assumptions
Basic Assumptions

PGW uses a combination of four basic methods to develop demand projections. They are:

1) Customer Survey - Information as gathered by PGW's Marketing Department and used for annual projections by month and year.
2) Relative End Use -- Projections via Marketing methods of customer load sizing by appliance type, maximum input, maximum summer and winter full load hour (FLH) calculations which are used to develop yearly and monthly demand requirements.
3) Historical Data -- data showing long-term demand trends, conservation and utilization patterns by the various classes of customers -- Residential, Commercial, Industrial and Interruptible.
4) Judgement -- Experienced opinion as applied to the evaluation of the combination of all data to develop the basic demand requirements.

Customer Demand

The total system-wide demand is a function of the projected gas demand per customer and the anticipated number of customers in each class. In determining customer demand, consideration is given to projecting current customer usage, augmented by significant gains or losses in each of 49 homogeneous groups for the period being projected. The Gas Planning Department attempts to determine, for each customer class, the level of demand reliable to experienced temperature and the component of demand that is apparently not affected by changes in temperature. Within each class the most recent summer and winter usage patterns are established from historical records. Summer data provides an insight into each class of customer's non-temperature sensitive load requirements, baseload, which can be expressed in terms of thousands of cubic feet (Mcf) per day, per customer. Similarly, winter data, after removal of the daily baseload level, reveals the temperature sensitive load requirements for each class of customer.

This usage primarily reflects space heating, but also includes such other temperature sensitive needs as water heating attributable to colder ground water inlet temperatures and similar process variations, as well as supplementary range heating. This overall heating requirement can be expressed in terms of the cubic feet of gas utilized per degree of temperature change on a per customer basis for each separate customer classification.

III. Demand Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

In addition, consideration must be given to the variation of customer utilization patterns, for space heating over the year, recognizing the transitional fall start-up of heaters, the deep winter period needs and the tapering off and shut-down which occurs in the spring. These usage patterns taken in conjunction with anticipated customer counts and appropriate temperature patterns form the basis of determining class and total system demands. Due to the inconsistencies of weather and weather forecasting techniques, no attempt is made to predict the specific daily temperatures of the projection period. Instead, PGW has developed a normal monthly temperature pattern by analyzing statistical records of actual temperature patterns over a 40-year period. This pattern reflects 4600 degree days annually distributed in a stylized pattern preserving the monthly range of colder to warmer daily temperatures experienced, but without regard to calendar date.

The term "degree days" quantifies the number of degrees of temperature below a base level of 65 degrees Fahrenheit as a tool to measure space heating requirements, i.e., on a day experiencing an average temperature of 40 degrees F. there would be counted 25 degree days. The annual 4600 degree days, which compose the PGW normal monthly temperature patterns, form the basis of the calculation of the temperature sensitive component of demand. The application of the above described baseload and space heating factors and customer counts, when applied to a calendar based daily temperature pattern, produces a daily statement of total customer requirements identified as sendout. It should be noted that there is a difference between sendout volume and sales volume. Sendout represents those volumes that left the plant initially to supply customers' requirements, while sales are those volumes reported on customer meters. The variation between sendout and sales is that portion which is lost and unaccounted for in the PGW distribution system. In addition, they differ on a monthly basis in the distribution pattern. For the convenience of distributing meter reading and billing efforts uniformly over the available number of working days in a month, the majority of PGW customers are divided into 20 individual groups or cycles, containing residential, commercial and industrial accounts within a specific geographic area.

III. Demand Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

In addition, consideration must be given to the variation of customer utilization patterns, for space heating over the year, recognizing the transitional fall start-up of heaters, the deep winter period needs and the tapering off and shut-down which occurs in the spring. These usage patterns taken in conjunction with anticipated customer counts and appropriate temperature patterns form the basis of determining class and total system demands. Due to the inconsistencies of weather and weather forecasting techniques, no attempt is made to predict the specific daily temperatures of the projection period. Instead, PGW has developed a normal monthly temperature pattern by analyzing statistical records of actual temperature patterns over a 40-year period. This pattern reflects 4600 degree days annually distributed in a stylized pattern preserving the monthly range of colder to warmer daily temperatures experienced, but without regard to calendar date.

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III. Demand Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

When these cycle customers are billed each month, they reflect meter reading usage not for the calendar month being billed, but for the number of days and temperature pattern of degree-days experienced during their specific interval between readings.

For example, assume the month of January contained 900 degree-days. The customers in cycle 10 being billed for the month of January might have had meter readings taken on December 15 and again on January 17. Sales billed and reported in company records for these customers would have reflected the number of days and degree days between these reading dates rather than the 900 degree days of the month. Similarly, cycle 1 customers that might have had meter readings taken on December 1 and January 2 would reflect principally the December temperature experience, while cycle 20 customers, with meter readings taken possibly December 28 and January 29, would reflect principally the January temperature experience.

An average of the 20 cycles (Average Cycle Degree-Days) is used as the temperature patteren upon which to project the potential volume of sales in the estimation period. Both projections of sales and sendouts represent the full potential demand for that period from both firm and interruptible customers.

Methodology Used to Develop Monthly Estimates

A trial domestic factor is developed by class of customer from sales reported for the previous year's summer months. This average factor is then utilized in the sendout formula with the customer counts for the months of July, August and September. A comparison between what the formula calculates and the actual experienced for those three months is ascertained and the trial domestic factors are finalized to replicate the total sendout experienced. The finalized domestic factors (DOMs) are then utilized in conjunction with the actual sales and customer counts for the months of December, January and February to determine the average Mcf per degree day for each of the individual months for the remaining temperature sensitive load. The results are weighted by degree-days to give an average value which is utilized as a trial value for the heating factor.

III. Demand Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

The finalized domestic factor and the trial heating factor developed, as such, are then applied in the sendout calculations, together with customer counts for the months of December, January and February, the peak winter cold period, to project an estimated sendout for each of these months. The projected sendout is then compared with the actual sendout experienced. Any variation between the projected and actual is adjusted to force the replication of the actual sendout experience, thus resulting in the determination of a finalized heating factor.

To project the number of customers for each individual rate class, the following categories of customers are reviewed and accumulated individually: current customers are ascertained from the number of billings data available from sales and revenue actually experienced immediately prior to the commencement of a budget run. Declines are projected for anticipated losses to electric and other fuels or demolitions and from transfers to other rates. Direct transfers from a non-heating to a heating account, as a result of a current customer's conversion to gas heat, moves the domestic load to the new category. Projected additional customers are developed within the Marketing Department, where staff dealing with individual classes of customers and having the most direct knowledge of conditions within their sphere, project annual load additions which are translated into count based upon typical customer usage for that individual customer class. The approximate month of turn-on is also developed to permit reflection of the effective portion of the load addition within the fiscal period under study. Interruptible class customers, as well as other large special accounts, are detailed individually incorporating expected gains and losses as direct contact has indicated.

The base revenue projections for both firm and interruptible customer groups are derived as the product of the projected sales volumes and the present tariff rate for each individual customer class within each group. The GCR revenue projections are derived as the product of the GCR factor and the projected sales volumes to the non-interruptible customers.

IV. Peak Day Forecasting Methodology and Assumptions

Each year, a six year estimate of Peak Day requirements anticipated under design peak day operating conditions is prepared to ensure that adequate resources are under contract. Additionally, to further ensure that PGW can fulfil its utility obligation to its firm customer requirements on the design peak day and design peak hour.

The projected demands for design day, as delineated on Form 1B (attached), are developed utilizing previous winter period data; for this report, from 1994-95 through 1999-00, for all weekdays where the temperature average for the day is 32 degrees Fahrenheit or below. The total sendout for these days as recorded under actual conditions is reduced to base sendout by removal of the interruptible load. A computer generated linear regression procedure is utilized to develop a calculated sendout versus the actual sendout from which the necessary constants (factors) required to have the calculated sendout match, within a reasonable percent of error to the actual sendout are developed. The process is repeated in a quadratic regression and a cubic regression procedure. This approach produces a curvilinear regression method, the results of which are analyzed by statistical significance testing and the best-fit curve is selected for use in developing the design day sendouts. The factors derived from the curve selected are used to calculate current load requirements for a 0 degrees F day and a -5 degrees F hour. PGW's Marketing Department's load projections for present and future years are then applied to these requirements to develop design day and design hour present and future load requirements. This is achieved by the addition of the projected marketing load growth expectations on an annual basis (by day) to the derived base-year design day requirements.

V. PGW Corporate Modeling System

General Description

The corporate model system is a tool used by PGW management to project sales, revenues and expenses, as well as to examine key planning strategies and evaluate their effects on company operations. The system provides the ability to determine the results of alternate plans and scenarios, while at the same time allowing for responses to "what if" type situations quantifying revenue and expenses. The system is totally interactive in that it combines the power of the computer with the experience of management to develop both short and long range projections based upon experienced historical data for sales and sendout volumes, raw material expenses and sale revenues. The corporate model system is composed of five separate models. Each model operates independently, but requires substantial external data inputs as well as data output results from one or more of the other models in the system.

Gas Demand Model

The gas demand model is used to forecast total requirements for gas based upon current customer usage experience with adjustments for projected gains and losses. Input data includes domestic and space heating usage factors, customer counts by rate classifications, temperature patterns and results in projections of sales and sendout volumes. Detail and summary reports include average usage per customer and demands by rate classification. This data is transferred to the supply model.

Gas Supply Model

The supply model is used to dispatch the various supply sources in accordance with contract availability limitations. It develops the necessary balance between supply and demand, which reflects plant fuel and storage re-injection requirements as well as customer demands, by identifying the availability of interruptible load balancing sales. Detail and summary reports include daily and monthly load requirements, the volumes taken from each source by pipeline contract, storage balances, supplemental fuel requirements, etc. Data is transferred to both the cost model and the revenue model downstream.

V. PGW Corporate Modeling System (Continued)

Gas Cost Model

The gas cost model is used to determine natural gas and other raw material costs dispatched. The model tracks the various cost components of each contract - the demand, capacity, commodity, injection and withdrawal charges - providing monthly and annual details and summary information, including inventory valuations and expenses for supplemental LPG and LNG supplies. It transfers these expenses to the Gas Cost Rate Model.

