STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

WPS Resources Corporation, Peoples Energy Corporation, The Peoples Gas Light and Coke Company, and North Shore Gas Company	)	
Application pursuant to Section 7-204 of the Public Utilities Act for authority to engage in a Reorganization, to enter into an agreement with affiliated interests pursuant to Section 7-101, And for such other approvals as may be required under the Public Utilities Act to effectuate the Reorganization.	)	Docket No. 06-0540

DIRECT TESTIMONY OF J. RICHARD HORNBY
ON BEHALF OF
THE CITIZENS UTILITY BOARD AND THE CITY OF CHICAGO

CUB-CITY EXHIBIT 1.0

OCTOBER 31, 2006

Q. Please state your name, position and business address.

A. My name is J. Richard Hornby. I am a Senior Consultant at Synapse Energy Economics, Inc, 22 Pearl Street, Cambridge, MA 02139.

Q. On whose behalf are you testifying in this case?

A. I am testifying on behalf of the Citizens Utility Board ("CUB") and the City of Chicago ("City").

Q. Please describe Synapse Energy Economics.

A. Synapse Energy Economics ("Synapse") is a research and consulting firm specializing in energy and environmental issues.

Q. Please summarize your work experience and educational background.

A. I am a consultant specializing in planning, market structure, ratemaking and gas supply/fuel procurement in the electric and gas industries. Over the past twenty years I have presented expert testimony and provided litigation support on these issues in approximately 100 proceedings in over thirty jurisdictions in the United States and Canada. Over this period my clients have included staff of public utility commissions, state energy offices, consumer advocate offices and marketers.

Prior to joining Synapse in 2006, I was a Principal with CRA International, formerly Tabors Caramanis & Associates. From 1986 to 1998 I worked with the Tellus Institute (formerly Energy Systems Research Group), initially as Manager of the Natural Gas Program and subsequently as Director of their Energy Group. Prior to 1986, I was Assistant Deputy Minister of Energy for the Province of Nova Scotia.

I have a Master of Science in Energy Technology and Policy from the Massachusetts Institute of Technology and a Bachelor of Industrial Engineering from the Technical University of Nova Scotia, now merged with Dalhousie University.

My resume is attached as CUB-City Exhibit 1.01.

Q. What is the purpose of your testimony?

A. Synapse was retained to assist CUB and the City with their assessment of the proposed merger of WPS Resources ("WPS") and Peoples Energy Corporation ("PEC"), collectively, the Applicants. My specific focus was on the impact of the proposed merger on the customers of the two PEC utilities, i.e., The Peoples Gas Light and Coke Company ("Peoples Gas") and North Shore Gas Company ("North Shore Gas"). The purpose of my testimony is to report on my assessment of those implications.

Q. What data sources did you rely upon to prepare your testimony?

A. My primary sources of data were the Direct Testimony filed by witnesses for the Applicants and responses to data requests. CUB-City Exhibit 1.02 includes a copy of each of the responses to which I refer in my testimony. I also reviewed Annual Reports of the Consumer Services Division of the Illinois Commerce Commission (ICC), a report on service quality benchmarking[1] submitted in Docket 99-84 of Massachusetts Department of Telecommunications and Energy (DTE) and orders approving mergers issued by utility regulators in several states.

Q. Please summarize your conclusions regarding the proposed merger.

A. I conclude that, as structured, the merger does not provide material benefits to customers in the form of cost savings or noticeable improvements in service quality. These two weaknesses could be addressed by not making customers wait until 2010 to see cost savings resulting from the merger and by requiring the Applicants to guarantee the achievement of service quality improvements.

I therefore recommend the following:

- Net savings enabled by the merger be reflected in the revenue requirements in the first rate cases filed subsequent to the approval of the merger, as discussed

[1] *Summary of Findings Related to Service-Quality Benchmarking Efforts*, Navigant Consulting, December 19, 2002

in detail in the testimony of Mr. David Effron, witness for the Attorney General.

- The Illinois Commerce Commission ("Commission") impose, as a condition of approving the proposed merger, a requirement that People Gas and North Shore Gas file a proposed Service Quality Plan, as part of their first general rate proceeding after the merger, to be subject to review and approval by the Commission.

Q. Please summarize your recommendations regarding the Service Quality Plan.

A. The Service Quality plan should include, but not be limited to:

- Proposed measures of customer service and safety, including additional measures of customer service/satisfaction such as service appointments met as scheduled, on-cycle meter readings, ICC Consumer Services Division cases and residential billing adjustments.
- Proposed performance targets for each metric;
- Proposed financial penalties for failure to meet performance targets;
- Actual performance of Peoples Gas and North Shore on each of the proposed measures over the past 5 years; and
- Actual performance of WPS gas utilities in other states on each of the proposed measures over the past 5 years.

The Applicants should also be required to include detailed descriptions of the metrics, performance targets and financial penalties including definitions and data collection methodologies. In addition, the Applicants should include the rationale underlying the proposals, including an assessment of industry best practices and service quality plans of comparable utilities in other jurisdictions. The Applicants should be required to submit the proposed service quality plan with their direct testimony. The Commission would make the final determination with regard to

the appropriate metrics, performance targets and financial penalties that should apply to the utilities.

Q. Why is this recommendation relevant to the Commission's assessment of the proposed merger?

A. This recommendation is relevant to the Commission's assessment of the merger under Section 7-204 of the Public Utilities Act ("PUA") from a practical and regulatory policy perspective. I am advised by counsel that the Commission is required to make a series of findings regarding the merger under Section 7-204 of the Public Utilities Act. The first of these is a finding that:

> *the proposed reorganization will not diminish the utility's ability to provide adequate, reliable, efficient, safe and least-cost public utility service*

It is my position, from a practical and regulatory policy perspective, that the Applicants should provide the Commission with data and or enforceable commitments that supports such a finding for each of these service attributes. However, the Applicants have not provided such data or enforceable commitments. Without an explicit quantifiable baseline or reference point against which to measure changes in service the Commission has few, if any, hard facts upon which to determine whether service will diminish, let alone whether it will improve.

<u>Anticipated Benefits of Merger to Customers</u>

Q. Please summarize the position of the Applicants regarding the anticipated benefits of the merger to their Illinois gas utility customers.

A. According to the Applicants the anticipated benefits of the merger to customers are basically energy services at lower cost and improved service. In response to a "Frequently Asked Question" regarding benefits of the merger to customers Peoples Energy states on its web page that:

*The sharing of best practices and commitment to operational excellence **will** result in operating improvements to further enhance service and **should** result in operating efficiencies to help manage overall costs.* (**emphasis added**).

Mr. Weyers makes the same points in his Direct Testimony, on pages 9 through 2.

Q. Are the Applicants proposing that, if the merger is approved, rates charged to their Illinois gas utility customers will be less than current levels?

A. No. The Applicants are proposing to file for an increase relative to current rates in early 2007. This filing would be based upon "pre-merger" costs of the PEC utilities. The Applicants expect that the Commission will approve some level of increase in response to their request and that the resulting new increased rates will take effect in 2008.

Q. Are the Applicants proposing that, if the merger is approved, rates charged to their Illinois gas utility customers will be materially lower than if it is not approved?

A. No. First, the Applicants have not prepared any analyses of the estimated percentage of savings in either future rates or future bills as a result of the merger measured relative to rates that would otherwise have occurred absent the merger. (Responses to CUB-CITY 1.02 and CUB-CITY 1.03).

Second, the net savings in annual costs of regulated gas operations in Illinois that the Applicants are projecting will not translate into a noticeable reduction in the retail rates seen by customers. The Applicants have not prepared such a projection (Response to CUB-CITY 1.08) but one can easily estimate an "order of magnitude" rate impact. For example, according to the Applicants' Exhibit TJF1.5, the highest level of net savings in annual costs of regulated gas operations in Illinois is projected to be approximately $33 million dollars occurring in 2011. In contrast, Peoples Energy had annual revenues from its regulated gas business of approximately $1,700 million in 2005 according to its 2005 Annual Report.

Thus, the order-of-magnitude impact on retail rates is less than 2% (*i.e.*, $33 million as a percentage of $1,700 million).

Q. Are the Applicants proposing that, if the merger is approved, service to their Illinois gas utility customers will be noticeably better than if it is not approved?

A. Yes. In their Direct Testimonies, Mr. Weyers and Mr. Borgard specifically state that the Applicants **will**, not may, improve service.

Q. Have the Applicants supported their statements with commitments to specific improvements in service that can be measured and enforced?

A. No. Messrs Weyers and Borgard emphasize the recognition that WPS Resources has received for "operational excellence" but they do not commit to specific improvements in service that can be measured and enforced. In fact the Applicants have not prepared any quantitative analyses of the percentage improvement in future quality of service if the merger is approved. (Response CUB-CITY 1.04).

Q. What metrics do the Applicants propose to use to measure the impact of the merger on the quality of service to their Illinois customers?

A. The Applicants have identified three categories of metrics for measuring the effects of the merger on the quality, reliability, and safety of service to their Illinois gas customers. (Response to UWUA 4.25). All of these are metrics that Peoples Gas and North Shore have been using.

The three categories are:

- a "Main Ranking Index" that Peoples Gas uses to guide investments in its cast iron/ductile iron main replacement program;
- measurements required under the state and federal pipeline safety codes, including leak rates and various inspections; and
- several measures of customer service and safety.

Q. Please comment on the Applicants' positions regarding specific improvements in the metrics within each of these categories.

A. In terms of the first category, the Applicants stated that their goal is to accelerate Peoples Gas' cast iron main replacement program, perhaps by increasing the annual capital investment by as much as 100 percent. That is a specific commitment that could be measured and enforced. However, it is not clear that the Applicants have presented this as a specific commitment since it is not based upon a detailed analysis. (Response to CUB-CITY 1.11). In any event the commitment is only meaningful if an order approving the merger holds the Applicants to it.

The Applicants have no choice but to satisfy the performance requirements under the second category of metrics. They are required to do so to comply with safety codes. v

Finally, the Applicants have not proposed specific improvement targets for any of the customer service and safety metrics in the third category.

Q. Aside from improvements in service quality, are these service quality metrics adequate to ensure that there will be no diminution in the quality of service if the merger is approved?

A. No. First, the service quality metrics that the Applicants propose to use will not measure customer service/satisfaction adequately. Second, the Applicants have stated that they intend to continue to use the performance targets currently in place. (Response to CUB-CITY 1.16 e). However, as with their cast iron replacement program goal, their commitment to maintain current levels of performance is only meaningful if an order approving the merger holds the Applicants to it.

Q. Please explain why the service quality metrics that the Applicants propose to use will not measure customer service/satisfaction adequately?

A. The service quality metrics that the Applicants propose to use do not provide sufficient measurement of the quality of service to existing customers. This

position is based upon a comparison, described below, of the service quality metrics that Peoples Gas and North Shore have been and are using to metrics being used by other gas utilities. Since there is no generally agreed-upon set of service quality metrics in the gas industry, with common definitions and data collection methodologies, I based my comparison on metrics used by the gas utility subsidiaries of WPS Resources in Wisconsin and Minnesota as well as by metrics reported by gas utilities in Massachusetts. I chose Massachusetts because gas and electric utilities in that state have been operating under a comprehensive service quality plan consisting of metrics, benchmarks and financial incentives since 2002. (Vote to Open Investigation, December 13, 2004 in D.T.E. 04-116). A summary of this comparison is presented in CUB-City Exhibit 1.03.

The service quality metrics that Peoples Gas and North Shore have been using, and propose to continue using, are identified in Responses to UWUA 4.25 and CUB-CITY 1.16. They can be sorted into two broad groups, safety/reliability and customer service/satisfaction.

The metrics in the safety/reliability group are:

- average response time to arrival for leak calls and number of response times greater than 60 minutes;
- number of recordable and lost time injuries;
- number of preventable vehicle accidents;
- percentage of locates completed on time; and
- number and cause of damage to underground facilities.

These metrics are consistent with those being used by other gas utilities to measure safety/reliability, as indicated in CUB-City Exhibit 1.03.

The customer service/satisfaction metrics that Peoples Gas and North Shore have been using are

- average speed to answer calls in call center;

- call center customer satisfaction (surveys of customers who have contacted call center);
- field service customer satisfaction (surveys of customers who have contacted call center); and
- new service installation time (number of orders for new service pending for longer than thirty days).

These metrics are not as comprehensive as those being used by other gas utilities to measure customer service/satisfaction, as indicated in CUB-City Exhibit 1.03. They do not provide sufficient measurement of the quality of service being provided to existing customers.

The Applicants should consider using the following four additional metrics for that purpose:

- service appointments met as scheduled;
- on-cycle meter readings;
- Consumer Services Division cases; and
- residential billing adjustments.

These four metrics are being used in Massachusetts and elsewhere. They are described in detail, with their corresponding targets and financial incentives in Attachment 1, Service Quality Guidelines, to the Vote to Open Investigation issued December 13, 2004 in D.T.E. 04-116. A copy of that Attachment is included as CUB-City Exhibit 1.06.

Q. Please summarize the attributes of service quality to existing customers being measured by each of those four metrics.

A. Those four metrics measure the following attributes of service quality to existing customers:

- service appointments met as scheduled measures the percentage of scheduled service appointments met by company personnel on the day requested,

excluding appointments where the customer misses the mutually agreed-upon time;

- on-cycle meter readings measures the percentage of meters actually read by the company each month;

- consumer services cases measures the number of customer complaints received by the Commission's Consumer Services Division, after the customer has contacted the utility directly, that involve an issue over which the utility has control and the regulator exercises jurisdiction; and

- residential billing adjustments measures the dollar amount of bill adjustments resulting from interventions by the Commission's Consumer Services Division in billing disputes between residential customers and the utility.

Q. Is there evidence indicating that Peoples Gas should be using such additional measures of customer service and satisfaction?

A. Yes. The Consumer Services Division of the Commission receives inquiries and complaints from customers of Peoples Gas and the state's other utilities. These calls relate to concerns about various aspects of service such as billing, estimated meter readings, termination and payment arrangements.

The number of inquiries and complaints that the Consumer Services Division of the Commission received from customers of Peoples Gas roughly doubled from 1999 to 2000 and from 2003 to 2005. By the latter period, the Consumer Services Division was receiving more calls from customers of Peoples Gas than from customers of the state's other major gas or electric utilities. For example, in 2005 year the Consumer Services Division received approximately 65 inquiries/complaints per 10,000 Peoples Gas customers as compared to 10 to 20 inquiries/complaints per 10,000 customers of the other major utilities. The supporting statistics, drawn from Consumers Division annual reports, are presented in CUB-City Exhibit 1.04.

These statistics indicate that Peoples Gas' existing metrics are not fully capturing customers' concerns.

Q. What are you recommending based upon these facts?

A. As stated above, I recommend that the Commission impose, as a condition of approving the proposed merger, a requirement that the Applicants file a proposed gas Service Quality Plan as part of their first general rate filing after approval of the merger. That plan should include proposed measures of customer service and safety, proposed performance targets for each metric, proposed financial penalties for failure to meet the performance targets, and the Applicants' actual performance on each measure over the past 5 years.

Q. Why are you recommending that the Service Quality Plan contain performance targets and financial penalties?

A. As important as it is to implement quantitative measures of actual performance, it is equally important to establish appropriate target levels of performance to be achieved on each measure or metric and financial penalties for actual performance substantially below target levels. These two components provide the utility with clear goals and an incentive to achieve those goals.

Q. Why are you recommending that the Applicants include an assessment of industry best practices and service quality plans of comparable utilities in other jurisdictions?

A. The Applicants should assess industry best practices and service quality plans of comparable utilities in other jurisdictions, because there is does not appear to be a generally agreed-upon set of such metrics in the gas industry. Thus, it makes sense for the Applicants to evaluate the range of metrics currently used within the WPS Resources utilities as well as to examine metrics being used by other utilities, particularly if they truly want to emphasize industry best practices and operational excellence. This is particularly relevant to the development of performance targets.

