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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

DIRECT TESTIMONY OF

MALCOLM W. JACOBSON

ON BEHALF OF
ENRON POWER MARKETING INC.

DOCKET NO. R-00973954
RE: PP&L RESTRUCTURING PLAN

PROTHONOTARY'S OFFICE

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JULY 2, 1997

1 Q. PLEASE STATE YOUR NAME AND TITLE.

2 A. My name is Malcolm W. Jacobson. I am the Director of Government Affairs for Enron
3 Corp., where my primary role is to coordinate Enron's commercial and regulatory
4 strategies as competition in retail electricity markets unfolds.

5 Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF YOUR EDUCATIONAL AND
6 BUSINESS BACKGROUND.

7
8 A. I graduated from Texas A&M University with a degree in Petroleum Engineering and
9 received an MBA from the University of Houston.

10 Prior to joining Enron's Government Affairs group, I helped forge product
11 strategy for Enron Energy Services -- the newly formed retail arm of Enron. In that role,
12 I managed Enron's successful effort in New Hampshire last year where Enron is now
13 flowing power to residential and commercial consumers under a pilot program in that
14 state. I was also instrumental in launching Enron Emerging Technologies -- from which
15 Enron's solar and wind businesses were born. In addition, I served as Director of
16 Corporate Planning, where I was involved with charting Enron's course toward becoming
17 the first "natural gas major."

18 I have approximately 15 years experience in the energy industry in various
19 capacities -- from drilling rig roughneck to market economist. Early in my career, I
20 served as an engineer for The Coastal Corporation. During the late 1980's and early
21 1990's, I played a key role in managing the transition to competition in the natural gas
22 industry for Transcontinental Gas Pipeline. I have also consulted to a number of U.S.
23 and global energy companies on analyzing markets and developing competitive
24 commercial strategies.

1 Q. HAVE YOU TESTIFIED PREVIOUSLY IN ANY PROCEEDING?

2 A. No.

3 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

4 A. I will discuss the potential for competition in the "non-wire" or "revenue cycle"
5 metering, billing and information services areas, the importance of unbundling, and the
6 benefits to consumers and the economy of Pennsylvania arising from meaningful retail
7 access.

8 Q. CAN YOU PLEASE SUMMARIZE YOUR CONCLUSIONS?

9 A. As Dr. Mayo testifies in Enron Statement No. 2, the provision of non-wire services is not
10 a natural monopoly. I contend, therefore, that non-wire services can, and should, be
11 provided competitively. Consumers should be allowed to choose their provider of
12 metering, meter-reading, billing and information services through open market
13 competition for each of these unbundled elements of electricity service. The potential
14 gains from real direct access to consumers and the economy as a whole are enormous.

15 Further, "open architecture" communication systems can and should be used to
16 facilitate competitive provision of non-wire services. Such systems allow the hardware,
17 software and data of multiple parties to interconnect and communicate with each other
18 seamlessly, thereby permitting the marketplace to operate with minimal switching
19 barriers, and at the same time providing complete protection for proprietary customer
20 data.

1 **Q. WHAT ARE NON-WIRE SERVICES?**

2 A. The term "non-wire services" specifically identifies the functions of providing a meter;
3 obtaining meter and usage data and distributing the information to consumers, utilities
4 and any other appropriate energy service providers; billing consumers for energy service
5 costs; and providing related information/communication services to consumers in
6 connection with their energy service. These are services that are distinct from the
7 provision of "wire" services (i.e. the transmission and distribution of electricity). They
8 are sometimes referred to as "revenue cycle services."