Gas Cost Rate Model

The gas cost rate model is used to develop a base fuel charge and a fuel adjustment factor known as the Gas Cost Rate (GCR). It ascribes responsibility for the raw material costs, to firm and interruptible classes in accordance with PGW's tariff requirements, assigning cost on an as-used basis to customer classes applicable to such charges, and compensates for natural gas refunds and previous over or under billing of fuel expenses. Detail summary reports include specifics of raw material adjustment, statements of reconciliation, and determination of applicable sales and expenses, transferring its results to the revenue model.

Revenue Model

The revenue model is used to project billed revenue by rate classification in accordance with PGW's rate tariffs. It prepares both base non-fuel and base fuel revenue statements, GCR revenues, senior citizen discounts, and cycle and budget billing information, all detailed by rate classification. The detail and summary reports provided by this model are directed to the accounting and financial departments for inclusion in various financial reviews.

Summary

The corporate model system allows PGW management to effectively address supply/demand balancing, supply facilities planning, projected sales, cost, revenues, and sendout volumes in a timely manner. Results assist in the development of PGW's annual Operating Budget.

V. PGW Corporate Modeling System (Continued)

The model allows the evaluation of future winter requirements on both normal and design temperature patterns and the extrapolation of current years based upon the experience to date and an assumption of temperatures anticipated for the remaining period of the year, this latter acting as a guide for both financial cash flow planning and winter operations.

Other Forecasts

In addition to the Operating Budget forecasts identified above in conjunction with the modeling system, capital budget planning is facilitated by providing a forecast of design day/design hour load requirements. This recognizes the usage patterns exhibited during the most recent five winters on weekdays with temperatures of 32 degrees F. and below. Load growth assumptions extend this experience into future years. The design day conditions represent a weekday at 0 degree F. The design hour represents a -5 degree F. temperature and approximately 5% of the total peak day load requirements.

Section 59.81 **Forms IRP-Gas 2A, 2B and 2C - Annual and Peak Day Energy Resources, Transmission and Storage Contracts**

The forecast of energy sources shall indicate sources of all presently available and new supplies which the utility estimates will become available, displayed by component parts.

Response: Please see the attached documentation and forms.

FORM-IRP-GAS-2A: NATURAL GAS SUPPLY
TABLE : PEAK DAY SUPPLY
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(Volumes in MMcf)

	Historical Data		Current Year	Three Year Forcast		
Index Year	-2	-1	0	1	2	3
Actual Year	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Gas Supply for Sales Service						
TETCO	119	119	95	118	118	118
TRANSCO	118	114	138	136	136	136
Spot Purchases						
Storage Withdraws	216	198	166	210	211	211
LNG/SNG/Propane Purchases	88	198	122	234	235	277
Company Production						
Local Purchases						
Exchanges with other LDCs						
Other						
Total Gas Supply for Sales	541	629	521	699	701	742
Total Transportation Services						
TOTAL SALES, GAS SUPPLY AND TRANPORTATION SERVICE	541	629	521	699	701	742
Deductions						
Curtailments						
Underground Storage Injections						
LNG Liquefactions						
Sales to other LDC's						
Total Deductions						
NET GAS SUPPLY	541	629	521	699	701	742

conversion @ 1028 Btu

2000-2001 Due to operational emergency deliverablity reduced.

FORM-IRP-GAS-2B: NATURAL GAS TRANSPORTATION
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(volumes in Mmcf)

	Historical Data				Current Year		Three Year Forcast					
Index Year	-2		-1		0		1		2		3	
Actual year	1998-1999		199-2000		2000-2001		2001-2002		2002-2003		2003-2004	
City Gate Transportation Contracts:	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
CONSOLIDATED	3,723	52	3,723	52	3,723	52	3,723	52	3,723	52	3,723	52
TETCO	2,570	43	2,570	43	2,570	43	2,570	43	2,570	43	2,570	43
TETCO	2,390	20	2,390	20	2,390	20	2,390	20	2,390	20	2,390	20
CONSOLIDATED	453	4	453	4	453	4	453	4	453	4	453	4
Total	9,137	120	9,137	120	9,137	120	9,137	120	9,137	120	9,137	120
Upstream Transportation Contracts:												
TRANSCO	58,546	160	58,546	160	58,546	160	58,546	160	58,546	160	58,546	160
TETCO	26,578	73	26,578	73	26,578	73	26,578	73	26,578	73	26,578	73
TETCO	8,442	23	8,442	23	8,442	23	8,442	23	8,442	23	8,442	23
TETCO	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17
TETCE	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17
TRANSCO	172	2	172	2	172	2	172	2	172	2	172	2
Total	98,456	293	98,456	293	98,456	293	98,456	293	98,456	293	98,456	293
Storage-Related Transportation Contracts:												
CONSOLIDATED	9,110	22	9,110	22	9,110	22	9,110	22	9,110	22	9,110	22
CONSOLIDATED	2,760	7	2,760	7	2,760	7	2,760	7	2,760	7	2,760	7
EQUITABLE	1,911	5	1,911	5	1,911	5	1,911	5	1,911	5	1,911	5
Total	13,781	33	13,781	33	13,781	33	13,781	33	13,781	33	13,781	33

Conversion @ 1030 Btu

FORM-IRP-GAS-2C: NATURAL GAS STORAGE [1]
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(volumes in Mmcf)

	Historical Data				Current Year		Three Year Forcast					
Index Year	-2		-1		0		1		2		3	
Actual year	1999		2000		2001		2002		2003		2004	
	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
Consolidated Natural Gas	3,723	52	3,723	52	3,723	52	3,723	52	3,723	52	3,723	52
Consolidated Natural Gas	3,481	28	3,481	28	3,481	28	3,481	28	3,481	28	3,481	28
Transcontinental Transmission Corp.	3,086	36	3,086	36	3,086	36	3,086	36	3,086	36	3,086	36
Texas Eastern Transmission Corp.	2,467	43	2,467	43	2,467	43	2,467	43	2,467	43	2,467	43
Texas Eastern Transmission Corp.	2,219	20	2,219	20	2,219	20	2,219	20	2,219	20	2,219	20
ANR	1,824	13	1,824	13	1,824	13	1,824	13	1,824	13	1,824	13
Equitrans	507	5	507	5	507	5	507	5	507	5	507	5
Consolidated Natural Gas	453	4	453	4	453	4	453	4	453	4	453	4
Transcontinental Transmission Corp.	165	16	165	16	165	16	165	16	165	16	165	16
Total	17,925	218	17,925	218	17,925	218	17,925	218	17,925	218	17,925	218

1 Rank contracts in order of magnitude for the current year, noting the transportation provided *and* termination date for each contract reported
Reporting should proceed along rank ordering until 75% of total is accounted for, or until ten contracts have been *listed*, whichever occurs first.

Conversions at 1030 Btu

	Contract *Expiration Date* [2]
Consolidated Natural Gas	3/31/13
Consolidated Natural Gas	3/31/06
Transcontinental Transmission Corp.	Evergreen
Texas Eastern Transmission Corp.	4/30/12
Texas Eastern Transmission Corp.	4/30/12
ANR	3/31/13
Equitrans	3/31/02
Consolidated Natural Gas	4/15/01
Transcontinental Transmission Corp.	10/31/13

2 For purposes of this report, contracts due to expire are assumed renewed for the forecast years.

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August 1, 2001

ORIGINAL

01 AUG -2 AM 8:02

SECRETARY'S BUREAU

VIA HAND DELIVERY

James McNulty, Secretary
PA Public Utility Commission
Commonwealth Keystone Bldg.
400 North Street, 2nd Floor
Harrisburg, PA 17120

IRP-125042

RE: Philadelphia Gas Works - Annual Resource Planning Report

Dear Secretary McNulty:

Enclosed are the original and seven copies of the Summary Report and Forms 3-9 of the Philadelphia Gas Works' Annual Resource Planning Report for calendar year 2000. Staff and the other parties required to be served per 52 Pa. Code § 59.81(a) granted PGW's request to submit these documents today rather than June 1 because PGW did not maintain the required data in the format requested. Forms 1 and 2 had been submitted on March 16, 2001.

If you have any questions regarding this filing, please contact me.

Very truly yours,

Kevin J. Moody

Kevin J. Moody
For WOLF, BLOCK, SCHORR and SOLIS-COHEN LLP

KJM/jlg
Enclosures

cc: Calvin Birge, CEEP (w/enc)
Office of Consumer Advocate (w/enc)
Office of Small Business Advocate (w/enc)
Office of Trial Staff (w/enc.)

DSH:28291.1

22

bcc: William C. Muntzer
Les Fyock

ORIGINAL

ANNUAL RESOURCE PLANNING REPORT

IRP-125042

Philadelphia Gas Works

Philadelphia, Pennsylvania

2000

Forms 3 - 9

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, Pennsylvania 19122

ANNUAL RESOURCE PLANNING REPORT
Forms 3 Through 9

Information Submitted in Compliance with and Pursuant to Title 52 Pennsylvania Code Section 59.81 & 59.82

PHILADELPHIA GAS WORKS

TABLE OF CONTENTS

Section 59.81: **General**

Pursuant to Section 59.81 (a), each major jurisdictional gas utility must file an annual resource planning report (ARPR) on or before June 1, 1996 and June 1 of each succeeding year, except Form 1A/2A which filing date is March 1. One (1) original and seven (7) copies of the report must be submitted to:

Secretary
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17105-3265

One copy should be submitted unbound for ease of duplication.

One courtesy copy should also be submitted to:

Pennsylvania Public Utility Commission
Conservation, Economics and Energy Planning
P.O. Box 3265
Harrisburg, PA 17105-3265
Attn. Calvin Birge

Also submit one (1) copy to the following:

Office of Consumer Advocate
555 Walnut Street
Forum Place, 5th Floor
Harrisburg, PA 17101-1921

Office of Trial Staff
Pa. Public Utility Commission
Commonwealth Keystone Bldg.
400 North Street, 2nd Floor
Harrisburg, PA 17105-3265

Office of Small Business Advocate
Suite 1102, Commerce Building
300 N. Second Street
Harrisburg, PA 17101

Be sure to indicate the name and telephone number of at least one individual at the company who is familiar with the filing and will be available to answer any questions the Commission staff may have. You may also wish to list those individuals who are directly involved in the preparation of the various document components.

Information contained in annual resource planning reports must be utility-specific. The report should follow an outline similar to that which is contained herein, with narrative accompanying the required data. Forms may be modified to accommodate wide columns of numbers and enhance readability, but the general format should be used to maintain consistency.

This information is not generally considered confidential. Utilities are obligated to provide complete information. However, we will treat as confidential those portions of the report designated by the utility as proprietary. If a utility's proprietary claim is challenged, the Commission will direct the utility to file a petition for protective order pursuant to 52 PA Code 5.423.