Q. Why are you recommending that the Applicants propose definitions and data collection methodologies?

A. It is important for the Applicants to provide proposed definitions and data collection methodologies for two reasons. First, because there is no generally agreed-upon set of metrics there is a lack of consistency in definitions, data collection methodologies and reporting protocols. Second, any metrics based upon surveys require careful review of factors such as sample size and design of survey questions.

Q. Why are you recommending that the Applicants report the actual performance of Peoples Gas and North Shore on each of the proposed measures over the past 5 years?

A. The actual performance of Peoples Gas and North Shore on each of the proposed measures over the past 5 years will provide the Commission with a baseline or reference point against which to measure post-merger service quality. This data is necessary to ensure that there not only is no diminution in the quality of service but also that there is real improvement relative to past levels of performance. For example, as noted earlier, the Commission's Consumer Services Division received fewer inquiries/complaints from customers of Peoples Gas in 1999 and 2000 than in recent years, so reducing complaints to 1999 levels would simply be a return to past levels of performance rather than an increase.

Q. Is this recommendation consistent with the approach taken by regulators in other states in response to proposed mergers?

A. Yes. For the same reason that the PUA requires a finding that the merger will not lead to a reduction in service quality, regulators in other states have conditioned their approval of mergers on the implementation of service quality metrics that can be measured and enforced. Examples of orders approving mergers that have required the new entity to measure, set targets for and report on service quality are presented in CUB Exhibit 1.05.

Q. Does this complete your testimony at this time?

A. Yes.

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PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA. *Senior Consultant,* 2006 to present.
Analysis and expert testimony regarding planning, market structure, ratemaking and contracting issues in the electricity and natural gas industries.

Charles River Associates (formerly Tabors Caramanis & Associates), Cambridge, MA.
Principal, 2004-2006.
Senior Consultant, 1998-2004.
Provided expert testimony and litigation support in several energy contract price arbitration proceedings, as well as in electric and gas utility ratemaking proceedings in Ontario, New York, Nova Scotia and New Jersey. Managed a major productivity improvement and planning project for two electric distribution companies within the Abu Dhabi Water and Electricity Authority. Analyzed a range of market structure and contracting issues in wholesale electricity markets.

Tellus Institute, Boston, MA.
Vice President and Director of Energy Group, 1997–1998.
Presented expert testimony on rates for unbundled retail services in restructured retail markets and analyzed the options for purchasing electricity and gas in those markets.
Manager of Natural Gas Program, 1986–1997.
Prepared testimony and reports on a range of gas industry issues including market structure, unbundled services, ratemaking, strategic planning, market analyses, and supply planning.

Nova Scotia Department of Mines and Energy, Halifax, Canada; 1981–1986
Member, Canada-Nova Scotia Offshore Oil and Gas Board, 1983–1986
Member of a federal-provincial board responsible for regulating petroleum industry exploration and development activity offshore Nova Scotia.

Assistant Deputy Minister of Energy 1983–1986
Responsible for analysis and implementation of provincial energy policies and programs, as well as for Energy Division budget and staff. Directed preparation of comprehensive energy plan emphasizing energy efficiency and use of provincial energy resources. Senior technical advisor on provincial team responsible for negotiating and implementing a federal/provincial fiscal, regulatory, and legislative regime to govern offshore oil and gas. Directed analyses of proposals to develop and market natural gas, coal, and tidal power resources. Also served as Director of Energy Resources (1982-1983) and Assistant to the Deputy Minister (1981-1982.

Nova Scotia Research Foundation, Dartmouth, Canada, Consultant, 1978–1981
Edited Nova Scotia's first comprehensive energy plan. Administered government-funded industrial energy conservation program—audits, feasibility studies, and investment grants.

Canadian Keyes Fibre, Hantsport, Canada, Project Engineer, 1975–1977

Imperial Group Limited, Bristol, England, Management Consultant, 973–1975

SELECTED TESTIMONY

Testimony before an arbitration panel in Toronto, Ontario, on behalf of a cogeneration plant regarding a dispute over a component of the price for steam under a 20-year contract. January 2006.

Testimony before an arbitration panel in Halifax, Nova Scotia, on behalf of Nova Scotia Power against Shell Canada regarding the determination of a new price under their ten year natural gas supply contract. October 2005.

State of New York, Public Service Commission, Case 00-M-0504, September 2002 and October 2002. Review of estimates of embedded costs of unbundled services (e.g., supply, distribution, metering, billing), and associated proposed rates, filed by Consolidated Edison of New York and New York State Electric and Gas respectively.

State of New Jersey Board of Public Utilities, BPU Docket GM00080564, April 2001. Analysis of the proposed transfer of gas supply and capacity contracts from Public Service Electric and Gas to an unregulated affiliate, and the full requirements supply contract associated with that transfer.

Nova Scotia Utility and Review Board, NSUARB-NG-SEMPRA-SEM-00-08, February 2001. Review of proposed distribution service tariff, including methodology for setting market-based rates, rates for large customers and default supply.

State of New Jersey Board of Public Utilities, BPU Docket EX99009676, March 2000. Analysis of the design and pricing of customer account services to be offered by utilities on an unbundled basis.

United States of America Bonneville Power Administration, BPA Docket WP-02, (TCA #391), November 1999. Functionalization of Communication Plant.

South Carolina Public Service Commission, 99-006-G, South Carolina Electric and Gas, October 1999. Reasonableness of purchased gas costs.

State of New Jersey Board of Public Utilities, BPU Dockets GO99030122–GO99030125, July 1999 and sur-rebuttal September 1999. Analysis of service unbundling policies and rates proposed in filings of Public Service Electric & Gas, South Jersey Gas, New Jersey Natural Gas, and Elizabethtown Gas.

Maine Public Utilities Commission, Docket 97-393, Northern Utilities Inc., September 1998 and rebuttal December 1998. Review of request for approval of rate redesign and partial unbundling proposal.

Pennsylvania Public Utility Commission, R-00984281, A-12250F0008, Peoples Natural Gas, May 1998. Analysis of the reasonableness of 1998 1307(f) filing and proposal to transfer production assets to affiliate.

State of New Jersey, Board of Public Utilities, BPU E09707 0465, OAL PUC-7309-97, BPU E09707 0464, OAL PUC-7310-97, January 1998 with Supplemental and Sur-rebuttal March 1998. Analysis of rate unbundling filing of Rockland Electric Company.

State of New Jersey, Board of Public Utilities, BPU EO9707 0459, OAL PUC- 7308-97, BPU E09707 0458, OAL PUC-7307-97, November 1997. Analysis of rate unbundling filing of Jersey Central Power & Light Company d/b/a GPU Energy.

Pennsylvania Public Utility Commission, R-00963858, Equitable Gas Company, June 1997 with rebuttal and sur-rebuttal July 1997. Analysis of the reasonableness of rate structure proposals.

Pennsylvania Public Utility Commission, R-00973896 and A-0012250F-0007, (Tellus 97-065) Peoples Natural Gas Company, May 1997. Review of 1997 1307(f) filing, proposal to transfer producing assets to CNG Producing Company, and proposed Migration Rider.

South Carolina Public Service Commission, 97-009-G, South Carolina Pipeline Corporation, April 1997. Reasonableness of proposal to acquire an additional 75,700 Mcf/day of capacity from Transco.

Federal Energy Regulatory Commission, RP95-197-001, RP97-71-000, March 1997. Review of proposed rolled-in ratemaking for Leidy Line incremental facilities.

Arkansas Public Service Commission 95-401-U, Arkla, September 1996. Review of proposed gas purchasing and transportation plan.

Maine Public Utilities Commission, 95-480, 95-481, April 1996, proposed Precedent Agreement between Northern Utilities, Inc. and Granite State Gas Transmission, Inc. for LNG Storage Service (95-480); and PNGTS for Transportation Service (95-481).

Rhode Island Public Utilities Commission, 2025, November 1995, Settlement Agreement reached between ProvGas and the Division of Public Utilities and Carriers.

Pennsylvania Public Utility Commission, R-953406, October 1995, application of T.W. Phillips Gas and Oil Co. for increase in rates and changes in rate and tariff design.

Illinois Commerce Commission, 95-0219, August1995, application of Northern Illinois Gas Company for increase in rates and changes in rate and tariff design.

Pennsylvania Public Utility Commission, R-953316, May 1995, purchased gas costs and gas procurement of Columbia Gas of Pennsylvania with Supplemental Direct Testimony and Sur-Rebuttal Testimony.

Pennsylvania Public Utility Commission R-943252, (Tellus 95-039), May 1995, application of Peoples Natural Gas Company for increase in rates and changes in rate and tariff design.

South Carolina Public Service Commission, 94-007-G, (Tellus 95-038), April 1995, reasonableness of 1994 purchased gas costs of South Carolina Pipeline Corporation.

Pennsylvania Public Utility Commission R-943207, (Tellus 95-014), March 1995, 1995 Purchased Gas Adjustment filing of National Fuel Gas Distribution Corp.

Pennsylvania Public Utility Commission, R-00943063, (Tellus 94-271), December 1994, design of FERC Order 636 transition cost tariff of UGI Utilities, Inc.

South Carolina Public Service Commission, 94-008-G, (Tellus 94-173), October 1994, 1994 Purchased Gas Adjustment of South Carolina Electric and Gas Co.

Oklahoma Corporation Commission, PUD 920, 001342, (Tellus93-250) September 1994, reasonableness of gas supply strategy of Public Service of Oklahoma, including payments to Transok, Inc. for transportation and agency services and rate mechanism for cost recovery. November 1994 Rebuttal testimony in above docket.

Pennsylvania Public Utility Commission, R-943078, (Tellus 94-155), September 1994, Market Sensitive Sales Service proposed by Pennsylvania Gas and Water Company (PG&W).

Massachusetts Department of Public Utilities, D.P.U. 93-141-A, (Tellus 94-184), September 1994, response to questions regarding policies on interruptible transportation and capacity release in DPU IT/CAPACITY RELEASE SCOPE document dated June 16, 1994. October 1994 Comments in above docket.

Hawaii Public Utilities Commission, 7259, (Tellus 94-020), August 1994, HELCO'S proposed DSM programs for competitive energy end-use markets and its multi-attribute analysis.

Pennsylvania Public Utility Commission, R-00943066, (Tellus 94-135), July 1994, 1994 Purchased Gas Adjustment of Pennsylvania Gas and Water Company. August 1994 Sur-rebuttal testimony in above docket.

Pennsylvania Public Utility Commission, R-942993, R-942993 C0001-C0004, (Tellus 94-110), May 1994, proposal of Pennsylvania Gas and Water Company for recovery of FERC Order 636 transition costs. May 1994 Rebuttal testimony in above docket.

Pennsylvania Public Utility Commission, R-943001, (Tellus 94-018), May 1994, application of Columbia Gas of Pennsylvania for an increase in rates and changes in rate design, specifically Negotiated Sales Service.

Pennsylvania Public Utility Commission, R-943029, (Tellus 94-093), May 1994, 1994 Purchased Gas Adjustment of Columbia Gas of Pennsylvania.

Pennsylvania Public Utility Commission, R-932866, R-932915, (Tellus 93-243), 1994, Direct and rebuttal testimony on application of Peoples Natural Gas Company for increase in rates and changes in rate design. March 1994 Rebuttal testimony in above docket.

Kansas Corporation Commission, 180,056-U, (Tellus 92-105), February 1994, Oral Testimony on IRP Rules for gas utilities.

Arizona Corporation Commission, E-1032-93-111, (Tellus 93-099), December 1993, application of Citizens Utility Company, Arizona Gas Division, for an increase in rates, and changes in rate design. January 1994 Sur-rebuttal testimony in above docket.

Hawaii Public Utilities Commission, 7257 (Tellus 93-144B5), December 1993, proposed DSM programs for end-use markets, specifically HECO's residential sector water heating program.

Hawaii Public Utilities Commission, 7261 (Tellus 93-171), September 1993, GASCO IRP. December 1993 Rebuttal testimony in above docket.

Pennsylvania Public Utility Commission, R-932655, R-932655 C001, R-932655 C002, (Tellus93-149), September 1993, balancing service charge proposed by PG&W.

Pennsylvania Public Utility Commission, R-932676, (Tellus 93-092), July 1993, 1993 Purchased Gas Adjustment filing of Pennsylvania Gas and Water Company. July 1993 Rebuttal Testimony in above docket.

Public Utilities Commission of Rhode Island, 2025, (Tellus 93-018), April 1993, Providence Gas Company Integrated Resource Plan.

Pennsylvania Public Utility Commission, I-900009, C-913669, (Tellus 91-074), March 1993, Equitable's charges for transportation service and cost allocation methods in general.

Arkansas Public Service Commission, 92-178-U, (Tellus 92-014), August 1992, Stipulation and Agreement concerning gas cost and purchasing practices issues in Dockets No.91-093-U (Arkla Energy Resources) and No. 92-032-U (Arkansas Louisiana Gas).

Colorado Public Utilities Commission, 91R-642EG, (Tellus 91-203), August 1992, Draft, proposed gas integrated resource planning (IRP) rule.

Pennsylvania Public Utility Commission, R-00922324, (Tellus 92-117), July 1992, 1992 Purchased Gas Adjustment filing of PG&W. July 1992 Supplemental Testimony in above docket.

Pennsylvania Public Utility Commission, R-922180, (Tellus 92-039), May 1992, application of Peoples Natural Gas Company for an increase in rates and accompanying changes, in rate design. June 1992 Rebuttal Testimony in above docket. June 1992 Sur-rebuttal Testimony in above docket

Michigan Public Commission, U-10030, (Tellus 91-120), April 1992, 1992 Gas Cost Recovery Plan submitted Service by Consumers Power Company, specifically the role of demand-side management as a resource in five-year forecast and supply plan.

Pennsylvania Public Utility Commission, R-912140, (Tellus 92-038), March 1992, review of 1992 Purchased Gas Adjustment of T.W. Phillips.

Federal Energy Regulatory Commission, RP91-161-000 et al., RP91-160-000 et al., (Tellus 91-175), February 1992, review of cost allocation and rate design issues in rate case application of Columbia Gas Transmission and Columbia Gulf Transmission (on behalf of PA OCA).

Arkansas Public Service Commission, 91-093-U, (Tellus 92-014), February 1992, establishment of a base cost of gas for Arkla Energy Resources (AER), modification of Purchased Gas Adjustment (PGA). June 1992 Sur-rebuttal Testimony in above docket.

New Hampshire Public Utilities Commission, DR90-183, (Tellus 91-164), January 1992, role of embedded cost-of-service studies, level of customer charges, seasonal differential in commodity rates; and class revenue requirements (Energy North Natural Gas, Inc.).

Arizona Corporation Commission, U-1551-89-102 & U-1551-89-103, U-1551-91-069, (Tellus 90-203) September 1991, Gas Procurement Practices and Purchased Gas Costs (January 1986 – November 1990) of Southwest Gas Corporation. December 1991. Rebuttal Testimony in above docket.

Maryland Public Service Commission, 8339, (Tellus 91-79), July 1991, cost allocation and rate design issues in rate case application of Baltimore Gas and Electric Company.

Public Utilities Commission of Rhode Island, 1727, (Tellus 90-135), June 1991, review of gas procurement practices of Bristol and Warren Gas Company. Sept. 1991, (Tellus 91-165), Supplemental Direct Testimony in above docket.

New Mexico Public Service Commission, 2367, (Tellus 91-030), June 1991, analysis of gas transportation policies proposed by Gas Company of New Mexico.

Pennsylvania Office of Consumer Advocate, R-911889, (Tellus 91-025), March 1991, review of gas supply strategy and purchasing practices of T.W. Phillips.