9 **Q. WHY SHOULD THE COMMISSION REQUIRE PP&L TO OPEN THESE**
10 **SERVICES TO COMPETITION?**

11 A. Direct access and the benefits of generation supply competition will be immeasurably
12 enhanced by the unbundling and competitive provision of these services. The
13 Commission should promote competition in non-wire services because such competition
14 will lower the costs of these services to consumers and stimulate innovative responses to
15 customer specific requirements. Moreover, if the Commission were to attempt to
16 preserve PP&L's monopoly in metering and billing services, it would miss a dramatic
17 opportunity to foster the growth of a technology and information-based industry which
18 can bring substantial benefits to consumers.
19

20 **Q. IS IT IMPORTANT THAT UNBUNDLING TAKE PLACE IN THE**
21 **RESTRUCTURING PROCESS?**

22 A. Yes. Unbundling of non-wire services is important in the early stages of direct access
23 when pure generation pricing competition will be restricted by utility competitive
24 transition charges ("CTC") and intangible transition charges ("ITC") which, although
25

1 paid to PP&L, must be collected from all customers regardless of their selection of an
2 electric generation supplier. Making metering and other non-wire services subject to
3 competition will mean that Pennsylvania businesses and consumers will receive the
4 benefits of competition — lower prices, new and innovative products — in these service
5 areas, which will enhance the overall value of direct access. Accordingly, requiring
6 unbundling to allow competition in the non-wire service areas will allow efficient electric
7 generation suppliers to differentiate themselves from their competitors and attract
8 customers to their products based on comprehensive and innovative service offerings,
9 while at the same time offering real value and benefits to Pennsylvania's consumers.

10 **Q. ARE THERE ANALOGOUS EXPERIENCES ELSEWHERE THAT WOULD**
11 **TEND TO SUPPORT THE POLICY OF COMPETITION IN NON-WIRE**
12 **SERVICES?**

13
14 A. Yes. The California Public Utility Commission ("California Commission") unbundled
15 natural gas transportation and procurement in 1991. Unfortunately, it halted its
16 unbundling efforts for smaller customers at the point where those customers benefitted
17 only from competition for the commodity itself. The net result has been fewer
18 competitors and less value for these smaller customers. In response to gas price
19 competition from marketers, the gas utilities reduced their cost of gas to meet the
20 competitive marketplace. This left the competitive industry with extremely thin margins
21 and with no ability to create additional value for customers by providing better or less
22 expensive service in other areas, such as metering and billing. Consequently, while
23 nearly fifty marketers entered the market, only three survived fitfully at the end of 1996.
24 By shielding competitive markets within the protected utility monopoly, the California

1 Commission drastically diminished the opportunity for customers to reap the benefits that
2 should accompany new players entering a market. The California Commission now
3 recognizes this shortcoming, and as a result, is actually attempting to rectify the situation
4 through policy initiatives currently under way.

5 The restructuring of the electric utility industry provides an opportunity to
6 improve efficiency and reduce costs. If a competitive market is allowed to develop in the
7 electric services industry, the experience in other industries indicates that the price of
8 services (or the cost per transaction) will decrease, the quality of service will rise, and
9 more focused service providers will enter the market to compete. However, the
10 restructuring process must avoid the primary mistake made by the California
11 Commission in the deregulation of gas -- the failure to unbundle fully non-wire services.
12 To allow effective competition, there must be direct access on a level playing field, and
13 metering, billing and information services must be unbundled and provided
14 competitively. *In this way metering services and billing/customer accounts services can*
15 *be managed and provided by one or more full service electric suppliers or by other*
16 *companies which specialize in these services and have the flexibility to offer innovative*
17 *packages of unbundled services. In addition, unbundling places financial and*
18 *competitive risks on the service providers, not ratepayers, as is the case in the current*
19 *regulated monopoly model.*

1 I note that in restructuring the electric industry, the California Commission issued
2 its Opinion on the Unbundling of Revenue Cycle Services on May 6, 1997.¹ Here, the
3 California Commission did make the general policy decision to allow metering, billing
4 and customer services to be provided competitively as of January 1, 1998, except for the
5 smaller customers (20 kW or less) where the California Commission deferred the
6 initiation of competition until January 1, 1999.²