All questions concerning the reporting requirements for Forms IRP Gas 1A through 9 should be addressed to Pennsylvania Public Utility Commission Bureau of Conservation, Economics and Energy Planning.

Response:

An original, seven (7) copies, and one unbound copy of Forms 3, through 9, along with a general discussion of the methodologies, data sources, and assumptions are being submitted to meet the requirements of the filing deadline. PGW had requested permission to make this filing on August 1st as opposed to June 1st in recognition of the fact that PGW did not maintain the required data in the format requested. The PUC staff and the other parties agreed to allow PGW the additional time necessary for its first filing.

All questions concerning the ARPR should be directed to Mr. William Muntzer, Director, Gas Planning, Rates and Regulatory Affairs at (215) 684-6623. The following individual will be available to answer questions, or alternatively, to coordinate internal resources to respond to questions concerning each section.

Section 59.81 **Forms IRP-Gas 3 - Historical, Current and Forecast Number of Customers**

Provide the number of year end customers displayed by component parts.

Response: Please see the attached form.

FORM-IRP-GAS-3: NUMBER OF CUSTOMERS (YEAR END)
REPORTING UTILUTY: PHILADELPHIA GAS WORKS

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Firm Customers						
Retail Residential	487,466	485,061	479,656	477,028	474,397	462,591
Retail Commercial	24,091	24,858	25,881	26,088	26,303	25,232
Retail Industrial	1,108	1,095	1,198	1,256	1,315	1,321
Other						
Subtotal Sales Service	512,665	511,014	506,735	504,372	502,015	489,144
Electric Power Generation	0	0	0	0	0	0
Transportation Service	9	8	8	8	8	8
CUSTOMER TOTAL	512,674	511,022	506,743	504,380	502,023	489,152
Increase (Decrease)	na	(1,652)	(4,279)	(2,363)	(2,357)	(12,871)
Percent Change (%)	na	-0.32%	-0.84%	-0.47%	-0.47%	-2.56%

Section 59.81 **Forms IRP-Gas 4A and 4B - Annual and Peak Day Energy Supply and Demand**

Response: Please see the attached forms.

FORM-IRP-GAS-4A: ANNUAL SUPPLY AND REQUIREMENTS SUMMARY
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(Volumes in MMcf)

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Gas Supply:						
Supply Contracts	84,924	87,337	89,113	90,343	90,760	88,951
LNG	4,433	3,653	4,259	4571	4,602	4,564
Spot Purchases	0	0	0	0	0	0
Subtotal Gas Supply	89,357	90,990	93,372	94,913	95,363	93,515
Transportation	13,587	14,062	12,438	14,515	14,944	17,923
TOTAL GAS SUPPLY	102,944	105,052	105,810	109,428	110,306	111,438
Requirements:						
Firm Requirements	58,278	58,795	64,477	62,825	62,903	62,339
Liqufaction	4,265	4,084	4,174	4,891	4,833	4,603
Interruptible Requirements	8,764	9,115	8,277	10,563	10,901	10,042
Storage Injections	18,049	18,996	16,444	16,634	16,727	16,530
Subtotal Firm & Interruptible	89,357	90,990	93,372	94,913	95,363	93,515
Transportation	13,587	14,062	12,438	14,515	14,944	17,923
Load Reductions						
TOTAL GAS REQUIREMENTS	102,944	105,052	105,811	109,428	110,306	111,438
Surplus (Deficiency)	0	0	0	0	0	0

FORM-IRP-GAS-4B: PEAK DAY SUPPLY AND REQUIREMENTS SUMMARY
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(Volumes in MMcf)

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Gas Supply:						
Supply Contracts	453.5	432.5	397.4	465.1	465.4	465.4
LNG	88.4	198.4	123.0	234.3	235.5	276.9
Spot Purchases	-	-	-	-	-	-
Subtotal Gas Supply	541.9	630.9	520.4	699.5	700.8	742.2
Transportation	16.7	33.6	21.3	-	-	-
TOTAL GAS SUPPLY	558.6	664.6	541.7	699.5	700.8	742.2
Requirements:						
Firm Requirements [1]	502.7	573.8	514.9	699.5	700.8	695.3
Interruptible Requirements	39.3	57.1	5.5	-	-	46.9
Subtotal Firm & Interruptible	541.9	630.9	520.4	699.5	700.8	742.2
Transportation	16.7	33.6	21.3	-	-	-
Load Reductions			-	-	-	-
TOTAL GAS REQUIREMENTS	558.6	664.6	541.7	699.5	700.8	742.2
Surplus (Deficiency)	0	0	0	0	0	0

[1] Firm requirements include plant use.

Section 59.82 Energy Conservation Report

A. The ARPR must include a detailed description of all conservation and load management programs implemented by the utility during the past calendar year and all programs proposed to be implemented this (current) year. Complete Forms IRP-Gas-5 through IRP-Gas-9 as follows:

Form IRP-Gas 5 – Program Description

1. One Form IRP-Gas-5 must be provided for each program.
2. Provide a descriptive name of the program, the participating customer class and the program status (existing or proposed).
3. Provide the name of an appropriate contact person and telephone number.
4. Succinctly describe the objective(s) of the program.
5. Provide details of the program activities and a schedule for implementation.
6. Provide actual or anticipated results in terms of peak day reduction, load shifted, energy saved or other results, where applicable.
7. Provide a breakdown of all monetary and personnel resources. Additional program expense categories may be used.

Response: Please see attached forms.

FORM-IRP-GAS-5 PROGRAM DESCRIPTION

Company: Philadelphia Gas Works (PGW)

Program: Conservation Works Program (CWP)

Existing [X] Proposed [ ]

Contact Person: Cristina Coltro
(215) 684-6785

Objective: To reduce energy usage, therefore, making bills more affordable for low-income customers whose usage is average or above average and who are participants in the Customer Responsibility Program.

Details of Activity and Implementation Schedule:

Eligible customers are targeted for program participation. For each participating household, PGW's contractors will perform an energy diagnostic audit, energy education, and conservation treatments such as home repairs, automatic clock thermostat, , insulation, etc.

Actual and/or Anticipated Results:

			Energy Savings		
Year	Peak Load Reduction Mcf	Electic Mwh	Gas Mcf	Oil Gallons	Other Results
1999 (1)			13.45		3717 Homes w/ Treatment
2000 (2)			14		4087 Homes w/ Treatment
2001 (3)			15		3650 Projected

Monetary and Personal Resources:

		Categorized program Expenses		
Year	Personnel Est. Hrs. (4)	Outside Services	Admin. (PGW Internal)	Total
1999 (1)	40,887	$1,909,267	$60,000	$1,969,267
2000 (2)	44,957	$1,999,867	$60,000	$2,059,867
2001 (3)	40,150	$2,000,000	$60,000	$2,060,000

(1) Actual
(2) Actual number of participants, actual expenditure, estimated energy savings
(3) Budgeted
(4) Personnel hours were estimated by multiplying the number of homes by 11, the average number of hours spent per home.

C. Coltro
07/30/01

Section 59.82 **Forms IRP-Gas 6 - Energy Users**

Response: Please see the attached forms.

FORM-IRP-GAS-6
ENERGY USERS
COMPANY: PHILADELPHIA GAS WORKS

Fiscal Year Ending August 31, 2000

Firm:	Number of Customers	Sales (Mcf)
Residential		
Heating	418,250	40,165,361
Non-heating	66,811	1,970,789
Commercial	24,858	11,350,501
Industrial	1,095	1,299,208
Sub-total Firm	511,014	54,785,859
Interruptible		
Commercial & Industrial	476	8,604,133
Transportation	8	13,999,393
Totals	511,498	77,389,385

Section 59.82 Form-IRP-Gas-7 – Conservation and Load Management program Summary

1. Use this form to provide a summary of the information provided in Form IRP-Gas-5.

2. Provide annual totals for program for results and monetary and personnel resources.

3. For programs with annual expenditures of more than $100,000 or more than 0.1% of the total annual revenue, a cost benefit analysis must be performed. The current methodology, prescribed by the Bureau of Conservation, Economics and Energy Planning pursuant to Section 59.82 (E), is essentially the same as that contained in the former Section 69.122, with minor modifications. This methodology shall be used until further notice. The following discussion provides instructions for completing Form IRP-Gas-8 (analysis inputs) and Form IRP-Gas-9 (analysis results), including the necessary definitions and equations.

Response: Please see the attached forms.

FORM-IRP-GAS-7 PROGRAM SUMMARY

Company: Philadelphia Gas Works (PGW)

Program Name	Peak Load Reduction (Mcf)	Energy Use Change (Mcf)	Personnel Est. Hrs (4)	Categorized Program Expenses		
				Outside Services	Adm.	Total
Conservation Works Program (CWP) - 1999 (1)	NA	13.45	40,887	$1,909,267	$60,000	$1,969,267
Conservation Works Program (CWP) - 2000 (2)	NA	14	44,957	$1,999,867	$60,000	$2,059,867
Conservation Works Program (CWP) - 2001 (3)	NA	15	40,150	$2,000,000	$60,000	$2,060,000

(1) Actual
(2) Actual figures except for Energy Savings
(3) Budgeted
(4) Personnel hours were estimated by multiplying the number of homes by 11, the average number of hours spent per home

Section 59.82 Form-IRP-Gas-8 – Conservation and Load Management Program Cost Benefit Analysis Inputs

1. Variable **E** represents the program participants' annual energy savings occurring in year **t**, in Mcf.

2. Variable **CE** represents the program participants' cumulative energy savings, in Mcf.

3. Variable **ES** represents the amount of energy use in which has been shifted in year **t**, in Mcf.

4. Variable **D** represents the program participants' demand reduction occurring in year **t**, in Mcf.

5. Variable **G** represents the equivalent supply reduction, including all identifiable and quantifiable reductions in the utility's demand requirement, occurring in year **t**, in Mcf.

6. Variable **PC** represents the direct cost to the participants of the action or measure, including the initial capital cost, sales tax, operations and maintenance costs, and removal costs less salvage.

7. Variable **I** represent the cost of any monetary Incentive paid directly to the participants to offset explicitly quantified participant costs.

8. Variable **UC** represents all other utility program costs, excluding direct incentives.

9. Variable **d** represents the appropriate discount rate.

10. Variable **ACE** represents the average cost of energy for participants in year **t**. The average cost should reflect actual rates currently in effect, including seasonal-differentiated rates where appropriate, and reasonable escalating rates.