Michigan Public Service Commission, U-9752, (Tellus 90-099), March 1991, review of 1991 Gas Cost Recovery Plan submitted by Michigan Gas Company to Michigan PSC.

Arkansas Public Service Commission, 90-036-U, (Tellus 90-041), August 1990, reasonableness of certain gas supply contracts, of Arkla, Inc. and its various subsidiary companies including the Arkla-Arkoma transactions. September 1990. Prepared Rebuttal Testimony.

Arizona Corporation Commission, U-1240-90-051, (Tellus 90-059), August 1990, application of Southern Union Gas Company for a change in tariffs.

Public Utility Commission of Utah, 89-057-15, (Tellus 89-242), July1990, Cost Allocation and Rate Design, Mountain Fuel Supply. August 1990 Rebuttal and Sur-rebuttal Testimony.

Pennsylvania Public Utility Commission, R-901595, (Tellus 90-043), June 1990, application of Equitable Gas Company for changes to its tariffs.

West Virginia Public Service Commission, 90-196-E-GI, 90-197-E-GI, (Tellus 90-025), May 1990, expanded Net Energy Cost, coal supply strategy and contracting practices, APS.

Pennsylvania Public Utility Commission, R-891572, (Tellus 90-08B), March 1990, Purchased Gas Costs and Gas Procurement, T.W. Phillips Gas and Oil Co.

Public Utilities Commission of Colorado, 89R-702G, (Tellus 89-30A), January 1990, policies and rules for gas transportation service offered by public utilities regulated by the Commission. January 1990, (Tellus 89-30B), Supplemental Testimony

Arizona Corporation Commission, U-1551-89-102 and U-1551-89-103, (ESRG 89-01), October 1989, Regulatory Oversight of Purchased Gas Costs.

Public Utilities Commission of Rhode Island, 1938, (ESRG 89-139), October 1989, Sales Forecast, Cost Allocation, Rate Design, Narragansett Electric Company.

Pennsylvania Public Utility Commission, R891293, (ESRG 89-92), July 1989, Purchased Gas Costs & Gas Procurement, Pennsylvania Gas and Water. July 1989 Rebuttal Testimony.

Pennsylvania Public Utility Commission, R891236, (ESRG 89-48), May 1989, Take-or-Pay Cost Recovery, Columbia Gas of Pennsylvania.

New Jersey Board of Public Utilities, GR 88070-877, (ESRG 88-150A), February 1989, Take-or-Pay Cost Recovery, Public Service Electric and Gas.

New Jersey Board of Public Utilities, GR 88080-913-Phase II (ESRG 88-150C), February 1989, Take-or-Pay Cost Recovery, South Jersey Gas Company.

New Jersey Board of Public Utilities, GR 88081-019-Phase II (ESRG 88-150D), February 1989, Take-or-Pay Cost Recovery, Elizabethtown Gas Company.

New Jersey Board of Public Utilities, 88080913, (ESRG 88-102), December 1988, Take-or-Pay Cost Recovery, Elizabethtown Gas Company.

Montana Public Service Commission, 87.7.33, 88.2.4, 88.5.10, 88.8.23, (ESRG 88-117), December1988, Gas Procurement, Transportation Service, Gas Adjustment Clause, Montana-Dakota Utilities Company.

New Jersey Board of Public Utilities, GR 88081-019, (ESRG 88-103), November1988, Take-or-Pay Cost Recovery, South Jersey Gas Company.

New Jersey Board of Public Utilities, GR 88070-877 (ESRG 88-89), October 1988, Take-or-Pay Cost Recovery, Public Service Electric and Gas.

Public Service Commission of District of Columbia, Formal Case 874, (ESRG88-58), September 1988, Gas Acquisition, Gas Cost Allocation, Take-or-Pay Cost, Regulatory Oversight; District of Columbia Natural Gas.

Illinois Commerce Commission, 88-0103, (ESRG 88-68), July 1988, Take-or-Pay Cost Recovery.

Public Service Commission of West Virginia, 240-G, (ESRG 88-42), June 1988, Gas Transportation Rate Design.

Pennsylvania Public Utility Commission, R-880958, (ESRG 88-29), June 1988, Purchased Gas Adjustment, Pennsylvania Gas & Water Company.

Public Service Commission of Utah, 86-057-07, (ESRG 87-111), March 1988, Gas Transportation Rate Design; Mountain Fuel Supply.

South Carolina Public Service Commission, 83-126-G, 86-217-G, (ESRG 87-106), January 1988, Gas Supply and Rate Design, Piedmont Gas Company.

South Carolina Public Service Commission, 87-227-G, (ESRG 87-64), September 1987, Gas Supply and Rate Design, South Carolina Electric and Gas.

Arizona Corporation Commission, U-1345-87-069, (ESRG 87-48), September 1987, Fuel Adjustment Clause.

SELECTED RESEARCH AND CONSULTING, PUBLICATIONS, AND PRESENTATIONS

Research and analysis underlying testimony filed before the Ontario Energy Board by Mr. Ralph Luciani on behalf of Greater Toronto Airport Authority regarding rates for standby and distribution service to customers with load displacement generation, Docket No. RP-2005-0020, January 2006. CRA # DO8676-00.

Consulting services to Abu Dhabi Water and Electricity Authority on electric distribution system performance. Identify metrics for technical, economic and service quality performance, establish benchmarks, develop and help implement, a decision-making framework and a set of decision-support tools for identifying and evaluating measures to improve productivity. (2003–2004)

Litigation support, research and analysis underlying testimony filed by Dr. Richard Tabors and Dr. Assef Zobian on behalf of ProGas in two gas supply contract arbitration proceedings regarding the interpretation of, and arbitration proceedings regarding, the pricing provisions in their long-term gas supply contracts with Ocean States Power. (2000 –2004)

Review of Initial Report on Company-Specific Separate Proceedings and Generic Reevaluations; Published Natural Gas Price Data; and Enron Trading Strategies, August 2002. Co-author of report to Powerex Corporation, filed in FERC Docket A02-2.TCA # 592. (2002)

Consulting to the Nova Scotia Petroleum Directorate regarding interpretation of fiscal arrangements in the Canada-Nova Scotia Offshore Petroleum Resources Accord. TCA #781. (2002)

Research and analysis underlying testimony filed before the Federal Energy Regulatory Commission by Dr. Richard Tabors on behalf of Powerex Corporation and the Transaction Finality Group regarding the need for price mitigation in the Pacific Northwest, Docket Nos. EL01-10-000; EL01-10-001, October 2001. TCA # 592.

Research and analysis underlying testimony filed before the Michigan Public Service Commission by Dr. Richard Tabors regarding methodologies for calculating stranded costs and the market value of the generating units of DECo and of Consumers Energy Company based on sales of comparable units. Case No. U-12639, April 2001. TCA # 516.

Consulting to the Houston-Galveston Area Council on the formation of an electric aggregation for city and county governments. TCA #585. (2001)

Consulting to Staff of the Arkansas Public Service Commission regarding gas-purchasing practices of local gas utilities. TCA #582. (2001–2002)

Consulting to the South Carolina Department of Consumer Affairs on a range of gas utility ratemaking issues. TCA #548. (2001–2002)

Review of the cost-benefit analysis of RTO West, and the challenges to that analysis. TCA #646 (2001–2002).

Consulting to an independent power plant regarding the reasonableness of the rate it was being charged for utility standby service. TCA #518 (2000).

Consulting to an energy marketer regarding a strategy for energy service providers to replace utilities as providers of standard offer and default services. TCA #517. (2000)

Consulting to the Nova Scotia Petroleum Directorate on the tariff for gas distribution service and on policies to govern the licensing of retail gas suppliers. TCA #461. (2000)

Assistance to the National Association of State Utility Consumer Advocates (NASUCA) in reviewing, and preparing comments on, *Regulation of Short-Term Natural Gas Transportation Services* (FERC Docket RM98-10-000) and *Regulation of Interstate Natural Gas Transportation Services* (FERC Docket RM98-12-000). Tellus 98-014. Principal investigator, 1998.

Assistance to the Oklahoma Attorney General's Office re: Oklahoma Corporation Commission's Rulemaking Proceedings on Gas Unbundling in Oklahoma. OCC Case No. RM9700009. Tellus No. 97-105, 1997.

Assistance to the Province of Nova Scotia re: The Sable Offshore Energy Project and related pipeline projects. Assessment of U.S. market for Nova Scotia gas—demand, existing supply, proposed supply. Tellus 96-209, 1997.

Consulting to Massachusetts Division of Energy Resources re retail gas market restructuring, including proposals in Boston Gas rate case. Docket 96-50. Tellus 96-064 (1996–1998).

Consulting to Pennsylvania Office of Consumer Advocate. Gas Industry Restructuring in Pennsylvania. Tellus analyzed key issues raised by the proposed legislation for restructuring the gas industry in Pennsylvania. Tellus 95-323, 95-093, (1996–1998)

Consultant to Staff of the Georgia Public Service Commission as sub-contractor to Foster Associates. Atlanta Gas Light rate cases and rate unbundling filing. Tellus No. 97-099. (1997–1998)

Consultant to Consumers Gas and Nova Scotia Power Corporation regarding the preparation of an application for a gas distribution franchise in Nova Scotia. Tellus No. 97-209. (1997)

Consultant to Staff of the Colorado Public Service Commission regarding retail gas market restructuring. Tellus No. 97-150. (1997)

Consultant to Maine Office of Public Advocate regarding retail gas market restructuring. Docket No. 97-267. Tellus No. 97-132 (1997).

Consulting to So. Carolina Division of Consumer Advocate re: future structure and regulation of gas services in South Carolina. Docket No. 94-719-G. Tellus No. 96-025 and 95-120 (1995–1996).

Consulting to Pennsylvania Office of Consumer Advocate regarding pilot programs of retail choice for gas, Borough of Pleasant Hills, Allegheny County, et al. Docket No. P-00950980. Tellus 95-323. (1996–1997)

Comments of the Pennsylvania Office of Consumer Advocate on FERC's Notice of Proposed Rulemaking dated February 14, 1995, regarding Alternatives to Traditional Cost-of-Service Ratemaking for Natural Gas Pipelines. (FERC Docket no. RM95-6-000.) Tellus No. 95-092. Principal investigator, 1995

Natural Gas Growth in the State of Florida—Barriers and Benefits. A report to Florida Energy Office Department of Consumer Affairs, Tellus No. 94-236, Principal Investigator, 1995.

Analysis of Cost Implications of the Proposed LNG Facility in Wells, Maine, on Northern Utilities' Ratepayers. Tellus Study No. 95-015. Co-author, 1995.

Comments of Joint Consumer Advocates on Issues Raised by the FERC Notice of Public Conference dated October 28, 1993, specifically (1) rate and valuation treatment to be accorded the profits or losses associated with the sale or abandonment of gathering facilities, and (2) appropriate rate design for gathering and related production expenses. (FERC Docket No. RM94-4-000) Tellus No. 93-264. Principal investigator. (1993–1994)

A Framework for Future Regulation of Gas Services in Maryland. Recommendations of Staff of the Maryland Public Service Commission. Tellus Study No. 93-273. Principal investigator, 1994.

Projections of Fuel Prices in Vermont: Summer 1993. Technical Report 28 to Vermont Department of Public Service. Tellus Study No. 93-026. Principal investigator, 1993.

GASCO, Inc. Integrated Resource Plan Report. Volume 1 and 2. Before the Public Utilities Commission, State of Hawaii. Docket No. 7261. Project manager and principal investigator, 1993.

Position Paper on Gas Integrated Resource Planning, N.Y.P.S.C. Docket No. 93-G-0326. Assistance to Pace Energy Project et al. in developing comments on gas integrated resource planning. Tellus No. 93-163. Co-author, 1993.

Advertising Costs in Demand-Side Management Programs. A report to: The Corporation Commission Staff, Phoenix, Arizona. Tellus Study No. 93-103. Co-author, 1993.

Proposed Rules Governing Integrated Resource Planning for Electric and Natural Gas Utilities Regulated by the State of Kansas. In collaboration with Kansas Corporation Commission Staff. Tellus Study No. 92-105. Co-author, 1993.

Consultant to Pennsylvania Office of Consumer Advocate regarding FERC Order 636, Impact on Purchased Gas Costs, T.W. Phillips Gas and Oil Co. (Tellus No. 93-021), 1993

Consultant to Staff of the Maryland Public Service Commission. Review and critique of the DSM Plans of five Maryland natural gas utilities. Tellus Study No. 91-222. Project manager and principal investigator, 1992/3.

The Analysis of Residential Gas Heat Pumps as a DSM Measure from an Integrated Resource Planning Perspective. A report to: The American Gas Cooling Center, Arlington, VA. Tellus Study No. 91-265. Co-author, 1992.

Management Audit of Arkla, Inc. Regarding Its Compliance with the Least-Cost Purchasing Statute of the State of Arkansas. A report to: The Staff of the Arkansas Public Service Commission. Tellus Study No. 91-080. Principal investigator. 1992

Preliminary Study on Integrated Resource Planning for the Consumers' Gas Company, Ltd. A report to: Consumers Gas Company, Ltd. Tellus Study No. 91-001. Co-author, 1992.

Comments on Gas IRP Rule and Issues, on behalf of: Pennsylvania Office of Consumer Advocate. Docket No. L-00920066. Tellus Study No. 92-141. Author, 1992.

Draft Comments to the New Mexico Attorney General in the Matter of an Inquiry by the New Mexico Public Service Commission into Integrated Resource Planning, for Natural Gas Utilities. Case No. 2449. Tellus Study No. 91-077. Principal investigator, 1992.

Projections of Fuel Prices in Vermont. Submitted to: Vermont Department of Public Service. Tellus Study No. 92-043. Principal investigator, 1992.

Informal and Preliminary Responses to Generic Questions on Gas Utility Demand Side Management Cost Recovery Issues. Before the Pennsylvania Public Utility Commission, on behalf of: Office of Consumer Advocate. Tellus No. 91-252. Author, 1992.

Consultant to District of Columbia Office of People's Counsel. Analysis and critique of the least-cost integrated plan of District of Columbia Natural Gas. Tellus Study No. 90-149. Project manager and principal investigator, 1991/2.

America's Energy Choices: Investing in a Strong Economy and a Clean Environment In collaboration with the Union of Concerned Scientists, the American Council for an Energy Efficient Economy, the Natural Resources Defense Council, and the Alliance to Save Energy. Tellus Study No. 90-067. Co-author, 1991.

Assistance to Wisconsin Gas Company regarding appropriate avoided cost calculations. Tellus No. 89-145, 1990.

Environmental Impacts of Long Island's Energy Choices: The Environmental Benefits of Demand-Side Management. A report to: Long Island Power Authority. Tellus Study No. 90-028A. Co-author, 1990.

Review of Southern Connecticut Gas Company's Conservation Impact Model. Prepared for The Conservation Collaborative Group: Southern Connecticut Gas Company; Connecticut Department of Public Utility Control (DPUC); Prosecutorial Division, DPUC; Office of Policy and Management/Energy Division; Office of Consumer Counsel. Tellus Study No. 90-084. Co-author, 1990.

Conservation and Capacity Optimization Alternatives to the PGT/PG&E Gas Pipeline Project. Prepared for: California Public Utilities Commission, under contract to: Jones & Stokes Associates, Inc. Tellus Study No. 90-03. Principal Investigator, 1990.

Evaluation of Repowering the Manchester Street Station. A report to: Rhode Island Division of Public Utilities and Carriers, Rhode Island Division of State Planning, and Rhode Island Governor's Office of Housing Energy and Intergovernmental Relations. Tellus Study No. 90-010. Co-author, 1990.

Consultant to Pennsylvania Office of Consumer Advocate regarding cost allocation and rate design issues, T.W. Phillips Gas and Oil Co. (R-891566). (Tellus 90-008), 1990.

Evaluation of gas supply and non-utility generation regarding Vermont utilities, for the Vermont Public Service Board. Tellus No. 89-110B, 1989.

Consultant to MCAAA on incentive ratemaking issues, Michigan Consolidated Gas Company, U-9475. (ESRG 89-213), 1989

Consultant to Maryland People's Counsel regarding review of three aspects of the application of Frederick Gas Company, Inc., for an increase in rates. (Study No. 89-137), 1989

An Analysis of FERC Policy Statement Regarding Natural Gas Pipeline Rate Design. A report prepared for the Maryland People's Counsel. ESRG Study No. 89-104. Principal Investigator, 1989.

Consultant to Staff of the Wisconsin Public Service Commission, Calculation of Avoided Natural Gas Costs. ESRG Project No. 89-80, 1989.

Fuel Procurement Planning of Gas-Fired Cogeneration Projects Proposed for Massachusetts. A report prepared for the Massachusetts Office of Energy Resources. ESRG Study No. 88-65. Principal Author, 1988.

Consultant to Staff of Arkansas Public Service Commission, Natural Gas Purchasing Practices. ESRG Project No. 87-03, 1987.

A Review of Trends in Natural Gas Rate Design in the United States. A report prepared for Gaz Metropolitan under subcontract to Econosult Limited. ESRG Study No. 87-24. Principal Author, 1987.

Towards an Energy Transition on Long Island: Issues and Directions for Planning. A report prepared for Nassau and Suffolk Counties. ESRG Study No. 87-05, 1987.

An Evaluation of Kentucky's Fuel Adjustment Clause for Electric Utilities. A report to the Kentucky Office of the Attorney General. ESRG Study No. 86-74. Principal author, 1986.

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What If You Deregulated A Market And No One Shopped? Pricing Standard Offer Service in Electric Retail Markets. Presented at the US Association of Energy Economists annual conference, Philadelphia, September 26, 2000.

Developing an RFP for a Municipal Aggregation. Presented at "Electric Deregulation: What's the Next Step for Municipalities", New Jersey State League of Municipalities, Iselin, New Jersey. May 5, 1999.

Feasibility of Small Customer Aggregation for the Delivery of Comprehensive Energy Services in a Competitive Utility Environment. An evaluation of the feasibility of alternative options for providing electricity and related services to residential customers in a competitive retail market. Project manager and principal author. Report prepared for the Department of Energy, Chicago Regional Office by Environmental Futures, Tellus Institute, and EUA Citizens Conservation. 1998.

Natural Gas Price Volatility: Implications for Consumers. Presented to National Association of State Utility Consumer Advocates, Boston, Massachusetts, November 11, 1997.

"Applying Performance-Based Ratemaking to Gas Utility Services," presented to: NASUCA 1996 Mid-Year Meeting, Chicago, Illinois. June 26, 1996.

"Unbundling: To be or not to be?" Fifth Annual DOE-NARUC Natural Gas Conference, Roundtable Moderator, 1996.

"New Approaches to Regulation of Gas Utilities: Unbundling and Performance-Based Ratemaking." A presentation to: National Association of Utility Consumer Advocates, Reno, Nevada. Co-author, 1994.

"Fuel Choice in Demand-Side Management: Creating a Level Playing Field for Gas and Electric DSM." A presentation to: New England Chapter—International Association for Energy Economics, MIT Faculty Club, 1994.

"Sensitivity Analysis of Avoided City-Gate Gas Costs." Presented at: NARUC/DOE Fifth National Conference of Integrated Resource Planning, Kalispell, MT, May 15-18. Co-author, 1994.

"Fuel Choice, Competition & DSM," *Energy Report.* Co-author, 1994.

"Fuel Choice in Demand-Side Management: Creating a Level Playing Field for Gas and Electric DSM." A presentation to: New England Chapter - International Association for Energy Economics, MIT Faculty Club, 1994.
"The Energy Policy Act of 1992 and Gas Integrated Resource Planning." Presented at: NARUC Workshop "Competition in the Energy Markets and its Impact on IRP", St. Louis, Missouri, May 25, 1993.

"Policy Issues Associated with Gas Integrated Resource Planning." Presented at: Natural Gas Seminar, Public Utilities Commission of the State of Colorado, Denver, Colorado, May 19, 1993.

"Sensitivity of Avoided City-Gate Gas Cost Estimates to Calculation Methods and Input Assumptions." A Working Paper presented at: Gas Integrated Resource Planning (IRP) Workshop, NARUC Gas IRP Subcommittee Meeting, NARUC Annual Conference, Los Angeles, CA, Co-author, November 15, 1992.

"Natural Gas Planning: An IRP Case Study." Presented at: The NARUC Conference on Integrated Resource Planning, Burlington, Vermont, Co-author, September 13-16, 1992.

"Major Sources of Controversy in Gas Least Cost Planning." Presented at: Washington Gas Least Cost Planning Conference, Washington, D.C., April 7-8, 1992.

"Calculating the Value of Avoided Gas Requirements: Methods and Results." Presented at: NARUC Third National Conference on Integrated Resource Planning, Santa Fe, NM, April 8-10, 1991.

"State Gas Issues in an Era of Open Access Transportation." A presentation to: National Association of State Utility Consumer Advocates, San Francisco, 1988.

"Setting Rates for Unbundled Services to Meet Competition," Proceedings of the Sixth NARUC Biennial Regulatory Information Conference, Columbus, Ohio, 1988.

"Offshore Gas and Oil: Progress and Prospects." A presentation to: Mining Society of Nova Scotia Annual Meeting, Ingonish, Nova Scotia, 1986.

Energy Plan 1985. Nova Scotia Department of Mines and Energy. Steering Committee Chairman, 1986.

Nova Scotia Oil and Gas Report 1985. Nova Scotia Department of Mines and Energy. Editor, 1985.

"The Canada-Nova Scotia Agreement on Offshore Oil and Gas Resource Management and Revenue Sharing." A presentation to: Canadian Bar Association Annual Meeting, Halifax, Nova Scotia, 1985.

Coal in Nova Scotia. Nova Scotia Department of Mines and Energy. Editor, 1985.

"Regulatory Approaches." A presentation to: Canadian Petroleum Association Offshore Operating Division Annual Workshop, Fairmont Hot Springs, British Columbia, 1985.

"Nova Scotia's Offshore Oil and Gas." A presentation to: Economic Council of Canada/University of Calgary Energy Conference, Calgary, Alberta, 1985.

Nova Scotia Oil and Gas Report 1984. Nova Scotia Department of Mines and Energy. Editor, 1984.

Nova Scotia Natural Gas - An Alternative for the Northeast. Nova Scotia Department of Mines and Energy. Editor, 1984.

Oil and Gas Exploration in Nova Scotia 1982-83. Nova Scotia Department of Mines and Energy. Editor, 1983.

A Soft Energy Path for Nova Scotia. Volume III of 2025: Soft Energy Futures for Canada. Report to Energy, Mines and Resources Canada by the Friends of the Earth. Co-author, 1983.

Oil and Gas Exploration in Nova Scotia 1981-83. Nova Scotia Department of Mines and Energy. Author, 1982.

"The Future of Coal Utilization in Nova Scotia." A presentation to: Chemical Institute of Canada Annual Conference, Halifax, Nova Scotia, 1981.

Nova Scotia Natural Gas—An Alternative for the Northeast. Nova Scotia Department of Mines and Energy. Editor, 1984.

Energy, A Plan for Nova Scotia. A proposal from the Energy Planning Task Force 1979. Editor and Coordinator, 1979.

An Assessment of Government Policies to Promote Investments in Energy Conserving Technologies. Thesis, Massachusetts Institute of Technology. Author, 1978.

Responses to Data Requests

CUB-City 1.02
CUB-City 1.03
CUB-City 1.04
CUB-City 1.08
CUB-City 1.11
CUB-City 1.15
CUB-City 1.16

UWUA 2.03
UWUA 4.25

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Citizens Utility Board and the City of Chicago's Data Requests 1.01-1.16
Dated: October 11, 2006

REQUEST NO. CUB-CITY 1.02
Referring to Weyers testimony, page 9, lines 192 and 193, and page 12 line 245, regarding provision of energy services at lower cost and positive rate effects: Please provide all analyses prepared by or for the Applicants of the estimated percentage reduction in future rates of Peoples Gas Light and North Shore Gas as a result of the merger, and the anticipated effective date of that reduction. Please provide all supporting inputs, assumptions and calculations.

RESPONSE:

No analyses were prepared by or for the Applicants of the estimated percentage of savings in future rates of The Peoples Gas Light and Coke Company (Peoples Gas) and North Shore Gas Company (North Shore Gas) as a result of the merger, in that Peoples Gas and North Shore Gas customers will experience a smaller rate increase than would otherwise have occurred, absent the merger. Mr. Weyers' statement is based on the estimated synergies resulting from the merger as quantified by Mr. Flaherty and the Applicants' regulatory strategy for post 2009. In addition, the statement is based on the fact that Peoples Gas and North Shore Gas committed to using an historical test year rather than a forecasted test year period for the rate case to be filed in 2007. Given the effect of inflation, historical test years generally result in lower revenue requirements than future test years. Finally, the statement is also based on the fact that, prior to the merger announcement, Peoples Gas and North Shore Gas had announced a rate filing for July 2006. The announced rate filing would have been based on a forecast 2007 test year. That rate filing (which will use an historical test year rather than a future test year) has been postponed to early 2007, again deferring the rate increase for the Peoples Gas and North Shore customers.

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Citizens Utility Board and the City of Chicago's Data Requests 1.01-1.16
Dated: October 11, 2006

REQUEST NO. CUB-CITY 1.03

Referring to Weyers testimony, page 9, lines 192 and 193, regarding provision of energy services at lower cost: Please provide all analyses prepared by or for the Applicants of the estimated percentage reduction in future average bills by rate class of Peoples Gas Light and North Shore Gas as a result of the merger, as well as the anticipated effective date of that reduction. Please provide all supporting inputs, assumptions and calculations.

RESPONSE:

No such analyses were prepared by or for the Applicants. See the response to CUB-CITY 1.02

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Citizens Utility Board and the City of Chicago's Data Requests 1.01-1.16
Dated: October 11, 2006

REQUEST NO. CUB-CITY 1.04

Referring to Weyers testimony, page 10, lines 203 and 204, and page 11 lines 227 to 230, regarding improving service, please provide all quantitative analyses prepared by or for the Applicants of:

a. Future quality of service if the merger is not approved; and

b. Percentage improvement in future quality of service if the merger is approved.

Please provide all supporting inputs, assumptions and calculations.

RESPONSE:

a. No quantitative analysis has been prepared of the future quality of service if the merger is not approved.

Please see Citizens Utility Board and the City of Chicago's Data Request CUB-City 1.16(d)

b. No quantitative analysis has been prepared of the percentage improvement in future quality of service if the merger is approved.

Please see Citizens Utility Board and the City of Chicago's Data Request CUB-City 1.16(e) for the process to identify and implement improvements

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Citizens Utility Board and the City of Chicago's Data Requests 1.01-1.16
Dated: October 11, 2006

REQUEST NO. CUB-CITY 1.08

Referring to Schott testimony, page 5, lines 93 to 95, please express the estimated level of annual net synergy savings that would be passed on to customers in any new base rates effective after 2009 as a percentage of the estimated total revenue requirements of the Gas Companies at that time.

RESPONSE:

As the revenue requirements for the Gas Companies have not been calculated the information necessary to do the calculation requested is not available.

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Citizens Utility Board and the City of Chicago's Data Requests 1.01-1.16
Dated: October 11, 2006

REQUEST NO. CUB-CITY 1.11

Referring to Schott testimony, page 8, line 176, please provide all analyses underlying the proposed goal of doubling the annual capital investment in the cast iron replacement program.

RESPONSE:

No analysis has been prepared underlying the proposed goal of doubling the annual capital investment in the cast iron replacement program. At the time of the announcement, the goal of doubling the annual investment was based on a general assessment that such an increase would be reasonable from a work load impact, impact on the related infrastructure in the service territory and the impact on rates from this investment. As noted in the filing, Peoples Gas will propose an accelerated cast iron main replacement program in the 2007 rate filing. That proposal will be based on a thorough review of the cast iron replacement program.

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Citizens Utility Board and the City of Chicago's Data Requests 1.01-1.16
Dated: October 11, 2006

REQUEST NO. CUB-CITY 1.15

Referring to Borgard testimony, page 6, lines 92 to 106, please provide all assessments prepared by or for the Applicants of:

a. Customer service if the merger is not approved; and

b. Specific improvements the Applicants would make in customer service and the timeline for these improvements.

RESPONSE:

a. No assessments have been prepared by or for the Applicants of Customer Service if the merger is not approved. Please see Citizens Utility Board and the City of Chicago's Data Request CUB-City 1.16(d).

b. No assessments have been prepared by or for the Applicants regarding specific improvements that the Applicants would make in customer service and the timeline for these improvements.

Please see Citizens Utility Board and the City of Chicago's Data Request CUB-City 1.16(e) for the process to identify and implement improvements.

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Citizens Utility Board and the City of Chicago's Data Requests 1.01-1.16
Dated: October 11, 2006

REQUEST NO. CUB-CITY 1.16:

Referring to Borgard testimony, page 7, lines 119 to 120, please provide the following data and analyses:

a. A list of the internal benchmarks that WPS resources uses to measure the performance of its gas utility operations in terms of customer satisfaction and service quality;

b. The actual performance of each of its utility systems on each of the metrics referenced in response to 1.16 (a) in 2005;

c. The actual or estimated performance of Peoples Gas Light and North Shore Gas on each of the metrics referenced in response to 1.16 (a) in 2005;

d. The forecast performance of Peoples Gas Light and North Shore Gas on each of the metrics referenced in response to 1.16 (a), if the merger is not approved;

e. The target levels of performance to which the Applicants are committed if the merger is approved, and the timeline for these improvements.

RESPONSE:

Response for CUB-City 1.16 a & b:

Wisconsin Public Service Corporation (WPSC), the primary utility subsidiary of WPS Resources, utilizes the following metrics to measure the performance of its gas utility operations in terms of customer satisfaction and service quality.

NOTE: WPSC is a combined gas and electric utility with integrated functions that support both gas and electric customers. Other than the Gas Leak Response Measure, which is a gas-specific measure, the other measures below represent WPSC's overall performance for all customers, both gas and electric. Separate measures are not maintained for WPSC gas versus electric customers, as WPSC customers typically are both. Similarly the customer satisfaction measures discussed below in items 3, 4, and 5 are the combined results of WPSC and the Upper Peninsula Power Company (UPPCo), an electric-only utility subsidiary of WPS Resources. Separate customer satisfaction measures are not maintained for WPSC and UPPCo, as UPPCo utilizes the same measures and represents only approximately 10% of the total customers surveyed.

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Citizens Utility Board and the City of Chicago's Data Requests 1.01-1.16
Dated: October 11, 2006

1. Gas Leak Response Time – See attached file CUB-City 1.16 WPSC Gas Leak Resp.pdf, titled "2005 WPSC Gas Leak Response." This chart shows WPSC's 2005 monthly average response times to reported gas leaks or gas odors, from receipt of telephone call to arrival of a responder on site to investigate and make the situation safe. WPSC's corporate target for this measure is 26 minutes or less. The captions on this chart describe specific process changes or events which impacted average response times. In particular, in October 2005 WPSC implemented a new interface for dispatching gas leaks in conjunction with its conversion to the new Open-C CIS system. This process change resulted in an initial increase in time required to dispatch until the new process and interface with Open-C stabilized.