11. Variable **ACD** represent the average cost of demand avoided by participants in year **t**. This variable should be developed by using actual rates currently in effect and escalating those costs into the future. Seasonal-differentiated rates should be used, if appropriate.

12. Variable **CE** represents the marginal cost of energy avoided by the utility in year **t**. Transmission and distribution losses should be reflected in either **MCE** or **E**. If costs are substantially affected by season, appropriate time periods should be used to more closely reflect marginal energy costs.

13. Variable **MCD** represents the marginal cost of supply avoided by the utility in year **t**. If costs are substantially affected by season, appropriate time periods should be used to more closely reflect marginal capacity costs.

14. Variable **S** represents system sales, in thousand cubic feet reflecting the effects of the program over the period of analysis.

15. The period of analysis, **N**, may be less then 30 year, but should be of sufficient length to reflect all program costs and benefits.

Response: Please see the attached forms.

Company Name:
FORM-IRP-GAS-8

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis Input

PROGRAM: Conservation Works Program

t	Year	Energy Savings (E) Mcf	Average Energy Cost (ACE) $ per Mcf	Avoided Enegy Cost (MCE) $ per Mcf	Participant Demand Savings (D) Mcf	Utility Capacity Savings (G) Mcf	Average Demand Costs (ACD) $/Mcf	Avoided Demand Costs (MCD) $/Mcf	Participant Costs (PC) $
1	1999	50,068	$ 8.54	$ 2.24920	N/A	N/A	N/A		$ -
2	2000	50,068	$ 8.50	$ 2.82800	N/A	N/A	N/A		$ -
3	2001	50,068	$ 12.85	$ 5.88070	N/A	N/A	N/A		$ -
4	2002	50,068	$ 10.46	$ 3.41917	N/A	N/A	N/A		$ -
5	2003	50,068	$ 10.97	$ 3.59833	N/A	N/A	N/A		$ -
6	2004	50,068	$ 10.60	$ 3.46667	N/A	N/A	N/A		$ -
7	2005	50,068	$ 10.78	$ 3.53083	N/A	N/A	N/A		$ -
8	2006	50,068	$ 10.64	$ 3.48000	N/A	N/A	N/A		$ -
9	2007	50,068	$ 10.77	$ 3.52833	N/A	N/A	N/A		$ -
10	2008	50,068	$ 10.70	$ 3.50416	N/A	N/A	N/A		$ -
11	2009	50,068	$ 10.71	$ 3.50582	N/A	N/A	N/A		$ -
12	2010	50,068	$ 10.71	$ 3.50747	N/A	N/A	N/A		$ -
13	2011	50,068	$ 10.72	$ 3.50913	N/A	N/A	N/A		$ -
14	2012	50,068	$ 10.72	$ 3.51078	N/A	N/A	N/A		$ -
15	2013	50,068	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
16	2014	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
17	2015	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
18	2016	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
19	2017	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
20	2018	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
21	2019	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
22	2020	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
23	2021	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
24	2022	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
25	2023	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -

Company Name:
FORM-IRP-GAS-8

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis Input

PROGRAM: **Conservation Works Program**

				Discount Rates			
t	Year	Incentive Cost (I) $	Utility Costs (UC) $	Participant (d) %	Non-Participant (d) %	Utility (1) (d) %	Escalation Rate (e) %
1	1999	$ -	$1,969,267	5.9	5.9	5.9	$ -
2	2000	$ -	$ -	5.9	5.9	5.9	$ -
3	2001	$ -	$ -	5.9	5.9	5.9	$ -
4	2002	$ -	$ -	5.9	5.9	5.9	$ -
5	2003	$ -	$ -	5.9	5.9	5.9	$ -
6	2004	$ -	$ -	5.9	5.9	5.9	$ -
7	2005	$ -	$ -	5.9	5.9	5.9	$ -
8	2006	$ -	$ -	5.9	5.9	5.9	$ -
9	2007	$ -	$ -	5.9	5.9	5.9	$ -
10	2008	$ -	$ -	5.9	5.9	5.9	$ -
11	2009	$ -	$ -	5.9	5.9	5.9	$ -
12	2010	$ -	$ -	5.9	5.9	5.9	$ -
13	2011	$ -	$ -	5.9	5.9	5.9	$ -
14	2012	$ -	$ -	5.9	5.9	5.9	$ -
15	2013	$ -	$ -	5.9	5.9	5.9	$ -
16	2014	$ -	$ -	5.9	5.9	5.9	$ -
17	2015	$ -	$ -	5.9	5.9	5.9	$ -
18	2016	$ -	$ -	5.9	5.9	5.9	$ -
19	2017	$ -	$ -	5.9	5.9	5.9	$ -
20	2018	$ -	$ -	5.9	5.9	5.9	$ -
21	2019	$ -	$ -	5.9	5.9	5.9	$ -
22	2020	$ -	$ -	5.9	5.9	5.9	$ -
23	2021	$ -	$ -	5.9	5.9	5.9	$ -
24	2022	$ -	$ -	5.9	5.9	5.9	$ -
25	2023	$ -	$ -	5.9	5.9	5.9	$ -

(1) The Participant, Non-Participant and Utility discount rates are based on PGW's long-term debt and AFUDC (Al

System Sales or Demand (S) Mcf	Sales or Demand Ratio (f) %	Geomean Discount (%)
53,656,947	0.0103	5.9
55,622,776	0.0099	5.9
62,565,948	0.0088	5.9
58,502,694	0.0094	5.9
58,502,694	0.0094	5.9
58,502,694	0.0094	5.9
58,502,694	0.0094	5.9
58,502,694	0.0094	5.9
58,502,694	0.0094	5.9
58,502,694	0.0094	5.9
58,502,694	0.0094	5.9
58,502,694	0.0094	5.9
58,502,694	0.0094	5.9
58,502,694	0.0094	5.9
58,502,694	0.0094	5.9
58,502,694	0.0094	5.9
58,502,694	0.0099	
58,502,694	0.0099	
58,502,694	0.0099	
58,502,694	0.0099	
58,502,694	0.0099	
58,502,694	0.0099	
58,502,694	0.0099	
58,502,694	0.0099	
58,502,694	0.0099	
58,502,694	0.0099	

lowance for Funds Used During Construction).

Section 59.82

Form-IRP-Gas-9 – Conservation and Load Management Program Cost Benefit Analysis Results

The results of the cost benefit analysis are presented in terms of benefit-cost ratios and net present values from four perspectives: participant, non-participant, all ratepayers and utility. It is noted that the difference between utility benefit, Bup, under the participant test and utility benefits, Bun, under the utility revenue requirement test is the discount rate, d. The discount rates should reflect the time value of money from the viewpoint being evaluated. For the participant and non-participant tests, market interest rates could be used. A utility's expected cost of capital should be used as the discount factor in determining a utility's net present value of program costs and benefits.

Provide all assumptions used in the evaluation methodology, such as energy and demand savings and costs, marginal costs, tax rates, escalation factors and rates of participation. Identify and discuss unquantified and qualitative variables, such as fuel displacement, environmental impacts, reliability benefits, customer inconvenience and benefits to the local economy.

Response:

Please see the attached forms.

Company Name:
FORM-IRP-GAS-9

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis Input

Program:

Conservation Works Program (CWP)

Period of Analysis		Total Utility Benefits (Bu) $	Total Utility Costs (Cu) $	Revenue Reduction Cost (Cr) $	Participant Revenue Requirement (Rp) $	Total participant Benefits (Bp) $	Total Participant Costs (Cp) $
Beginning Year	Ending Year						
1999	2023	$ 2,083,631	$ 1,969,267	$ 6,213,758	$ 47,195	$ 6,213,758	$ 47,195

	NET PRESENT VALUE			BENEFIT COST RATE			
Discounted Payback Period Yrs.	Participant (NPVp) $	Non-Part (NPVnp) $	Utility (NPVu) $	Participant (BCRp)	Non-Part (BCRnp)	Utility (BCRu)	Rate Impact Non-Part (RIMnp) $/Mcf
25	$ 6,166,563	(6,036,601.42)	$114,363.65	131.66	0.25	1.06	0.004

Section 59.81 **2000 Annual Resources Summary Planning Report**

Response: The Summary Report is included as a separate document

ANNUAL RESOURCE PLANNING REPORT

Philadelphia Gas Works

Philadelphia, Pennsylvania

2000

Summary Report

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, Pennsylvania 19122

ANNUAL RESOURCE PLANNING REPORT
Summary Report

Information Submitted in Compliance with and Pursuant to Title 52
Pennsylvania Code Sections 59.81 & 59.82

PHILADELPHIA GAS WORKS

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Introduction

On January 11, 1996, the Pennsylvania Public Utility Commission (PUC) adopted final regulations (52 Pa. Code §§ 59.81 – 59.84) which set forth the requirements for filing an Annual Resource Planning Report (a.k.a. Integrated Resource Planning Report or IRP Report). The attached IRP Report represents PGW's approach to planning.

The Report contains information for PGW's approach for providing least cost service while maintaining its commitment to providing reliable service. The document is provided in six (6) sections:

Section I	PGW's Overall Approach To Integrated Resource Planning
Section II	Supply Forecasting Methodology and Assumptions
Section III	Demand Forecasting Methodology & Assumptions
Section IV	Peak Day Forecasting Methodology and Assumptions
Section V	PGW Corporate Modeling System
Section VI	Summary Tables

I. Supply Forecasting Methodology and Assumptions
Basic Assumptions

The PGW Gas Supply Policy Committee, representing senior corporate management as well as Gas Planning, Gas Control, Gas Supply, Regulatory and Marketing departmental management, approved the aforementioned Optimization Standard for Purchasing and Utilizing Gas Supplies (Section I). All natural gas purchases continue to be made in accordance with this standard. Projected sales, revenues and natural gas expenses in this report result from this agreement, particularly in the areas of inventory valuation, priorities of gas selection and interruptible supply availability.

Incorporated into our projections are additional implementation steps involved with developing a for the near term and the longer range. These steps include developing a cost relationship comparison for current resources and a review of current contract terms and alternatives for continuing, extending, modifying or eliminating contracts. In order to achieve this cohesive gas supply/demand strategy while maintaining a balance between economics and security of supply, the company uses a portfolio strategy approach. This approach incorporates a menu driven selection of services which allows the company to choose only those specific services necessary to meet its requirements. This is achieved by first securing transportation capacity rights. Then sources of supply are contracted to cover the firm transport rights, taking into consideration differing seasonal obligations.