2. New Service Installation Time- See attached file CUB-City 1.16 WPSC NSI Time.pdf, titled "NSI Target Trending." WPSC's goal for new service installations is to have 90% or more of all new services installed within 15 business days of when the customer or contractor has completed all steps required for WPSC to be able to install the service. Examples of these steps include the foundation is poured and back-filled to within 6 inches of final grade; the route for the service is clear of all trees, debris, and building materials and within 6 inches of final grade; all permits, easements, or inspections are complete and on file at the local WPSC office, and contracts are signed and any advanced payments required are made. This chart shows WPSC's performance by month in 2005 relative to this goal. The 90% goal was not achieved in December 2005, but performance on this goal rebounded in January 2006 and has been tracking at or above 90% again since that time.

3. New Service Installation Customer Satisfaction - See attached file CUB-City 1.16 WPSC 2005 NSI Cust Sat.pdf, titled "New Service Installation (NSI) -- Residential" and "New Service Installation (NSI) -- C&I." These charts show on a scale from 1 to 10 how satisfied residential and commercial and industrial customers were by month in 2005 with their overall experience of having a new service installed. Data is collected from mail surveys sent to all commercial and industrial new service customers and to a statistical sample of residential new service installations. Results from returned surveys are monitored for the levels of their scores and to detect trends, which may indicate a process change has occurred or may be necessary to improve customer satisfaction scores. For this and WPSC's other customer satisfaction scores, WPSC strives to achieve scores of 8 or higher, which indicate high levels of customer satisfaction.

   NOTE: On the Residential chart there appears to be a significant drop in customer satisfaction with WPSC's New Service Installation process in December 2005, down to a score of 6.3. As noted in the caption on the chart, this was due to a very limited sample size, as only three residential surveys were returned in December 2005. The median for this small sample size was 8.0, which was well within the control limits. The NSI survey

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Citizens Utility Board and the City of Chicago's Data Requests 1.01-1.16
Dated: October 11, 2006

process was discontinued starting in October 2005 during the conversion to and stabilization of WPSC's new Open-C CIS system.

Similarly on the C&I chart there are two months where performance fell below the lower process control limit. The captions explain the causes of these variations. In May 2005 two of the nine surveys returned rated their service experience poorly, which pulled the composite result below the lower control limit. In October 2005 there was a similar situation as happened with the residential surveys in December 2005. There was a small sample size of only four surveys returned, and low scores by part of these customers pulled the composite score below the lower control limit.

In January 2006 WPSC restarted data collection on the New Service Installation process and divided the measure into two phases. Phase 1 measures customer satisfaction with the application and design portions of the NSI process. Phase 2 measures customer satisfaction with the scheduling, construction, and billing portions of the NSI process. Customer satisfaction scores for both phases of the NSI process continue to meet WPSC's target of 8 or better.

4. Customer Communication Center Satisfaction - See attached file CUB-City 1.16 WPSC 2005 CCC Cust Sat.pdf, titled "Customer Communications Center - CCC." This chart shows on a scale from 1 to 10 how satisfied residential customers were by month in 2005 with the overall experience of their recent interaction with WPSC's Customer Communication Center. Data is collected through a phone survey on a statistical sample of customers who have called the Customer Communication Center within the past 48 hours with questions on their account, primarily involving billing or credit. For this and WPSC's other customer satisfaction scores, WPSC strives to achieve scores of 8 or higher, which indicate high levels of customer satisfaction.

   NOTE: As indicated in the captions on this chart, the data source for this survey was interrupted in August 2005 during the initial conversion to the Open-C CIS system, restarted for the month of September, then interrupted again from October through December during the startup stabilization of the CIS system. Thus there were no data points for those four months in 2005. The CCC Customer Satisfaction measure was restarted in January 2006. Scores have not been as high post-CIS conversion as they were pre-CIS conversion, ranging from 7.3 to 8.2 post-conversion, compared to a range of 8.7 to 9.3 pre-conversion. WPSC is analyzing the data to determine the cause of the drop in these scores.

5. Business Solutions Center Satisfaction - See attached file CUB-City 1.16 WPSC 2005 BSC Cust Sat.pdf, titled "Business Solutions Center - BSC." This chart shows on a scale from 1 to 10 how satisfied commercial customers were by month in 2005 with the overall

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Citizens Utility Board and the City of Chicago's Data Requests 1.01-1.16
Dated: October 11, 2006

experience of their recent interaction with WPSC's Business Solutions Center. The Business Solutions Center is WPSC's customer center focusing on service to commercial customers. Data is collected through a phone survey on a statistical sample of commercial customers who have called the Business Solutions Center within the past 48 hours with questions on their account. For this and WPSC's other customer satisfaction scores, WPSC strives to achieve scores of 8 or higher, which indicate high levels of customer satisfaction.

Response for CUB-City 1.16 c:

1. Gas Leak Response Time - Peoples Gas Light and North Shore Gas track average gas leak response times similarly to WPSC. See attached file CUB-City 1.16 PGL & NSG 2005 Leak Resp.doc, titled "2005 PGL Gas Leak Response" and "2005 NSG Gas Leak Response." These charts show Peoples Gas Light's and North Shore Gas' 2005 monthly average response times to reported gas leaks or gas odors, from receipt of telephone call to arrival of a responder on site to investigate and make the situation safe. Peoples Gas Light's and North Shore Gas' corporate target for this measure is 27 minutes or less.

2. New Service Installation Time - For new service installations, Peoples Gas Light and North Shore Gas monitor how many orders for new service installations have been pending for longer than 30 days. See attached file CUB-City 1.16 PGL & NSG 2005 New Services.doc, titled "2005 PGL New Services – Completed and Pending Over 30 Days" and "2005 NSG New Services – Completed and Pending Over 30 Days." These charts show Peoples Gas Light's and North Shore Gas' 2005 monthly volume of new services installed and the number of service installations pending for longer than 30 days each month. North Shore Gas has a target of completing 90% of new service installations within 30 days from when the customer's site is ready for the service to be installed to when the meter has been set. Peoples Gas Light has a different service installation target than North Shore Gas, with Peoples Gas Light's goal being to have no orders for new services pending longer than 30 days.

   NOTE: The significant rise on this chart in the number of new service installations pending longer than 30 days in the last three to four months of 2005 shows the typical "fall rush" of new service orders, as building contractors work to get buildings enclosed and heated so they will have an inventory of inside work to carry them through the winter. In many cases during the fall rush Peoples Gas Light and North Shore Gas do not get the service order until the building is already up and the contractor is looking for gas to heat with.

3. New Service Installation Customer Satisfaction - Peoples Gas Light and North Shore Gas do not presently have a separate customer satisfaction measure similar to WPSC's

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Citizens Utility Board and the City of Chicago's Data Requests 1.01-1.16
Dated: October 11, 2006

customer satisfaction surveys for their new service installation process, but such customers may respond to the surveys described in items 4 and 5. Having no historical data, Applicants are unable to estimate what the results would be if a similar NSI customer satisfaction survey measure was in place at Peoples Gas Light and North Shore Gas.

4. Field Service Customer Satisfaction – Peoples Gas Light and North Shore Gas conduct weekly surveys to measure the overall satisfaction of customers who had a recent Field Service visit. Each week surveys are sent to 500 Peoples Gas Light customers and 75-100 North Shore Gas customers who experienced a Field Service visit. In the surveys a 7-point scale is utilized for overall satisfaction, where a 7 represents "extremely satisfied" and a 1 represents "extremely dissatisfied." The benchmark for overall satisfaction is the percentage of customers giving their Field Service visit a score of 6 or 7. See attached file CUB-City 1.16 PGL 2005 Field Service Survey.pdf, titled "PGL Field Service Survey, 2005 Overall Satisfaction Trend" and file CUB1 16 NSG 2005 Field Service Survey.pdf, titled "NSG Field Service Survey, 2005 Overall Satisfaction Trend" for charts of the 2005 monthly results for these Field Service customer satisfaction surveys. Overall customer satisfaction with Field Service visits at both Peoples Gas Light and North Shore Gas was generally high, typically with 80% or more of customers rating the experience with a score of 6 or 7.

5. Call Center Customer Satisfaction – Peoples Gas Light and North Shore Gas conduct weekly surveys to measure the overall satisfaction of customers who contacted their Call Center. Each week surveys are sent to 500 Peoples Gas Light customers and 75-100 North Shore Gas customers who contacted the Call Center. In the surveys a 7-point scale is utilized for overall satisfaction, where a 7 represents "extremely satisfied" and a 1 represents "extremely dissatisfied." The benchmark for overall satisfaction is the percentage of customers giving their Call Center experience a score of 6 or 7. See attached file CUB-City 1.16 PGL 2005 Call Center Survey.pdf, titled "PGL Call Center Survey, 2005 Overall Satisfaction Trend" and file CUB-City 1.16 NSG 2005 Call Center Survey.pdf, titled "NSG Call Center Survey, 2005 Overall Satisfaction Trend" for charts of the 2005 monthly results for these Call Center customer satisfaction surveys. Overall customer satisfaction with Call Center contacts for both Peoples Gas Light and North Shore Gas customers was on an upward trend for both companies in 2005. Both started the year with around 58% of customers rating the Call Center contact experience with a score of 6 or 7. Peoples Gas Light ended the year with about 62% of scores at a 6 or 7, while North Shore Gas ended the year with about 67% of scores at a 6 or 7.

Response for CUB-City 1.16 d:

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Citizens Utility Board and the City of Chicago's Data Requests 1.01-1.16
Dated: October 11, 2006

If the merger is not approved, the performance of Peoples Gas Light and North Shore Gas on their gas leak response time, new service installation time, Field Service customer satisfaction, and Call Center customer satisfaction measures would be expected to be similar or an improvement to the 2005 results discussed above in the response to CUB-City 1.16 c.

As noted above in item number 3 in the response to CUB-City 1.16 c, Peoples Gas Light and North Shore Gas do not have a customer satisfaction survey measure in place for their new service installation process. Having no historical data, Applicants are unable to forecast what the results would be if a similar customer satisfaction survey measure was initiated and the merger then not approved.

Response for CUB-City 1.16 e:

WPS Resources has gas utility operations across a number of states that have been recognized for their service quality and customer satisfaction. WPS Resources and Peoples Energy Corporation currently have integration teams engaged in the development of post-closing implementation plans. These integration teams are working to understand the differences and similarities between the companies through discussions of their processes and sharing their knowledge and experiences.

The goals for all integration teams are to strive toward industry best practices and operational excellence across all jurisdictions; to operate safely, both for our employees and the customers and public we serve; and to experience high levels of service quality and customer satisfaction. As part of post-closing implementation planning, the Applicants will be establishing measures to assist them in ensuring those goals of high levels of service quality and customer satisfaction are met. These measures will be the same or similar to those described above for WPSC, Peoples Gas Light, and North Shore Gas, measures such as gas leak response times, the time required to install new gas services, the satisfaction of customers with the service installation processes, and the satisfaction of customers with their interactions with the Applicants' Call Centers.

As the companies are still learning each other's work processes and building understanding of each other's environment and capabilities, specific targets that differ from those in place today at Peoples Gas Light and North Shore Gas would be difficult to determine at this point. Initially after closing, the Applicants intend to continue the measures and their target levels currently in place at WPSC, Peoples Gas Light, and North Shore Gas. Those measures and targets, along with the processes that underlie them, will be adjusted as necessary going forward to assure the combined companies achieve their goals of high service quality and customer satisfaction.

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Utility Workers Union of America Data Request 2.01 - 2.18
Dated: September 5, 2006

REQUEST NO. UWUA 2.03

Have applicants performed, or caused to be performed, any analyses or studies that address, concern or relate to the impact of the proposed reorganization on the quality, safety or reliability of services provided to customers by Peoples Gas/North Shore? If so, please identify and provide each such study or analysis, whether in preliminary, draft or final form, and all data (including documents) that concern or relate to the contents or conduct of any such studies or analyses. If not, please explain fully why no such studies or analyses have yet been undertaken.

RESPONSE:

No such studies have yet been performed. As noted in responses to several ICC Staff data requests, the Applicants are currently in the process of developing post-closing implementation plans, during which employees of PEC and WPSR will engage in discussions and share their specialized knowledge. The quality, safety or reliability of services provided to customers by Peoples Gas/North Shore will be of paramount concern as these groups develop plans.

ICC Docket No. 06-0540
WPS Resources Corporation's/Peoples Energy Corporation's Responses to Utility Workers Union of America Data Requests 4.01 – 4.33
Dated: September 29, 2006

REQUEST NO. UWUA 4.25

After the merger, what metrics will be used to measure effects of achievement of the proposed synergies on the (a) quality, (b) reliability, and (c) safety of gas service to Chicago customers?

RESPONSE:

The metrics Peoples Gas and North Shore are using today will continue to be utilized after the merger to assure both companies continue to provide safe, reliable, and quality service to their customers. Examples of these metrics include: average speed to answer calls in call center, average response time to arrival for leak calls, number of response times greater than 60 minutes for leak calls, number of recordable and lost time injuries, number of preventable vehicle accidents, percentage of locates completed on time, and number and cause of damage to underground facilities.

Compliance with state and federal pipeline safety code requirements is important to providing safe, reliable, and quality service and will continue to be measured by both Peoples Gas and North Shore. Examples of these measurements include leak rates from surveys of mains and services and various inspections (corrosion inspections and corrective actions, inside safety inspections, regulator inspections, etc.).

Finally, Peoples Gas will continue to utilize its Main Ranking Index system to analyze its entire gas distribution system and help identify where capital can be most effectively deployed for its cast iron/ductile iron main replacement program to achieve the goals of providing safe, reliable, and quality gas service to Chicago customers.

Gas Utility Service Quality Measures

Category	Measures	Peoples Gas and North Shore	WPS Resources - Wisconsin	WPS Resources - Minnesota	MA gas utilities
Customer Service and Customer Satisfaction Customer Satisfaction	Telephone response time	Yes		Yes	Yes
	Service Appointments Met as Scheduled				Yes
	On-Cycle Meter Readings				Yes
	Customer Service O&M			Yes	
	New Service Installation Time	Yes	Yes		
	Consumer Division Cases (complaints)			Yes	Yes
	Residential Billing Adjustments				Yes
	Consumer surveys	Yes	Yes		Yes
	New Service Installation		Yes		
Staffing Level	Staffing Level				Yes
Safety and Reliability	Response to Odor calls/emergency response times	Yes	Yes	Yes	Yes
	Lost Work Time	Yes			Yes
	Locates			Yes	
	Locates on time	Yes			
	Damage to lines	Yes		Yes	
	Service Interruptions			Yes	
SOURCES		CITY-CUB 1.16, UWUA 4.25	CITY-CUB 1.16,	MN PUC Order in G-007,011/M-05-1676 and MN PUC Staff briefing papers February 12, 2004	Attachment 1, Order in DTE 04-116, December 13, 2004

EXCERPTS FROM ANNUAL REPORTS OF CONSUMER SERVICES DIVISION OF ILLINOIS COMMERCE COMMISSION

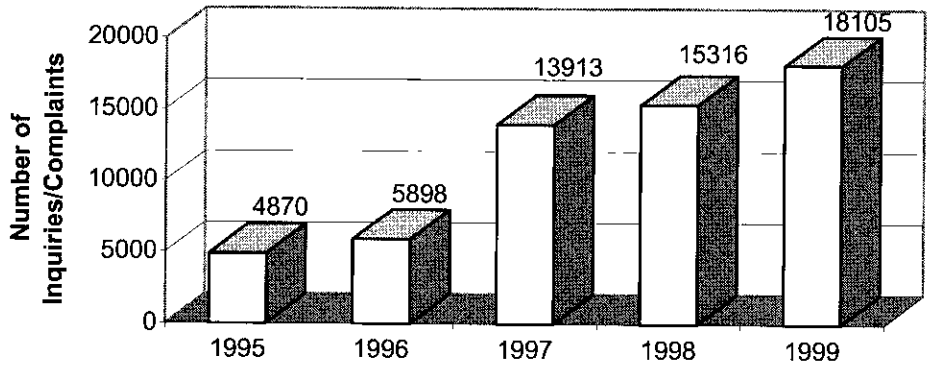
Years in order of appearance

1999

2001
2002
2003
2004
2005

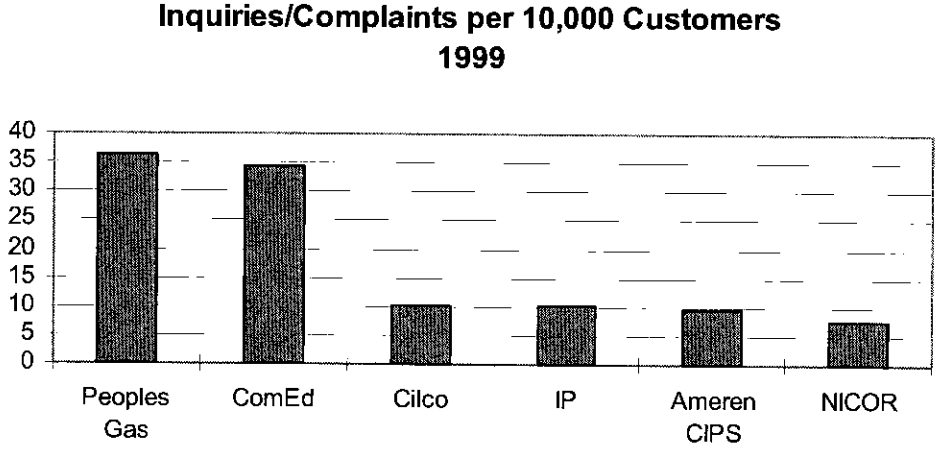
ENERGY INDUSTRY

Graph 6



Graph 6 shows the number of inquiries and complaints that were received each year by CSD for the electric and gas companies from 1995 through 1999.