Operating flexibility is sustained by variations in contract stipulations to permit the system to swing on the most economical gas supplies available while maintaining the ability to supply rapidly fluctuating temperature requirements. Storage facilities are substituted wherever opportunity affords to reduce annual expense for flowing 365 day pipeline service without damage to peak day and peak winter season delivery capability. Direct control of all storage is sought to permit PGW to minimize winter costs by injecting lower priced summer purchases and to cycle storage to balance daily take fluctuations to avoid overrun/balancing charges.

II. Supply Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

PGW's supply strategy incorporates maintaining full current winter day deliverability with regard to transportation capacity but to convert, where possible, to storage rather than winter flowing contracts to enhance financial and operational flexibility. A variety of long term supply contracts are necessary to support pipeline transportation capacity because reliance upon best effort spot suppliers to fill wintertime capacity required to meet firm customers' demands has proven to be an unreliable alternative. As a result, longer-term contracts are utilized to support firm transportation capacity. To accomplish this end, the Company purchases winter supply contracts with daily deliverability equal to approximately 58% of the contractual daily transportation entitlements on the two interstate pipelines with direct connections to PGW's service territory. Additionally, these supply contracts match the contractual entitlements of the two pipelines by sourcing supply in a manner consistent with the pipeline's upstream contractual requirements. In this way, PGW not only helps ensure the security of supply by sourcing the gas from geographically diverse supply regions, but PGW is also able to take advantage of the pricing basis differential inherent in these diverse supply locations.

These contracts all contain the ability to fix the price for upcoming months as well as to allow the pricing to default to an agreed upon market index when there is no market advantage in fixing a price before the month begins. PGW uses this fixed price option in conjunction with its Gas Cost Rate (GCR) filing (GCR filing includes pricing based upon the Standard and Poors' "DRI Price Forecast") by always attempting to buy under the DRI forecasted prices. Through the matching of the duration supply contracts to a seasonal demand, such as the Winter operating season, the firm rate payers benefit from not paying demand charges year-round.

A second component of PGW's supply portfolio, or a volume equal to 32% of pipeline capacity, is purchased gas based on a first-of-the-month index pricing methodology, with contracts that allow for daily change in volumetric take. This allows the Company to effectively shut-off higher priced supply, replacing such supply with daily cheaper spot priced gases. Under assumed normal winter conditions, PGW utilizes certain storage fields (ANR, Equitrans, Eminence and Washington), in a manner similar to third party supply.

II. Supply Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

Specifically, these storage contracts do not contain bundled transportation to the PGW city gates. Therefore, storages must flow within PGW's contractual upstream capacity rights on TETCO and TGPL. Typical daily delivery from these fields utilizes approximately 10% of the daily TETCO and TGPL capacity rights to the Philadelphia city gates. These storage fields also act as a physical fixed price counter to winter price conditions since the WACOG usually reflects a winter/summer pricing differential. PGW's summer purchasing strategy also incorporates a portfolio approach to the purchase of system supply and storage refill. The GCR filing, with its Standard and Poors' based pricing, is again used as a yardstick in purchasing supply for both system supply and storage refill. PGW always attempts to purchase a portion of its supply needs below the projected GCR cost estimate with a portion of the portfolio purchased at default, first-of-the-month pricing. These first-of-the-month pricing option contracts, in most instances, allow PGW to evaluate daily spot prices and provide for a turn-off of first-of-the-month index-priced supply in favor of the purchase of more economically advantageous daily spot purchases.

Operating conditions permitting, the Company enters into the FERC approved capacity release market to offset demand charges it pays for its firm transportation and/or the incremental off-systems sales market when it is economically advantageous for the firm rate payer. In both instances, these opportunities are sought only when firm customer needs are satisfied. Additionally, PGW's bundled storages and LNG can be utilized as a substitute for higher price gas supply based on market pricing conditions and the results of PGW's weekly status report. Effectively, the Gas Supply Group is at all times studying the market for any economic advantage it can bring to firm ratepayers.

III. Demand Forecasting Methodology and Assumptions

Basic Assumptions

PGW uses a combination of four basic methods to develop demand projections. They are:

1) Customer Survey -- Information gathered by PGW's Marketing Department and used for annual projections by month and year.
2) Relative End Use -- Projections via Marketing methods of customer load sizing by appliance type, maximum input, maximum summer and winter full load hour (FLH) calculations which are used to develop yearly and monthly demand requirements.
3) Historical Data -- Data showing long-term demand trends, conservation and utilization patterns by the various classes of customers - Residential, Commercial, Industrial and Interruptible.
4) Judgment -- Experienced opinion as applied to the evaluation of the combination of all data to develop the basic demand requirements.

Customer Demand

The total system-wide demand is a function of the projected gas demand per customer and the anticipated number of customers in each class. In determining customer demand, consideration is given to projecting current customer usage, augmented by significant gains or losses in each of 49 homogeneous groups for the period being projected. The Gas Planning Department attempts to determine, for each customer class, the level of demand reliable to experienced temperature and the component of demand that is apparently not affected by changes in temperature. Within each class the most recent summer and winter usage patterns are established from historical records. Summer data provides an insight into each customer class's non-temperature sensitive load requirements, baseload, which can be expressed in terms of thousands of cubic feet (Mcf) per day, per customer. Similarly, winter data, after removal of the daily baseload level, reveals the temperature sensitive load requirements for each class of customer.

This usage primarily reflects space heating, but also includes such other temperature sensitive needs as water heating attributable to colder ground water inlet temperatures and similar process variations, as well as supplementary range heating. This overall heating requirement can be expressed in terms of the cubic feet of gas utilized per degree of temperature change on a per customer basis for each separate customer classification.

III. Demand Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

In addition, consideration must be given to the variation of customer utilization patterns, for space heating over the year, recognizing the transitional fall start-up of heaters, the deep winter period needs and the tapering off and shut-down which occurs in the spring. These usage patterns, in conjunction with anticipated customer counts and appropriate temperature patterns, form the basis for determining class and total system demands. Due to the inconsistencies of weather and weather forecasting techniques, no attempt is made to predict the specific daily temperatures of the projection period. Instead, PGW has developed a normal monthly temperature pattern by analyzing statistical records of actual temperature patterns over a 40-year period. This pattern reflects 4555 degree days annually distributed in a stylized pattern preserving the monthly range of colder to warmer daily temperatures experienced, but without regard to calendar date.

The term "degree days" quantifies the number of degrees of temperature below a base level of 65 degrees Fahrenheit as a tool to measure space heating requirements, i.e., on a day experiencing an average temperature of 40 degrees F., there would be counted 25 degree days. The annual 4555 degree days, which compose the PGW normal monthly temperature patterns, form the basis of the calculation of the temperature sensitive component of demand. The application of the above-described baseload and space heating factors and customer counts, when applied to a calendar based daily temperature pattern, produces a daily statement of total customer requirements identified as sendout. It should be noted that there is a difference between sendout volume and sales volume. Sendout represents those volumes that left the plant initially to supply customers' requirements, while sales are those volumes reported on customer meters. The variation between sendout and sales is that portion which is lost and unaccounted for in the PGW distribution system. In addition, these volumes differ on a monthly basis in the distribution pattern. For the convenience of distributing meter reading and billing efforts uniformly over the available number of working days in a month, the majority of PGW customers are divided into 20 individual groups or cycles, containing residential, commercial and industrial accounts within a specific geographic area.

III. Demand Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

When these cycle customers are billed each month, they reflect meter reading usage not for the calendar month being billed, but for the number of days and temperature pattern of degree-days experienced during their specific interval between readings. For example, assume the month of January contained 900 degree-days. The customers in cycle 10 being billed for the month of January might have had meter readings taken on December 15 and again on January 17. Sales billed and reported in company records for these customers would have reflected the number of days and degree days between these reading dates rather than the 900 degree days of the month. Similarly, cycle 1 customers that might have had meter readings taken on December 1 and January 2 would reflect principally the December temperature experience, while cycle 20 customers, with meter readings taken possibly December 28 and January 29, would reflect principally the January temperature experience.

An average of the 20 cycles (Average Cycle Degree-Days) is used as the temperature patteren upon which to project the potential volume of sales in the estimation period. Both projections of sales and sendouts represent the full potential demand for that period from both firm and interruptible customers.

Methodology Used to Develop Monthly Estimates

A trial domestic factor is developed by class of customer from sales reported for the previous year's summer months. This average factor is then utilized in the sendout formula with the customer counts for the months of July, August and September. A comparison between what the formula calculates and the actual experienced for those three months is ascertained and the trial domestic factors are finalized to replicate the total sendout experienced. The finalized domestic factors (DOMs) are then utilized in conjunction with the actual sales and customer counts for the months of December, January and February to determine the average Mcf per degree day for each of the individual months for the remaining temperature sensitive load. The results are weighted by degree-days to give an average value which is utilized as a trial value for the heating factor.

III. Demand Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

The DOM and the trial heating factor are then applied in the sendout calculations, together with customer counts for the months of December, January and February, the peak winter cold period, to project an estimated sendout for each of these months. The projected sendout is then compared with the actual sendout experienced. Any variation between the projected and actual is adjusted to force the replication of the actual sendout experience, thus resulting in the determination of a finalized heating factor.

To project the number of customers for each individual rate class, the following categories of customers are reviewed and accumulated individually: current customers are ascertained from the number of billings data available from sales and revenue actually experienced immediately prior to the commencement of a budget run. Declines are projected for anticipated losses to electric and other fuels or demolitions and from transfers to other rates. Direct transfers from a non-heating to a heating account, as a result of a current customer's conversion to gas heat, moves the domestic load to the new category. Projected additional customers are developed within the Marketing Department, where staff dealing with individual classes of customers and having the most direct knowledge of conditions within their sphere, project annual load additions which are translated into count based upon typical customer usage for that individual customer class. The approximate month of turn-on is also developed to permit reflection of the effective portion of the load addition within the fiscal period under study. Interruptible class customers, as well as other large special accounts, are detailed individually incorporating expected gains and losses as direct contact has indicated.

The base revenue projections for both firm and interruptible customer groups are derived as the product of the projected sales volumes and the present tariff rate for each individual customer class within each group. The GCR revenue projections are derived as the product of the GCR factor and the projected sales volumes to the non-interruptible customers.