Graph 7

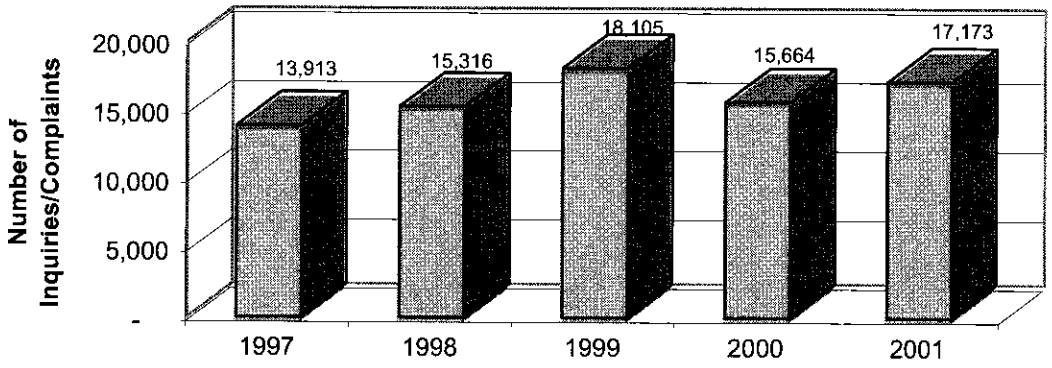


Graph 7 illustrates the number of inquiries/complaints received per 10,000 customers for the major companies in the energy industry.

ENERGY INDUSTRY

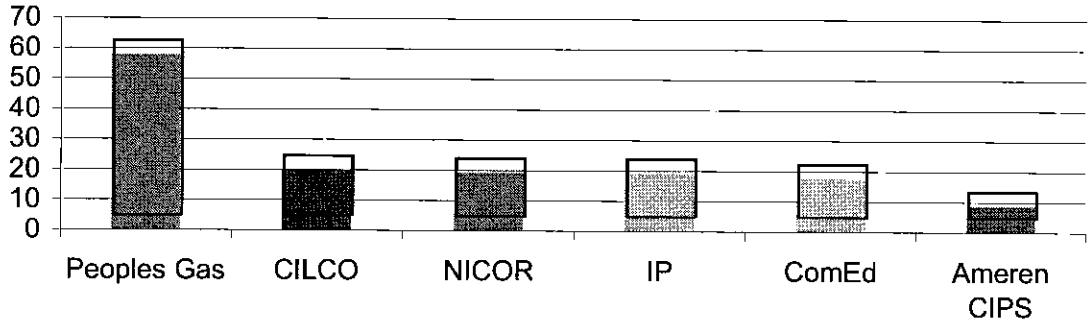
Inquiries and complaints included in the "Energy Industry" category are those concerning companies that provide only electric service, companies that provide only gas service, and companies that provide both gas and electric service.

Energy Industry Contacts



The graph above illustrates the number of inquiries and complaints there were received each year by CSD for the electric and gas companies from 1997 through 2001.

Inquiries/Complaints per 10,000 Customers
2001

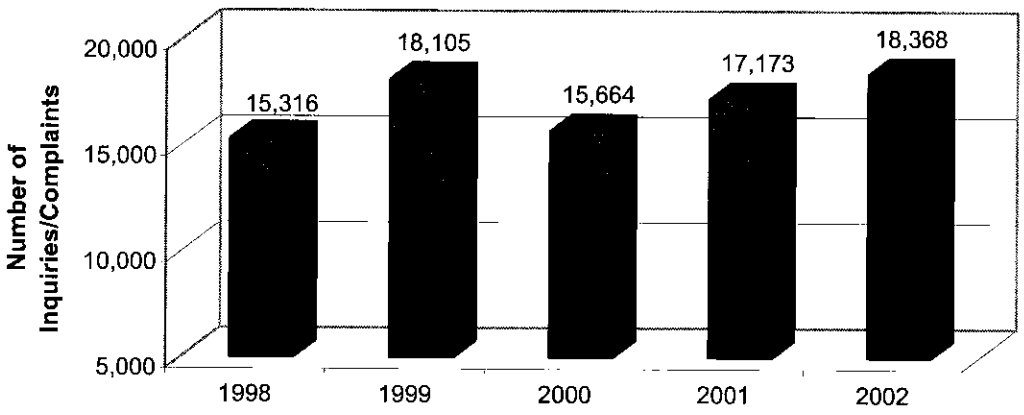


The graph above illustrates the number of inquiries/complaints received per 10,000 customers for the major companies in the energy industry. The number of calls concerning natural gas service significantly increased in 2001 compared to the previous year. This was directly related to the high cost of natural gas. Peoples Gas led in the number of calls related to billing, estimated meter readings, termination, and payment arrangements.

ENERGY INDUSTRY

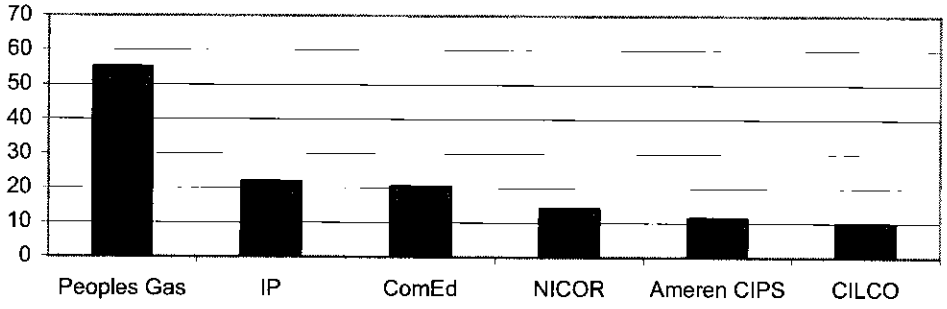
Inquiries and complaints included in the "Energy Industry" category are those concerning companies that provide only electric service, companies that provide only gas service, and companies that provide both gas and electric service.

Energy Industry Contacts



The graph above illustrates the number of inquiries and complaints there were received each year by CSD for the electric and gas companies from 1998 through 2002.

Inquiries/Complaints per 10,000 Customers
2002

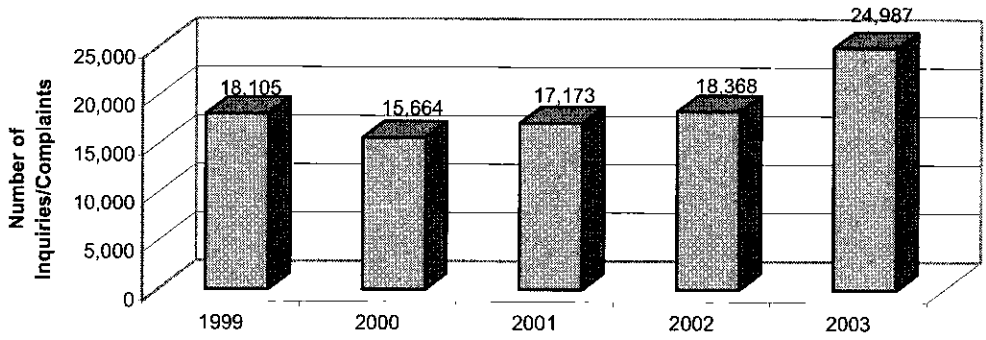


The graph above illustrates the number of inquiries/complaints received per 10,000 customers for the major companies in the energy industry. Peoples Gas led in the number of calls related to billing, estimated meter readings, termination, and payment arrangements.

ENERGY INDUSTRY

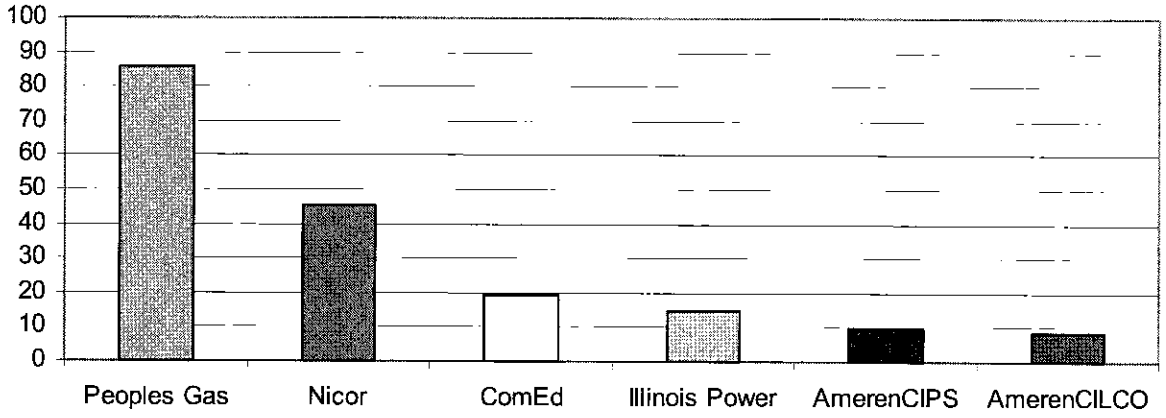
Inquiries and complaints included in the "Energy Industry" category are those concerning companies that provide only electric service, companies that provide only gas service, and companies that provide both gas and electric service.

Energy Industry Contacts



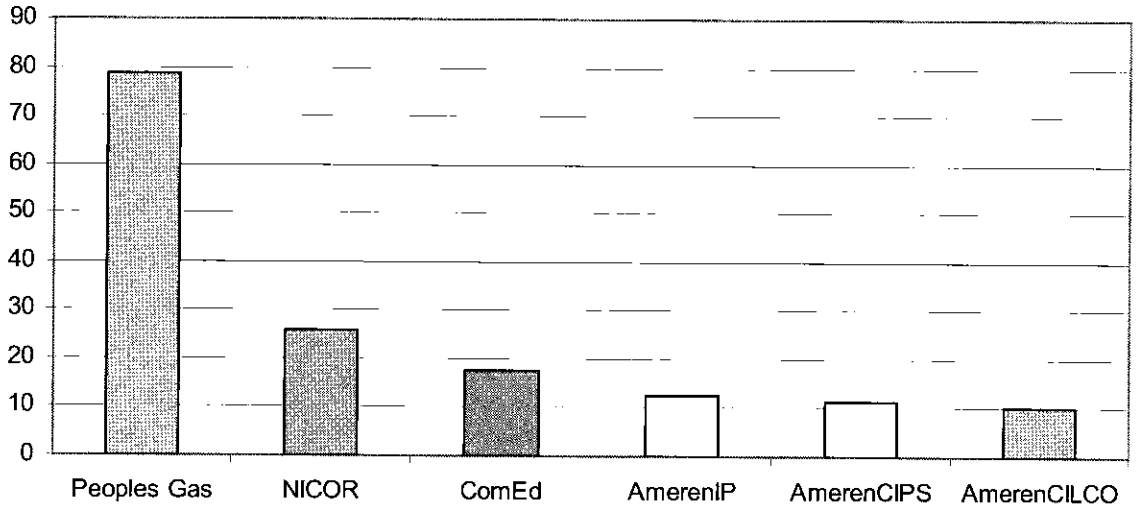
The graph above illustrates the number of inquiries and complaints that were received each year by CSD for the electric and gas companies from 1999 through 2003.

Inquiries/Complaints per 10,000 Customers 2003



The graph above illustrates the number of inquiries/complaints received per 10,000 customers for the major companies in the energy industry. Peoples Gas led in the number of calls related to billing, estimated meter readings, termination, and payment arrangements.

Inquiries/Complaints per 10,000 Customers 2004



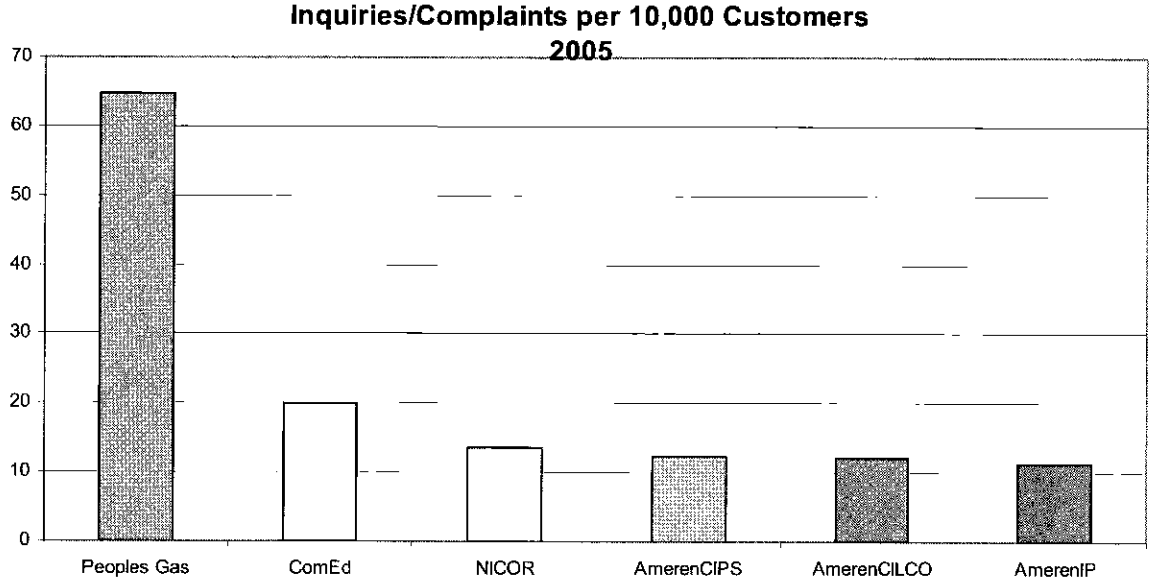
The graph above illustrates the number of inquiries/complaints received per 10,000 customers for the major companies in the energy industry. Peoples Gas led in the number of calls related to billing, estimated meter readings, termination, and payment arrangements.

2004 ENERGY INQUIRIES/COMPLAINTS FOR SMALLER ELECTRIC AND GAS COMPANIES

Company	Customers*	Contacts
AmerenUE	66,200	165
North Shore	149,200	159
Atmos Energy	23,600	34
MidAmerican	83,700	30
Illinois Gas	10,300	5
Interstate	12,800	3
Mt. Carmel	5,600	2
Consumers Gas	5,900	1

*Estimated Number

The complaint and inquiry volume for electric and gas companies with less than 150,000 customers is shown in the chart above, beginning with the utility with the largest volume of contacts.



The graph above illustrates the number of inquiries/complaints received per 10,000 customers for the major companies in the energy industry. Peoples Gas led in the number of calls related to billing, estimated meter readings, termination and payment arrangements.

2005 ENERGY INQUIRIES/COMPLAINTS FOR SMALLER ELECTRIC AND GAS COMPANIES

Company	Customers*	Contacts
North Shore	149,300	169
AmerenUE	63,200	72
Atmos Energy	23,700	36
MidAmerican	83,900	17
Interstate	12,800	12
Mt. Carmel	5,600	6
Illinois Gas	10,100	3
Consumers Gas	5,800	1

*Estimated Number

The complaint and inquiry volume for electric and gas companies with less than 150,000 customers is shown in the chart above, beginning with the utility with the largest volume of contacts.

Examples Of Orders Conditioning Approval Of Mergers & Asset Transfers On Implementation Of Service Quality Measures

State	Docket	Company	Company	Order issued
MA	D.T.E. 98-128	Eastern Enterprises	Colonial Gas Company	July 15, 1999
MN	E,G-002/PA-99-1031	Northern States Power	New Century Energies	June 12, 2000
NJ	GM04070721	NUI Utilities	AGL Resources	November 9, 2004
NC	E-7, Sub 795	Duke Energy	Cinergy	March 24, 2006
MN	G-007,011/M-05-1676	WPS Minnesota Utilities	Aquila	June 1, 2006
PA	A-120011F2000, A125146F5000, A-125146	UGI	Southern Union	August 17, 2006

Service Quality Guidelines

Attachment 1 to the Vote to Open Investigation dated December 13, 2004 issued by the Massachusetts Department of Telecommunications and Energy in D.T.E. 04-116

ATTACHMENT 1

SERVICE QUALITY GUIDELINES

I. GENERAL

A. Provisions

The following guidelines shall apply to every gas and electric distribution company authorized to do business in the Commonwealth of Massachusetts, unless otherwise indicated. In the event of a conflict between these guidelines and any orders or regulations of the Department, said orders and regulations shall govern. If a gas or electric distribution company requests approval of a service quality plan that deviates, in whole or in part, from these guidelines, the request must be accompanied by reasons for each and every departure.

B. Definitions

"Billing Adjustment" shall mean a revenue adjustment amount resulting from Departmental intervention in a billing dispute between a Company and a residential customer.

"Circuit" shall mean a conductor or system of conductors through which an electric current is intended to flow.

"Class I Odor Call" shall mean those calls that relate to a strong odor of gas throughout a household or outdoor area, or a severe odor from a particular area.

"Class II Odor Call" shall mean calls involving an occasional or slight odor at an appliance.

"Company" or "Companies" shall refer to electric and gas distribution companies unless other wise indicated.

"Complaint" shall mean a formal complaint to the Consumer Division of the Department wherein the Consumer Division creates a systems record with a customer's name and address.

"Consumer Division Case" shall mean a written record opened by the Consumer Division of the Department in response to a Complaint that meets the criteria set forth in Section III.A.

"Customer Average Interruption Duration Index" or "CAIDI" shall mean the total duration of customer interruption in minutes (as calculated by application of Section V herein) divided by the total number of customer interruptions, expressed in minutes per

year. CAIDI characterizes the average time required to restore service to the average customer per sustained interruption during the reporting period.

"Customer Equipment Outage" shall mean an outage caused by customer operation or the failure of customer-owned equipment.

"Electric Distribution" shall mean the delivery of electricity over lines that operate at a voltage level typically equal to or greater than 110 volts and less than 69,000 volts to an end-use customer within the Commonwealth.

"Electric Distribution Facility" shall mean plant or equipment used for the distribution of electricity that is not a transmission facility, a cogeneration facility, or a small power production facility.

"Electric Distribution Feeder" shall mean a distribution facility circuit conductor between the service equipment, the source of a separately derived system, or other power-supply source and the final branch-circuit overcurrent device.

"Electric Distribution Line Loss" shall mean the electrical energy that is lost in the distribution system. Such loss includes (1) energy that is lost directly due to the delivery of electrical energy and results from the physical properties of the system's wires and transformers and other incidental substation use, and (2) energy that is lost because of diversion, theft, and other unmetered use.

"Electric Distribution Service" shall mean the delivery of electricity to the customer by the electric distribution company over lines that operate at a voltage level typically equal to or greater than 110 volts and less than 69,000 volts.

"Emergency Call" shall mean a telephone call where the caller believes that he or she is confronting special circumstances that might lead to bodily and/or system-related damage if the circumstances remain unaddressed. Examples include, but are not limited to, downed wires, gas leaks, and gas odor reports.

"Excludable Major Event" shall mean a major outage event that meets one of the following criteria: (i) the event is caused by earthquake, fire, or storm of sufficient intensity to give rise to a state of emergency being proclaimed by the Governor (as provided under the Massachusetts Civil Defense Act); (ii) any other event that causes an unplanned interruption of service to 15 percent or more of the electric distribution company's customers in an operating area; or (iii) an event that results from the failure or disturbance of a transmission, power supply, or other system that is not owned or operated by the electric distribution company. Notwithstanding the foregoing criteria, an extreme temperature condition would not constitute an Excludable Major Event.

"Lost Work Time Accident Rate" shall mean the Incidence Rate of Lost Work Time Injuries and Illness per 200,000 Employee Hours as defined by the U.S. Department of Labor Bureau of Labor Statistics.

"Meter Reading" shall mean the act of manually or automatically acquiring customer-specific usage levels of an energy resource, expressed in numerical units, for a defined period by actually consulting the customer's meter.

"Momentary Outage" or "Momentary Interruption" shall mean an outage or interruption of electric service of less than one minute.

"Non-emergency Call" shall mean all telephone calls other than emergency calls.

"Operating Area" shall mean a geographical subdivision of each electric distribution company's franchise territory as defined by the electric distribution company. These areas may also be referred to as regions, divisions, or districts.

"Planned Outage" shall mean an outage that is scheduled by the utility and of which customers are notified in advance, including, for example, during the connection of new customers or to ensure the safe performance of maintenance activities.

"Poor Performing Circuit" shall mean any distribution feeder that:

(i) has sustained a circuit SAIDI or SAIFI value for a reporting year that is among the highest (worst) ten percent of that utility's feeders for any two consecutive reporting years; or

(ii) has sustained a circuit SAIDI or SAIFI value for a reporting year that is more than 300 percent greater than the system average of all feeders in any two consecutive reporting years.

"Restricted Work Day Rate" shall mean the Incidence Rate of Restricted Work cases per 200,000 Employee Hours as defined by the U.S. Department of Labor Bureau of Labor Statistics.

"Service Appointment" shall refer to a mutually agreed upon arrangement for service between the Company and the customer that specifies the date for the Company's personnel to perform a service activity that requires the presence of the customer at the time of service.

"Service Interruption To A High-profile Customer" shall mean an outage that has a reasonable probability of involving a high-profile customer, including a hospital, airport,

or large manufacturing, commercial, or institutional customer (who has a demand of 1 megawatt or greater).

"System Average Interruption Duration Index" or "SAIDI" shall mean the total duration of customer interruption in minutes (as calculated by application of Section V herein) divided by the total number of customers served by the distribution system, expressed in minutes per year. SAIDI characterizes the average length of time that customers are without electric service during the reporting period.

"System Average Interruption Frequency Index" or "SAIFI" shall mean the total number of customer interruptions divided by the total number of customers served by the distribution system, expressed in interruptions per customer per year. SAIFI characterizes the average number of sustained electric service interruptions for each customer during the reporting period.

"Sustained Outage" or "Sustained Interruption" shall mean an outage or interruption of electric service that lasts at least one minute and is not classified as a momentary outage.

"Transmission and Distribution Revenues" shall mean revenues collected through the base rates of a transmission and distribution company.

"Unaccounted-for Gas" shall mean the reduction in the quantity of natural gas flowing through a pipeline that results from leaks, venting, and other physical and operational circumstances on a pipeline system. Unaccounted-for Gas is also referred to as a line loss.

"Year" shall mean calendar year unless otherwise noted.

C. Benchmarking

The historical average and standard deviation for benchmarking will be based on the ten most recent years worth of data for each Company. This will be a fixed average for the duration of the PBR. Where ten years worth of information is not available to a specific Company, the Company is directed to use the maximum number of years of data available, so long as three years are available. As the Company collects additional data, that data will be included in benchmarking until ten years worth of data is collected.

For SAIDI and SAIFI, the historic average and standard deviation for benchmarking will be based on the years 1996, 1997, 1998, 1999, and 2000.

II. CUSTOMER SERVICE AND BILLING PERFORMANCE MEASURES

A. Telephone Service Factor

Each Company shall gather data and report statistics on its handling of telephone calls. Call data shall be compiled and aggregated monthly. Reporting shall occur annually. The reports shall be submitted in accordance with Section IX below. Each Company shall report the percentage of telephone calls that are handled within a time interval that is consistent with a Company's existing telephone response-time measurement system, or as otherwise approved by the Department. Companies who have had no telephone response-time measurement system until the date of this Order shall adopt a 20-second performance standard. At the conclusion of five years from the date of this Order, all Companies shall adopt the 20-second performance standard. Each Company shall also provide, separately, call-handling times for Emergency Calls and Non-Emergency Calls. Telephone Service Factor shall be measured beginning at the point that the caller makes a service selection and ending at the point that the call is responded to by the service area selected by the caller. If the caller does not make a selection, the response time shall be measured from a point following the completion of the Company's recorded menu options and ending at the point that a customer-service representative responds to the call.

Telephone Service Factor shall be a performance measure subject to a revenue penalty.

B. Service Appointments Met As Scheduled

Each Company shall gather data and report statistics regarding the number of service calls met on the same day requested, excluding when a customer misses a mutually-agreed upon time. Each Company shall report the percentage of scheduled service appointments met by Company personnel on the same day requested. Service appointment data shall be compiled and aggregated monthly. Reporting shall occur annually. The reports shall be submitted in accordance with Section IX below. Service Appointments Met As Scheduled shall be a performance measure subject to a revenue penalty.

C. On-Cycle Meter Readings

Each Company shall gather data and report statistics for the percentage of meters that are actually read by the Company, monthly. Each Company shall report the percentage of customer meters actually read on a monthly basis. Eligible meters include both residential and commercial accounts. Meter reading data shall be compiled and aggregated monthly. Reporting shall occur annually. The reports shall be submitted in accordance with Section IX below. On-cycle Meter Reading shall be a performance

measure subject to a revenue penalty.

III. CUSTOMER SATISFACTION MEASURES

A. Consumer Division Cases

Customer complaints shall be categorized as a Consumer Division Case where a written record is opened by the Consumer Division using the following criteria:

(1) the individual making the Complaint provides his or her identity to the Consumer Division and is either a (a) current, prospective, or former customer of the Company against which the Complaint has been lodged Company, or (b) designee of the current, prospective, or former customer of the Company;

(2) the individual or his/her designee has contacted the Company from which the customer receives distribution service prior to lodging a Complaint with the Department;

(3) the Department's investigator cannot resolve the Complaint without contacting the Company to obtain more information;

(4) the matter involves an issue or issues over which the Department typically exercises jurisdiction; and

(5) the matter involves an issue or issues over which the Company has control.

Consumer complaint data and billing adjustment data shall be employed as service quality measures. The Department will compile and aggregate monthly the frequency of Consumer complaints. The Department also will compile and aggregate monthly the dollar amounts of Billing Adjustments. The Department will report data on both of these measures annually. The Department will offer company-specific meetings to discuss each Company's performance annually. Revenue penalties shall apply to each of these measures.

B. Billing Adjustments

The Department will compile and aggregate monthly the dollar amount of residential Billing Adjustments per 1,000 residential customers. The Department will provide such data to each Company on an annual basis. Upon request of the Company, the Department may conduct a company-specific meeting to discuss the Company's performance.

C. Consumer Surveys

Each Company shall provide the results of two surveys to the Department on an annual basis: (1) a customer satisfaction survey of a statistically representative sample of residential customers; and (2) a survey of customers randomly selected from those customers who have contacted the Company's customer service department within the year in which service is being measured. The representative sample shall be newly drawn from customers contacting the Company's customer service area in the year previous and shall be conducted with a sample of respondents who are *redialed* after having concluded a contact with the Company's customer service area. The surveys, if conducted internally, shall be pre-approved by the Department regarding the method and customer questions.
For the residential customer satisfaction survey, the following question shall be used: "Using a scale where 1 = very dissatisfied and 7 = very satisfied; how satisfied are you with the service you are receiving from Company name?"

For the customer-specific survey, the following question shall be employed: "Using a scale where 1 = very dissatisfied and 7 = very satisfied; how satisfied were you with the service you received from the customer service department of Company Name?"

Each Company shall report the results of these surveys to the Department on an annual basis as specified in Section IX and shall include the results from the previous years of the survey up to a maximum of ten years. No benchmarks shall be calculated for these survey measures, because no revenue penalty mechanism has been assigned to these measures.

IV. STAFFING LEVEL BENCHMARK

Staffing benchmarks will be established on a company-specific basis and will be determined by the then-effective collective bargaining agreement for each Company.

V. ASSUMPTIONS FOR CALCULATING ELECTRIC RELIABILITY MEASURES

For the purpose of calculating SAIDI, SAIFI, and CAIDI, the following assumptions and criteria are to be used in accumulating outage data for standardizing reliability measurements:

A. Customer Equipment Outages shall be excluded from the calculation of SAIDI, SAIFI, and CAIDI;

B. Planned outages shall be excluded from the calculation of SAIDI, SAIFI, and CAIDI;

C. Excludable Major Events shall be excluded from the calculation of SAIDI, SAIFI, and CAIDI;

D. Momentary Outages shall be excluded from the calculation of SAIDI, SAIFI, and CAIDI;

E. The beginning of an outage shall be recorded at the earlier of an automatic alarm or the first report of no power;

F. The end of an outage shall be recorded at that point that power to customers is restored;

G. Outages involving a primary distribution circuit shall be included in the calculation of SAIDI, SAIFI, and CAIDI. Outages that do not involve a primary distribution circuit (i.e., secondary, line transformer only or service only) shall not be included in the standardized indices.

H. Where only part of a circuit experiences an outage, the number of customers affected shall be estimated, unless an actual count is available. When power is partially restored, the number of customers restored also shall be estimated.

I. When customers lose power as a result of the process of restoring power (such as from switching operations and fault isolation), the duration of these additional outages shall be included, but the additional number of interruptions shall not be included in the calculation.

VI. RELIABILITY AND SAFETY PERFORMANCE MEASURES

A. Electric Reliability

Each electric distribution company shall measure SAIDI and SAIFI on an annual basis in accordance with Section V and compare its performance following the implementation of the PBR Plan to a benchmark established by Section I.C. SAIDI and SAIFI shall be performance measures subject to a revenue penalty in Section VII. Notwithstanding these provisions, to the extent that an electric distribution company measures SAIDI and SAIFI in a manner inconsistent with the method in Section V, such Company may measure SAIDI and SAIFI consistent with its historic method; however, a Company that chooses to use its own historic method shall:

(1) demonstrate why it cannot reasonably convert the data to the method in Section V,

(2) calculate the historic average for benchmarking using its same historic method for purposes of Section VII, and
(3) in addition to reporting SAIDI and SAIFI using its own historic method, report all SAIDI and SAIFI data consistent with the method in Section V. These data will not be used in the calculations of revenue penalties in Section VII.