III. Demand Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

Finally, incremental Marketing efforts are concentrated on Air Conditioning and Co-generation opportunities. Rate design has been implemented fostering off-peak increase in utilization of current supply resources in an air conditioning discount, an interruptible Co-generation Rate and a Natural Gas Vehicle (NGV) Service. This rate design is intended to limit on-peak expansion to acceptable interruptible availability of current resources rather than to allow the creation of new peak demands and prospective load management.

IV. Peak Day Forecasting Methodology and Assumptions

Each year, a six year estimate of Peak Day requirements anticipated under design peak day operating conditions is prepared to ensure that adequate resources are under contract and, additionally, to further ensure that PGW can fulfill its utility obligation to its firm customer requirements on the design peak day and design peak hour.

The projected demands for design day, as delineated on Form 1B (attached), are developed utilizing previous winter period data: for this report, from 1994-95 through 1999-00, all weekdays where the temperature average for the day is 32 degrees F. or below. The total sendout for these days as recorded under actual conditions is reduced to base sendout by removal of the interruptible load. A computer generated linear regression procedure is utilized to develop a calculated sendout versus the actual sendout from which the necessary constants (factors) required to have the calculated sendout match, within a reasonable percent of error to the actual sendout are developed. The process is repeated in a quadratic regression and a cubic regression procedure. This approach produces a curvilinear regression method, the results of which are analyzed by statistical significance testing and the best-fit curve is selected for use in developing the design day sendouts. The factors derived from the curve selected are used to calculate current load requirements for a 0 degrees F. day and a -5 degrees F. hour. PGW's Marketing Department's load projections for present and future years are then applied to these requirements to develop design day and design hour present and future load requirements. This is achieved by the addition of the projected marketing load growth expectations on an annual basis (by day) to the derived base-year design day requirements.

V. PGW Corporate Modeling System

General Description

The corporate model system is a tool used by PGW management to project sales, revenues and expenses, as well as to examine key planning strategies and evaluate their effects on company operations. The system provides the ability to determine the results of alternate plans and scenarios, while at the same time allowing for responses to "what if" type situations quantifying revenue and expenses. The system is totally interactive in that it combines the power of the computer with the experience of management to develop both short and long range projections based upon experienced historical data for sales and sendout volumes, raw material expenses and sales revenues. The corporate model system is composed of five separate models. Each model operates independently, but requires substantial external data inputs as well as data output results from one or more of the other models in the system.

Gas Demand Model

The gas demand model is used to forecast total requirements for gas based upon current customer usage experience with adjustments for projected gains and losses. Input data includes domestic and space heating usage factors, customer counts by rate classifications, temperature patterns and results in projections of sales and sendout volumes. Detail and summary reports include average usage per customer and demands by rate classification. This data is transferred to the supply model.

Gas Supply Model

The supply model is used to dispatch the various supply sources in accordance with contract availability limitations. It develops the necessary balance between supply and demand, which reflects plant fuel and storage re-injection requirements as well as customer demands, by identifying the availability of interruptible load balancing sales. Detail and summary reports include daily and monthly load requirements, the volumes taken from each source by pipeline contract, storage balances, supplemental fuel requirements, etc. Data is transferred to both the cost model and the revenue model downstream.

V. PGW Corporate Modeling System (Continued)

Gas Cost Model

The gas cost model is used to determine natural gas and other raw material costs dispatched. The model tracks the various cost components of each contract - the demand, capacity, commodity, injection and withdrawal charges - providing monthly and annual details and summary information, including inventory valuations and expenses for supplemental LPG and LNG supplies. It transfers these expenses to the Gas Cost Rate Model.

Gas Cost Rate Model

The gas cost rate model is used to develop a base fuel charge and a fuel adjustment factor known as the Gas Cost Rate (GCR). It ascribes responsibility for the raw material costs, to firm and interruptible classes in accordance with PGW's tariff requirements, assigning cost on an as-used basis to customer classes applicable to such charges, and compensates for natural gas refunds and previous over or under billing of fuel expenses. Detail summary reports include specifics of raw material adjustment, statements of reconciliation, and determination of applicable sales and expenses, transferring its results to the revenue model.

Revenue Model

The revenue model is used to project billed revenue by rate classification in accordance with PGW's rate tariffs. It prepares both base non-fuel and base fuel revenue statements, GCR revenues, senior citizen discounts, and cycle and budget billing information, all detailed by rate classification. The detail and summary reports provided by this model are directed to the accounting and financial departments for inclusion in various financial reviews.

Summary

The corporate model system allows PGW management to effectively address supply/demand balancing, supply facilities planning, projected sales, cost, revenues, and sendout volumes in a timely manner. Results assist in the development of PGW's annual Operating Budget.

V. PGW Corporate Modeling System (Continued)

The model allows the evaluation of future winter requirements on both normal and design temperature patterns and the extrapolation of current years based upon the experience to date and an assumption of temperatures anticipated for the remaining period of the year, the latter acting as a guide for both financial cash flow planning and winter operations.

Other Forecasts

In addition to the Operating Budget forecasts identified above in conjunction with the modeling system, capital budget planning is facilitated by providing a forecast of design day/design hour load requirements. This recognizes the usage patterns exhibited during the most recent five winters on weekdays with temperatures of 32 degrees F. and below. Load growth assumptions extend this experience into future years. The design day conditions represent a weekday at 0 degree F. The design hour represents a -5 degree F. temperature and approximately 5% of the total peak day load requirements.

VI. Summary Schedules

Attached herein are PGW's Forms 3through 9 as required by the Commissions regulations.

Section 59.81 **Forms IRP-Gas 1A, and 1B – Annual and Peak Day Demand**

The load growth projections shall reflect the effects of price elasticity, market induced conservation, building and appliance efficiency standards, and the effects of the utility's existing and planned conservation and load management activities.

Response: Please see the attached documentation and forms.

FORM-IRP-GAS-1A: ANNUAL GAS REQUIREMENTS
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(VOLUMES IN MMcF)

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Firm Sales:						
Retail Residential	42,851	42,136	46,941	45,386	45,201	44,731
Retail Commercial	9,429	11,351	11,991	12,006	12,218	12,149
Retail Industrial	1,406	1,299	1,494	1,544	1,599	1,622
Electric Power Generation						
Exchanges with Other Utilies						
Unaccounted For Gas	2,266	3,659	3,272	2,158	2,261	2,247
Company Use	67	69	81	93	93	93
Other (Off-system/Unbilled Estimate)						
Subtotal Firm Sales	56,039	58,514	63,779	61,187	61,372	60,843
Interruptible Sales:						
Retail	8,273	8,396	7,643	10,110	10,438	9,644
Electric Power Generation	169	208	137	168	167	122
Company's Own Plant	427	449	478	539	535	519
Unaccounted For Gas	294	293	258	285	295	277
Subtotal Interruptible Sales	9,163	9,346	8,516	11,101	11,436	10,561
SUBTOTAL FIRM AND INTERRUPTIBLE SALES:	65,201	67,860	72,295	72,288	72,808	71,404
Transportation:						
Firm Residential						
Firm Commercial						
Firm Industrial	11,115	11,012	9,228	10,546	10,546	10,083
Interruptible Residential						
Interruptible Commercial		-	-	-	-	-
Interruptible Industrial	2,427	2,988	3,263	3,802	4,216	7,525
Electric Power Generation						
Subtotal Tranportation	13,542	14,000	12,491	14,348	14,762	17,608
TOTAL GAS REQUIREMENTS	78,743	81,860	84,786	86,636	87,570	89,012
Increase (Decrease)	na	3,117	2,926	1,850	934	1,442
Percent Change (%)	na	3.96%	3.57%	2.18%	1.08%	1.65%

FORM-IRP-GAS-1B:PEAK DAY REQUIREMENTS

REPORTING UTILITY: PHILADELPHIA GAS WORKS

(VOLUMES IN MMcF)

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Firm Sales:						
Retail Residential	384.5	413.2	379.0	519.0	516.5	511.1
Retail Commercial	84.4	111.3	96.8	137.1	139.5	139.1
Retail Industrial	12.6	12.6	12.4	17.5	17.5	18.1
Electric Power Generation	0.0	0.0	0.0	0.0	0.0	0.0
Exchanges with Other Utilies	0.0	0.0	0.0	0.0	0.0	0.0
Unaccounted For Gas	20.6	36.2	26.3	24.5	25.9	25.7
Company Use	0.5	0.6	0.5	1.4	1.4	1.4
Other (Off-system/Unbilled Estimate)	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Firm Sales	502.7	573.8	514.9	699.5	700.8	695.3
Interruptible Sales:						
Retail	37.5	52.9	4.2	0.0	0.0	46.9
Electric Power Generation	0.3	0.3	0.0	0.0	0.0	0.0
Company's Own Plant	1.3	1.9	1.1	0.0	0.0	0.0
Unaccounted For Gas	0.2	2.0	0.2	0.0	0.0	1.7
Subtotal Interruptible Sales	39.3	57.1	5.5	0.0	0.0	46.9
SUBTOTAL FIRM AND INTERRUPTIBLE SALES:	541.9	630.9	520.4	699.5	700.8	742.2
Transportation:						
Firm Residential	0.0	0.0	0.0	0.0	0.0	0.0
Firm Commercial	0.0	0.0	0.0	0.0	0.0	0.0
Firm Industrial	15.7	30.7	20.5	0.0	0.0	0.0
Interruptible Residential	0.0	0.0	0.0	0.0	0.0	0.0
Interruptible Commercial	0.0	0.0	0.0	0.0	0.0	0.0
Interruptible Industrial	1.0	2.9	0.8	0.0	0.0	0.0
Electric Power Generation	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Tranportation	16.7	33.6	21.3	0.0	0.0	0.0
TOTAL GAS REQUIREMENTS	558.6	664.6	541.7	699.5	700.8	742.2
Increase (Decrease)	*na*	106	(123)	158	1	41
Percent Change (%)	na	18.96%	-18.49%	29.13%	0.20%	5.91%

Section 59.81

Forms IRP-Gas 2A, 2B and 2C - Annual and Peak Day Energy Resources, Transmission and Storage Contracts

The forecast of energy sources shall indicate sources of all presently available and new supplies which the utility estimates will become available, displayed by component parts.

Response:

Please see the attached documentation and forms.

FORM-IRP-GAS-2A: NATURAL GAS SUPPLY
TABLE : PEAK DAY SUPPLY
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(Volumes in MMcf)

	Historical Data		Current Year	Three Year Forcast		
Index Year	-2	-1	0	1	2	3
Actual Year	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Gas Supply for Sales Service						
TETCO	119	119	95	118	118	118
TRANSCO	118	114	138	136	136	136
Spot Purchases						
Storage Withdraws	216	198	166	210	211	211
LNG/SNG/Propane Purchases	88	198	122	234	235	277
Company Production						
Local Purchases						
Exchanges with other LDCs						
Other						
Total Gas Supply for Sales	541	629	521	699	701	742
Total Transportation Services						
TOTAL SALES, GAS SUPPLY AND TRANPORTATION SERVICE	541	629	521	699	701	742
Deductions						
Curtailments						
Underground Storage Injections						
LNG Liquefactions						
Sales to other LDC's						
Total Deductions						
NET GAS SUPPLY	541	629	521	699	701	742

conversion @ 1028 Btu

2000-2001 Due to operational emergency deliverablity reduced.

FORM-IRP-GAS-2B: NATURAL GAS TRANSPORTATION
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(volumes in Mmcf)

	Historical Data				Current Year		Three Year Forcast					
Index Year	-2		-1		0		1		2		3	
Actual year	1998-1999		199-2000		2000-2001		2001-2002		2002-2003		2003-2004	
City Gate Transportation Contracts:	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
CONSOLIDATED	3,723	52	3,723	52	3,723	52	3,723	52	3,723	52	3,723	52
TETCO	2,570	43	2,570	43	2,570	43	2,570	43	2,570	43	2,570	43
TETCO	2,390	20	2,390	20	2,390	20	2,390	20	2,390	20	2,390	20
CONSOLIDATED	453	4	453	4	453	4	453	4	453	4	453	4
Total	9,137	120	9,137	120	9,137	120	9,137	120	9,137	120	9,137	120
Upstream Transportation Contracts:												
TRANSCO	58,546	160	58,546	160	58,546	160	58,546	160	58,546	160	58,546	160
TETCO	26,578	73	26,578	73	26,578	73	26,578	73	26,578	73	26,578	73
TETCO	8,442	23	8,442	23	8,442	23	8,442	23	8,442	23	8,442	23
TETCO	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17
TETCE	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17
TRANSCO	172	2	172	2	172	2	172	2	172	2	172	2
Total	98,456	293	98,456	293	98,456	293	98,456	293	98,456	293	98,456	293
Storage-Related Transportation Contracts:												
CONSOLIDATED	9,110	22	9,110	22	9,110	22	9,110	22	9,110	22	9,110	22
CONSOLIDATED	2,760	7	2,760	7	2,760	7	2,760	7	2,760	7	2,760	7
EQUITABLE	1,911	5	1,911	5	1,911	5	1,911	5	1,911	5	1,911	5
Total	13,781	33	13,781	33	13,781	33	13,781	33	13,781	33	13,781	33

Conversion @ 1030 Btu

FORM-IRP-GAS-2C: NATURAL GAS STORAGE [1]
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(volumes in Mmcf)

	Historical Data				Current Year		Three Year Forcast					
Index Year	-2		-1		0		1		2		3	
Actual year	1999		2000		2001		2002		2003		2004	
	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
Consolidated Natural Gas	3,723	52	3,723	52	3,723	52	3,723	52	3,723	52	3,723	52
Consolidated Natural Gas	3,481	28	3,481	28	3,481	28	3,481	28	3,481	28	3,481	28
Transcontinental Transmission Corp.	3,086	36	3,086	36	3,086	36	3,086	36	3,086	36	3,086	36
Texas Eastern Transmission Corp.	2,467	43	2,467	43	2,467	43	2,467	43	2,467	43	2,467	43
Texas Eastern Transmission Corp.	2,219	20	2,219	20	2,219	20	2,219	20	2,219	20	2,219	20
ANR	1,824	13	1,824	13	1,824	13	1,824	13	1,824	13	1,824	13
Equitrans	507	5	507	5	507	5	507	5	507	5	507	5
Consolidated Natural Gas	453	4	453	4	453	4	453	4	453	4	453	4
Transcontinental Transmission Corp.	165	16	165	16	165	16	165	16	165	16	165	16
Total	17,925	218	17,925	218	17,925	218	17,925	218	17,925	218	17,925	218

1 Rank contracts in order of magnitude for the current year, noting the transportation provided and termination date for each contract reported
Reporting should proceed along rank ordering until 75% of total is accounted for, or until ten contracts have been listed, whichever occurs first.

Conversions at 1030 Btu

	Contract Expiration Date [2]
Consolidated Natural Gas	3/31/13
Consolidated Natural Gas	3/31/06
Transcontinental Transmission Corp.	Evergreen
Texas Eastern Transmission Corp.	4/30/12
Texas Eastern Transmission Corp.	4/30/12
ANR	3/31/13
Equitrans	3/31/02
Consolidated Natural Gas	4/15/01
Transcontinental Transmission Corp.	10/31/13

2 For purposes of this report, contracts due to expire are assumed renewed for the forecast years.

Section 59.81 **Forms IRP-Gas 3 - Historical, Current and Forecast Number of Customers**

Provide the number of year end customers displayed by component parts.

Response: Please see the attached form.

FORM-IRP-GAS-3: NUMBER OF CUSTOMERS (YEAR END)
REPORTING UTILUTY: PHILADELPHIA GAS WORKS

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Firm Customers						
Retail Residential	487,466	485,061	479,656	477,028	474,397	462,591
Retail Commercial	24,091	24,858	25,881	26,088	26,303	25,232
Retail Industrial	1,108	1,095	1,198	1,256	1,315	1,321
Other						
Subtotal Sales Service	512,665	511,014	506,735	504,372	502,015	489,144
Electric Power Generation	0	0	0	0	0	0
Transportation Service	9	8	8	8	8	8
CUSTOMER TOTAL	512,674	511,022	506,743	504,380	502,023	489,152
Increase (Decrease)	na	(1,652)	(4,279)	(2,363)	(2,357)	(12,871)
Percent Change (%)	na	-0.32%	-0.84%	-0.47%	-0.47%	-2.56%

Section 59.81 **Forms IRP-Gas 4A and 4B - Annual and Peak Day Energy Supply and Demand**

Response: Please see the attached forms.

FORM-IRP-GAS-4A: ANNUAL SUPPLY AND REQUIREMENTS SUMMARY
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(Volumes in MMcf)

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Gas Supply:						
Supply Contracts	84,924	87,337	89,113	90,343	90,760	88,951
LNG	4,433	3,653	4,259	4571	4,602	4,564
Spot Purchases	0	0	0	0	0	0
Subtotal Gas Supply	89,357	90,990	93,372	94,913	95,363	93,515
Transportation	13,587	14,062	12,438	14,515	14,944	17,923
TOTAL GAS SUPPLY	102,944	105,052	105,810	109,428	110,306	111,438
Requirements:						
Firm Requirements	58,278	58,795	64,477	62,825	62,903	62,339
Liqufaction	4,265	4,084	4,174	4,891	4,833	4,603
Interruptible Requirements	8,764	9,115	8,277	10,563	10,901	10,042
Storage Injections	18,049	18,996	16,444	16,634	16,727	16,530
Subtotal Firm & Interruptible	89,357	90,990	93,372	94,913	95,363	93,515
Transportation	13,587	14,062	12,438	14,515	14,944	17,923
Load Reductions						
TOTAL GAS REQUIREMENTS	102,944	105,052	105,811	109,428	110,306	111,438
Surplus (Deficiency)	0	0	0	0	0	0

FORM-IRP-GAS-4B: PEAK DAY SUPPLY AND REQUIREMENTS SUMMARY
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(Volumes in MMcf)

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Gas Supply:						
Supply Contracts	453.5	432.5	397.4	465.1	465.4	465.4
LNG	88.4	198.4	123.0	234.3	235.5	276.9
Spot Purchases	-	-	-	-	-	-
Subtotal Gas Supply	541.9	630.9	520.4	699.5	700.8	742.2
Transportation	16.7	33.6	21.3	-	-	-
TOTAL GAS SUPPLY	558.6	664.6	541.7	699.5	700.8	742.2
Requirements:						
Firm Requirements [1]	502.7	573.8	514.9	699.5	700.8	695.3
Interruptible Requirements	39.3	57.1	5.5	-	-	46.9
Subtotal Firm & Interruptible	541.9	630.9	520.4	699.5	700.8	742.2
Transportation	16.7	33.6	21.3	-	-	-
Load Reductions			-	-	-	-
TOTAL GAS REQUIREMENTS	558.6	664.6	541.7	699.5	700.8	742.2
Surplus (Deficiency)	0	0	0	0	0	0

[1] Firm requirements include plant use.

Section 59.82 Energy Conservation Report

A. The ARPR must include a detailed description of all conservation and load management programs implemented by the utility during the past calendar year and all programs proposed to be implemented this (current) year. Complete Forms IRP-Gas-5 through IRP-Gas-9 as follows:

Form IRP-Gas 5 – Program Description

1. One Form IRP-Gas-5 must be provided for each program.
2. Provide a descriptive name of the program, the participating customer class and the program status (existing or proposed).
3. Provide the name of an appropriate contact person and telephone number.
4. Succinctly describe the objective(s) of the program.
5. Provide details of the program activities and a schedule for implementation.
6. Provide actual or anticipated results in terms of peak day reduction, load shifted, energy saved or other results, where applicable.
7. Provide a breakdown of all monetary and personnel resources. Additional program expense categories may be used.

Response: Please see attached forms.

FORM-IRP-GAS-5 PROGRAM DESCRIPTION

Company: Philadelphia Gas Works (PGW)

Program: Conservation Works Program (CWP)

Existing [X] Proposed [ ]

Contact Person: Cristina Coltro
(215) 684-6785

Objective: To reduce energy usage, therefore, making bills more affordable for low-income customers whose usage is average or above average and who are participants in the Customer Responsibility Program.

Details of Activity and Implementation Schedule:

Eligible customers are targeted for program participation. For each participating household, PGW's contractors will perform an energy diagnostic audit, energy education, and conservation treatments such as home repairs, automatic clock thermostat, , insulation, etc.