B. Response to Odor Calls

Each gas distribution Company shall respond to 95 percent of all Class I and Class II odor calls in one hour or less. Response to Odor Calls shall be a performance measure subject to a revenue penalty in Section VII.

C. Lost Work Time Accident Rate

Each Company shall measure annually its Lost Work Time Accident Rate. The Lost Work Time Accident Rate shall be a performance measure subject to a revenue penalty in Section VII.

VII. REVENUE PENALTIES AND PENALTY OFFSETS

A. Applicability

The revenue penalty for the performance measures set forth in above in Sections II, III, and VI, except for Section VI.B, shall be determined in accordance with the penalty formula in Section VII.B. If a Company's annual performance for a performance measure falls within or is equal to one standard deviation from the benchmark, no revenue penalty nor penalty offset shall be imposed for that measure. If a Company's annual performance for a measure exceeds one standard deviation up to two standard deviations (to the closest tenth of a decimal point) above the benchmark, it will be subject to the revenue penalty shown in Section VII. B.

If a Company's annual performance for a performance measure exceeds two standard deviations above the benchmark in any year, then the Department will open a formal investigation as to the reasons for the Company's poor performance.

Penalty offsets are calculated in a similar fashion to revenue penalties. If a Company's annual performance for a performance measure falls within or is equal to one standard deviation below the benchmark, no revenue offset is achieved. If a Company's annual performance is below one standard deviation (to the closest tenth of a decimal point) below the benchmark, it will earn a penalty offset. If the Company falls below two standard deviations in performance, the penalty offset is capped at the level associated with two standard deviations.

Penalty offsets may only be used to offset revenue penalties. Penalty offsets have no value other than to offset revenue penalties. Penalty offsets may be carried over from year to year. Penalty offsets will expire at the conclusion of any gas and electric distribution companies' service quality plan. Penalty offsets acquired on any performance measure may be used to offset revenue penalties on any other performance measure.

The revenue penalty for Section VI.B shall be determined in accordance with the penalty formula in Section VII.C. If a Company's annual performance for this measure equals or falls below 91 percent, then the Department will open a formal investigation as to the reasons for the Company's poor performance.

B. Penalty and Penalty offset Formulas

The revenue penalty formula for all performance measures (except for the measure in Section VI. B) shall be:

$$\text{Penalty}_M = [0.25*\left(\frac{\text{Observed Result - Historical Average Result}}{\text{Standard Deviation}}\right)^2]* \text{ Maximum Penalty}$$

If: $\left(\text{Observed Result - Historical Average Result}\right)$ is a positive value.

The offset penalty formula for all performance measures (except for the measure in Section VI. B) shall be:

$$\text{Offset}_M = [0.25*\left(\frac{\text{Observed Result - Historical Average Result}}{\text{Standard Deviation}}\right)^2]* \text{ Maximum Offset}$$

If: $\left(\text{Observed Result - Historical Average Result}\right)$ is a negative value.

Where:

Penalty_M = revenue penalty applied to performance measure M;

Offset_M = penalty offset applied to performance measure M;

Observed Result = the average actual performance measure achieved in year_y, rounded to the applicable decimal place as specified for each measure in Section VIII. A;

Historical Average Result = the average historical actual result, based on an arithmetic average of the previous $\text{years}_{a..x}$ of historic data, rounded to the applicable decimal place as specified for each benchmark in Section VIII. C;

Standard Deviation = standard deviation of the historical average result; and

Maximum Penalty = $(\text{PCL}_M)*(\text{AR}*0.02)$

Maximum Offset = $(\text{PCL}_M)*(\text{AR}*0.02)$

Where:

PCL_M = Performance category liability for the measure expressed as a percentage (derived from Section VII. D); and

AR = Annual Transmission and Distribution Revenues of a Company for the applicable year.

C. Penalty Formula for Class I and Class II Odor Calls

The revenue penalty formula for the performance measure set forth in Section VI. B shall be:

Class I and II Odor Call Penalty = Penalty Factor*Maximum Penalty

Where:

Penalty Factor is derived from Table PF, below:

Table PF

Penalty Factor	Calculation
.25	when PP-OR = 1 percent
.50	when PP-OR = 2 percent
.75	when PP-OR = 3 percent
1.00	when PP-OR = 4 percent or more

Where:

PP = 95 percent Fixed Target Benchmark

OR = Observed percentage of Class I and Class II Odor Calls actually responded to within 60 minutes achieved in $year_y$, rounded to the nearest percentage point; and

Maximum Penalty = (PCL)*(AR*0.02)

Where:

PCL = Performance category liability for the Class I & II Odor Calls measure expressed as a percentage (derived from Section VII. D); and

AR = Annual Transmission and Distribution Revenues of a Company for the applicable year.

D. Apportionment of Penalty Among Performance Measures

Revenue penalties shall be apportioned among the various performance measures as follows:

Safety and Reliability	
SAIDI	22.5 percent (electric distribution companies only)
SAIFI	22.5 percent (electric distribution companies only)
Class I & II Odor Calls	45.0 percent (gas distribution companies only)
Lost Work-Time Accident Rate	10.0 percent
Customer Service and Billing	
Telephone Answering Rate	12.5 percent
Service Appointments Met	12.5 percent
On-Cycle Meter Readings	10.0 percent
Consumer Division Statistics	
Consumer Division Cases	5.0 percent
Billing Adjustments	5.0 percent

VIII. REPORTING REQUIREMENTS

A. Reliability, Line Loss, and Safety Indices and Rates

Each Company shall report on an annual basis SAIDI, SAIFI, CAIDI, Lost Work Time Accident Rate, Electric Distribution Line Loss, Unaccounted-for Gas, Restricted Work Day Rate, and damage to company property, and percentage of all Class I and Class II odor calls responded in one hour or less. These reports shall be submitted in accordance with Section IX below.

CAIDI and SAIDI shall be reported in terms of minutes and shall be measured and reported to the nearest 100^{th} of a minute. SAIFI shall be reported to the nearest 1000^{th} of a reported outage. The Lost Work Time Accident Rate shall be reported to the nearest 100^{th} of an accident. Restricted Work Day Rate shall be reported to the nearest 100^{th} of a case. Electric Distribution Line Loss shall be reported to the nearest 10^{th} of a

percentage point. Unaccounted-for Gas shall be reported to the nearest 100th of a percentage point. The Consumer and Billing Measures shall be reported to the nearest 10th of a percentage point. The Class I and Class II odor calls shall be reported to the nearest percentage point.

For the annual reports on electric distribution line loss, each electric distribution company shall provide sufficient substantiation of:

(1) its Electric Distribution Line Loss value,
(2) the accompanying adjustments that were made to standardize the value to specific reference conditions, and
(3) the specific reference conditions.

For the annual reports on damage to company property, each electric distribution company shall file annually property damage reports on incidents involving property damage of the Company in excess of $50,000 per incident that is attributed to Company-owned facilities. A report shall be submitted within 48 hours of the incident and shall include the same information as that submitted for accidents as described in this Section VIII. I.

B. Past Reliability and Safety Performance Data

Each electric distribution company shall report the Lost Work Time Accident Rate data from the past ten years in the same fashion as in Section VIII.A. Each electric distribution company shall report SAIDI and SAIFI data from the past ten years in the same fashion as in Section VIII.A. Each electric distribution company shall use its best efforts to standardize SAIDI and SAIFI historical data (consistent with the method in Section V). The SAIDI, SAIFI, and Lost Work Time Accident Rate data shall be provided in each company's first annual report submitted in accordance with Section IX below. Each company's first annual report should describe limitations in data that affect standardization of SAIDI and SAIFI, and provide its best estimate of the statistical error inherent in the standardized indices.

C. Benchmarks

Each Company shall provide the supporting calculations that were used in determining the standard and benchmark values. SAIDI shall be reported in terms of minutes and shall be measured and reported to the nearest 100th of a minute. SAIFI shall be reported to the nearest 1000th of a reported outage. The Lost Work Time Accident Rate shall be reported to the nearest 100th of an accident. The Consumer and Billing standards shall be reported to the nearest 10th of a percentage point. The reports shall be submitted in accordance with Section IX below.

Each Company shall report on an annual basis the Lost Work Time Accident Rate and the Consumer and Billing performance standards and benchmarks that were determined in accordance with Sections II and VI, above. Each electric distribution Company shall report on an annual basis the SAIDI and SAIFI performance standards and benchmarks that were determined in accordance with Section VI, above.

D. Annual Major Outage Events

Each electric distribution company shall identify and report on an annual basis the outages that are considered Excludable Major Events. For each major event excludable under the standard above (or excluded using a company's historic method), each electric distribution shall report the total number of customers affected, the service area affected, the number of customers without service at periodic intervals, the time frame of longest customer interruption, and the number of crews used to restore service on a per shift basis. In addition, the report shall include the particular electric distribution company's policy on tree trimming, including its tree trimming cycle, inspection procedures, and typical minimum vegetation clearance requirement from electric lines. These reports shall be submitted in accordance with Section IX, below.

E. Capital Expenditure Information

Each Company shall report on an annual basis the capital investment approved and capital investment completed in the company's transmission and distribution infrastructure to ensure delivery of reliable electricity and gas. This report shall include a list of its major capital investment projects that relate to maintain transmission and distribution reliability and a summary description of each project. The summary shall include a list and location of each transmission and distribution facility that was modified, upgraded, replaced, and/or constructed as well as the costs and scope of work involved in the facility modification, upgrade, replacement, and/or construction.

Each Company shall report the same capital expenditure data from the ten most recent years in the same fashion as in the previous paragraph. The data shall be provided in each company's first annual report.

The reports shall be submitted in accordance with Section IX below.

F. Spare Component and Acquisition Inventory Policy and Practice

Each Company shall report on an annual basis its policy for identifying, acquiring, and stocking critical spare components for its distribution and transmission system. Each Company's first annual report shall address how this policy has changed or evolved over the past 10 years. The reports shall be submitted in accordance with Section IX

below.

G. Poor Performing Circuits

Each Company shall identify and report on an annual basis its poor performing circuits. The report on these poor performing circuits shall include the following information:

(1) the feeder or circuit identification number;
(2) the feeder or circuit location;
(3) the reason(s) why the circuits performed poorly during the reporting year;
(4) the number of years that the circuit(s) performed poorly;
(5) the steps that are being considered and/or have been implemented to improve the reliability of these circuits; and
(6) the SAIDI or SAIFI value for the specific circuit(s).

The reports shall be submitted in accordance with Section IX below.

H. Electric Service Outages

Each electric distribution company shall continue to report the distribution and transmission outages consistent with the Department's Outage and Accident Reporting Procedures. These standards supersede previous Outage and Accident Reporting Procedures.

Each electric distribution company shall report every distribution and transmission outage that occurs within or impacts its service territory. Each electric distribution company shall report to the Department, within a one-hour period from the beginning of the outage, every outage that results in 5,000 or more customer outage hours or that results in a service interruption to a high-profile customer. (These reports shall be revised to reflect updated information about the outage.) All other outages shall be reported to the Department within a 24-hour period from the beginning of the outage.

These reports shall include the following information:

(1) date of the outage;
(2) location of the outage (by providing town and street(s) location);
(3) nature or cause of the outage;
(4) number of customers affected;
(5) time outage commenced and time service was/will be restored;
(6) duration of the outage;
(7) number of customer outage hours;

(8) feeder or circuit number;
(9) district or division where outage occurred;
(10) identification of overhead or underground line where fault or outage occurred;
(11) the name and telephone number of a utility employee who may be contacted about the outage;
(12) approximate number of crew(s) involved in the power restoration; and
(13) whether the outage is considered an Excludable Major Event.

These reports shall be submitted in accordance with Section X below.

I. Other Safety Performance Measures

In compliance with the requirements of G.L. c. 164, § 95, each Company shall report within a 24-hour period of an accident the following information:

(1) time and date of incident;
(2) time and date of the notice to the Department;
(3) location of the incident;
(4) a detailed description of the accident including information about fatalities, injuries, facilities and third-party property damage; and
(5) the name and telephone number of a utility employee who may be contacted about the accident.

These standards supercede previous Outage and Accident Reporting Procedures.

These reports shall be submitted in accordance with Section X.

IX. SUBMITTING ANNUAL REPORTS TO THE DEPARTMENT

The annual reports described previously shall be submitted to the Department by March 1 of each year reflecting the data from the previous year(s) and shall be submitted in the following manner:

A. the original to Secretary, Department of Telecommunications and Energy, One South Station, Boston, Massachusetts 02110;

B. one copy to the Electric Power Division Director, Department of Telecommunications and Energy, One South Station, Boston, Massachusetts 02110;

C. one copy to the Rates and Revenues Division Director, Department of Telecommunications and Energy, One South Station, Boston, Massachusetts, 02110;

D. one copy of the report to the Consumer Division Director, Department of Telecommunications and Energy, One South Station, Boston Massachusetts 02110; and

E. an electronic copy of the report to the Department, by one of two means: (1) by e-mail attachment to dte.efiling@state.ma.us; or (2) on a 3.5" floppy diskette, IBM-compatible format to the Director of Electric Power Division, Department of Telecommunications and Energy, One South Station, Boston Massachusetts 02110. The text of the e-mail or the diskette label must specify: (1) an easily identifiable case caption; (2) docket number; (3) name of the person or Company submitting the filing, and (4) a brief descriptive title of document (e.g., comments or petition to intervene). The electronic filing should also include the name, title and phone number of a person to contact in the event of questions about the filing. Text responses should be written in either Word Perfect (naming the document with a ".wpd" suffix) or in Microsoft Word, (naming the document with a ".doc" suffix). Data or spreadsheet responses should be compatible with Microsoft Excel.

X. SUBMITTING OUTAGE AND OTHER SAFETY PERFORMANCE MEASURE REPORTS TO THE DEPARTMENT

The reports required by these standards shall be submitted to the Department in the following manner:

A. on-line through a Department-secured website. If website access is unavailable, then an electronic copy of the report shall be submitted to the Department, by using one of the following methods: (1) by e-mail attachment to dte.efiling@state.ma.us; or (2) on a 3.5" floppy diskette, IBM-compatible format, to the Director of Electric Power Division, Department of Telecommunications and Energy, One South Station, Boston Massachusetts 02110. The text of the e-mail or the diskette label must specify: (1) an easily identifiable case caption; (2) docket number; (3) name of the person or Company submitting the filing, and (4) a brief descriptive title of document (e.g., comments or petition to intervene). The electronic filing should also include the

name, title and phone number of a person to contact in the event of questions about the filing. Text responses should be written in either Word Perfect (naming the document with a ".wpd" suffix) or in Microsoft Word, (naming the document with a ".doc" suffix). Data or spreadsheet responses should be compatible with Microsoft Excel; and,

B. one copy of the report submitted to the Consumer Division Director, Department of Telecommunications and Energy, One South Station, Boston Massachusetts 02110.

For electric service outages that are required to be reported within a one-hour period as described in Section VIII.H, each Company shall, in addition to submitting a written report, contact by telephone the Electric Power Division Director, Consumer Division Director, Executive Director, or one of the commissioners of the Department to convey the information surrounding the outage.

XI. BILLING INFORMATION

Each Company is directed to submit language, for approval by the Department, to be placed on the back side of customer bills, which notifies customers of (a) their ability to contact the Department regarding service quality complaints or questions, and (b) the Department's website address (www.magnet.state.ma.us/dpu).

XII. GENERAL RESERVATION

The Department retains the discretion to waive or depart from any provision of these guidelines as the interests of fairness may require.