Actual and/or Anticipated Results:

			Energy Savings		
Year	Peak Load Reduction Mcf	Electic Mwh	Gas Mcf	Oil Gallons	Other Results
1999 (1)			13.45		3717 Homes w/ Treatment
2000 (2)			14		4087 Homes w/ Treatment
2001 (3)			15		3650 Projected

Monetary and Personal Resources:

	Categorized program Expenses			
Year	Personnel Est. Hrs. (4)	Outside Services	Admin. (PGW Internal)	Total
1999 (1)	40,887	$1,909,267	$60,000	$1,969,267
2000 (2)	44,957	$1,999,867	$60,000	$2,059,867
2001 (3)	40,150	$2,000,000	$60,000	$2,060,000

(1) Actual
(2) Actual number of participants, actual expenditure, estimated energy savings
(3) Budgeted
(4) Personnel hours were estimated by multiplying the number of homes by 11, the average number of hours spent per home.

C. Coltro
07/30/01

Section 59.82 **Forms IRP-Gas 6 - Energy Users**

Response: Please see the attached forms.

FORM-IRP-GAS-6
ENERGY USERS
COMPANY: PHILADELPHIA GAS WORKS

Fiscal Year Ending August 31, 2000

Firm:	Number of Customers	Sales (Mcf)
Residential		
Heating	418,250	40,165,361
Non-heating	66,811	1,970,789
Commercial	24,858	11,350,501
Industrial	1,095	1,299,208
Sub-total Firm	511,014	54,785,859
Interruptible		
Commercial & Industrial	476	8,604,133
Transportation	8	13,999,393
Totals	511,498	77,389,385

Section 59.82 — Form-IRP-Gas-7 – Conservation and Load Management program Summary

1. Use this form to provide a summary of the information provided in Form IRP-Gas-5.

2. Provide annual totals for program for results and monetary and personnel resources.

3. For programs with annual expenditures of more than $100,000 or more than 0.1% of the total annual revenue, a cost benefit analysis must be performed. The current methodology, prescribed by the Bureau of Conservation, Economics and Energy Planning pursuant to Section 59.82 (E), is essentially the same as that contained in the former Section 69.122, with minor modifications. This methodology shall be used until further notice. The following discussion provides instructions for completing Form IRP-Gas-8 (analysis inputs) and Form IRP-Gas-9 (analysis results), including the necessary definitions and equations.

Response: Please see the attached forms.

FORM-IRP-GAS-7 PROGRAM SUMMARY

Company: Philadelphia Gas Works (PGW)

Program Name	Peak Load Reduction (Mcf)	Energy Use Change (Mcf)	Personnel Est. Hrs (4)	Categorized Program Expenses		
				Outside Services	Adm.	Total
Conservation Works Program (CWP) - 1999 (1)	NA	13.45	40,887	$1,909,267	$60,000	$1,969,267
Conservation Works Program (CWP) - 2000 (2)	NA	14	44,957	$1,999,867	$60,000	$2,059,867
Conservation Works Program (CWP) - 2001 (3)	NA	15	40,150	$2,000,000	$60,000	$2,060,000

(1) Actual
(2) Actual figures except for Energy Savings
(3) Budgeted
(4) Personnel hours were estimated by multiplying the number of homes by 11, the average number of hours spent per home

Section 59.82

Form-IRP-Gas-8 – Conservation and Load Management Program Cost Benefit Analysis Inputs

1. Variable **E** represents the program participants' annual energy savings occurring in year **t**, in Mcf.

2. Variable **CE** represents the program participants' cumulative energy savings, in Mcf.

3. Variable **ES** represents the amount of energy use in which has been shifted in year **t**, in Mcf.

4. Variable **D** represents the program participants' demand reduction occurring in year **t**, in Mcf.

5. Variable **G** represents the equivalent supply reduction, including all identifiable and quantifiable reductions in the utility's demand requirement, occurring in year **t**, in Mcf.

6. Variable **PC** represents the direct cost to the participants of the action or measure, including the initial capital cost, sales tax, operations and maintenance costs, and removal costs less salvage.

7. Variable **I** represent the cost of any monetary Incentive paid directly to the participants to offset explicitly quantified participant costs.

8. Variable **UC** represents all other utility program costs, excluding direct incentives.

9. Variable **d** represents the appropriate discount rate.

10. Variable **ACE** represents the average cost of energy for participants in year **t**. The average cost should reflect actual rates currently in effect, including seasonal-differentiated rates where appropriate, and reasonable escalating rates.

11. Variable **ACD** represent the average cost of demand avoided by participants in year **t**. This variable should be developed by using actual rates currently in effect and escalating those costs into the future. Seasonal-differentiated rates should be used, if appropriate.

12. Variable **CE** represents the marginal cost of energy avoided by the utility in year **t**. Transmission and distribution losses should be reflected in either **MCE** or **E**. If costs are substantially affected by season, appropriate time periods should be used to more closely reflect marginal energy costs.

13. Variable **MCD** represents the marginal cost of supply avoided by the utility in year **t**. If costs are substantially affected by season, appropriate time periods should be used to more closely reflect marginal capacity costs.

14. Variable **S** represents system sales, in thousand cubic feet reflecting the effects of the program over the period of analysis.

15. The period of analysis, **N**, may be less then 30 year, but should be of sufficient length to reflect all program costs and benefits.

Response: Please see the attached forms.

Company Name:
FORM-IRP-GAS-8

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis Input

PROGRAM: Conservation Works Program

t	Year	Energy Savings (E) Mcf	Average Energy Cost (ACE) $ per Mcf	Avoided Enegy Cost (MCE) $ per Mcf	Participant Demand Savings (D) Mcf	Utility Capacity Savings (G) Mcf	Average Demand Costs (ACD) $/Mcf	Avoided Demand Costs (MCD) $/Mcf	Participant Costs (PC) $
1	1999	50,068	$ 8.54	$ 2.24920	N/A	N/A	N/A		$ -
2	2000	50,068	$ 8.50	$ 2.82800	N/A	N/A	N/A		$ -
3	2001	50,068	$ 12.85	$ 5.88070	N/A	N/A	N/A		$ -
4	2002	50,068	$ 10.46	$ 3.41917	N/A	N/A	N/A		$ -
5	2003	50,068	$ 10.97	$ 3.59833	N/A	N/A	N/A		$ -
6	2004	50,068	$ 10.60	$ 3.46667	N/A	N/A	N/A		$ -
7	2005	50,068	$ 10.78	$ 3.53083	N/A	N/A	N/A		$ -
8	2006	50,068	$ 10.64	$ 3.48000	N/A	N/A	N/A		$ -
9	2007	50,068	$ 10.77	$ 3.52833	N/A	N/A	N/A		$ -
10	2008	50,068	$ 10.70	$ 3.50416	N/A	N/A	N/A		$ -
11	2009	50,068	$ 10.71	$ 3.50582	N/A	N/A	N/A		$ -
12	2010	50,068	$ 10.71	$ 3.50747	N/A	N/A	N/A		$ -
13	2011	50,068	$ 10.72	$ 3.50913	N/A	N/A	N/A		$ -
14	2012	50,068	$ 10.72	$ 3.51078	N/A	N/A	N/A		$ -
15	2013	50,068	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
16	2014	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
17	2015	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
18	2016	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
19	2017	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
20	2018	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
21	2019	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
22	2020	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
23	2021	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
24	2022	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -
25	2023	21,964	$ 10.73	$ 3.51244	N/A	N/A	N/A		$ -

Company Name:
FORM-IRP-GAS-8

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis Input

PROGRAM: **Conservation Works Program**

t	Year	Incentive Cost (I) $	Utility Costs (UC) $	Discount Rates: Participant (d) %	Non-Participant (d) %	Utility (1) (d) %	Escalation Rate (e) %	System Sales or Demand (S) Mcf	Sales or Demand Ratio (f) %
1	1999	$ -	$1,969,267	5.9	5.9	5.9	$ -	53,656,947	0.0103
2	2000	$ -	$ -	5.9	5.9	5.9	$ -	55,622,776	0.0099
3	2001	$ -	$ -	5.9	5.9	5.9	$ -	62,565,948	0.0088
4	2002	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0094
5	2003	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0094
6	2004	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0094
7	2005	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0094
8	2006	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0094
9	2007	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0094
10	2008	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0094
11	2009	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0094
12	2010	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0094
13	2011	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0094
14	2012	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0094
15	2013	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0094
16	2014	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0099
17	2015	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0099
18	2016	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0099
19	2017	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0099
20	2018	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0099
21	2019	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0099
22	2020	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0099
23	2021	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0099
24	2022	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0099
25	2023	$ -	$ -	5.9	5.9	5.9	$ -	58,502,694	0.0099

(1) The Participant, Non-Participant and Utility discount rates are based on PGW's AFUDC (Allowance for Funds Used During Construction).

Section 59.82

Form-IRP-Gas-9 – Conservation and Load Management Program Cost Benefit Analysis Results

The results of the cost benefit analysis are presented in terms of benefit-cost ratios and net present values from four perspectives: participant, non-participant, all ratepayers and utility. It is noted that the difference between utility benefit, Bup, under the participant test and utility benefits, Bun, under the utility revenue requirement test is the discount rate, d. The discount rates should reflect the time value of money from the viewpoint being evaluated. For the participant and non-participant tests, market interest rates could be used. A utility's expected cost of capital should be used as the discount factor in determining a utility's net present value of program costs and benefits.

Provide all assumptions used in the evaluation methodology, such as energy and demand savings and costs, marginal costs, tax rates, escalation factors and rates of participation. Identify and discuss unquantified and qualitative variables, such as fuel displacement, environmental impacts, reliability benefits, customer inconvenience and benefits to the local economy.

Response:

Please see the attached forms.

Company Name:
FORM-IRP-GAS-9

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis Input

Program:

Conservation Works Program (CWP)

Period of Analysis		Total Utility Benefits (Bu) $	Total Utility Costs (Cu) $	Revenue Reduction Cost (Cr) $	Participant Revenue Requirement (Rp) $	Total participant Benefits (Bp) $	Total Participant Costs (Cp) $
Beginning Year	Ending Year						
1999	2023	$ 2,083,631	$ 1,969,267	$ 6,213,758	$ 47,195	$ 6,213,758	$ 47,195

	NET PRESENT VALUE			BENEFIT COST RATE			
Discounted Payback Period Yrs.	Participant (NPVp) $	Non-Part (NPVnp) $	Utility (NPVu) $	Participant (BCRp)	Non-Part (BCRnp)	Utility (BCRu)	Rate Impact Non-Part (RIMnp) $/Mcf
25	$ 6,166,563	(6,036,601.42)	$114,363.65	131.66	0.25	1.06	0.004