7 **Q. ISN'T COMPETITION IN THE GENERATION MARKETS SUFFICIENT?**

8 A. No. The introduction of competition in non-wire services will bring customers
9 substantial benefits that would not be obtained if competition is limited to the supply of
10 generation. The success of direct access will hinge on the ability of customers to be able
11 to choose among the service and product offerings of competitive suppliers, such as
12 Enron. Unless those suppliers provide these additional non-wire services, they will be
13 placed at a competitive disadvantage vis-a-vis PP&L, and that, correspondingly, will
14 severely limit consumer benefits. If new entrants are limited from bringing the full range
15 of potential competitive offerings to consumers, consumers will see fewer benefits and
16 the direct access market will be that much less competitive, that much less efficient, and

¹ Decision 97-05-039 at 8. The California Commission there stated:

There are long-run issues that might motivate this Commission to consider the merits of allowing energy suppliers to offer these services some time in the future. What prompts us to ask these questions now is a concern that direct access opportunities to residential and small commercial customers in 1998 might be severely limited if we fail to allow energy providers to provide these services and to offer their customers the resulting savings.

² Id. at pp. 16 and 17.

1 provide correspondingly less service innovation and cost savings to consumers. Again, I
2 highlight the experience of the gas industry in California, where competition was limited
3 to the "commodity," and consumers were denied the full benefits of competition. On the
4 other hand, permitting competition in all of the non-monopoly functions, including non-
5 wire services, will stimulate competitors to innovate and market lower-cost and more
6 efficient services to go along with the energy commodity, encouraging even more
7 entrants, and intensifying the competition which will ultimately benefit all Pennsylvania
8 electric consumers.

9 **Q. SHOULD THE COMMISSION MANDATE NEW, MORE SOPHISTICATED**
10 **METERS AS A PREREQUISITE TO DIRECT ACCESS AND COMPETITION IN**
11 **NON-WIRE SERVICES?**

12
13 A. No. Consumers differ in their needs, and a regulatory solution of "one size fits all" tends
14 to result in none fitting well. Residential consumers do not need or require the same type
15 of meter services as do, for example, large commercial customers. The installation of
16 real time meters ("RTM") should proceed as customers and the market dictate. Clearly,
17 system-wide installation is not required to commence direct access. Small commercial
18 and residential customers can be adequately served using load profiles and after-the-fact
19 settlement of energy charges. Large commercial and industrial customers, on the other
20 hand, will most likely choose highly individualized arrangements, which also argues
21 against system-wide installation of any single type of RTM. In addition, system-wide
22 installation by the utility carries with it the burden of huge costs for ratepayers. The
23 unbundling of non-wire services will allow value added services to offset some of the

1 installation cost of RTM units, bringing these services to more and more customers
2 without any utility expenditure.

3 **Q. COULDN'T COMPETITION DEVELOP IN NON-WIRE SERVICES WITH THE**
4 **UTILITIES' COSTS BUNDLED INTO A DISTRIBUTION RATE?**

5
6 A. No. As a practical matter, it is hard to see how competition could begin without the price
7 being unbundled, *i.e.* separately stated. From an emerging competitive market
8 perspective, if the Commission permits meter services to be bundled with PP&L's
9 distribution service, the Commission would actually limit access to the metering market
10 for new entrants because customers would have to pay twice for meter and metering
11 services and PP&L would gain an unfair competitive advantage. This is because the
12 utilities could retrofit the existing meter with their chosen version of new technology. On
13 the other hand, a competitor would be forced to construct a new Automated Meter
14 Reading ("AMR") gateway downstream of PP&L's meter, which requires entry to the
15 customer's home, perhaps modification or removal of portions of a wall or the movement
16 of the circuit breaker box. This construction would result in increasing costs as well as
17 delays, and aesthetic concerns for consumers. Finally, without unbundled metering
18 charges on the customer's bill, the customer would be forced to pay for the utility's
19 metering as part of the "bundled" delivery service rate. This is obviously unfair and not
20 consistent with my understanding of the goal of bringing competition to Pennsylvania's
21 electric services industry.

1 Q. WILL COMPETITION IN NON-WIRE SERVICES LEAD TO DUPLICATION
2 AND INCREASED COST?
3

4 A. No. Once unbundled, service providers will be able to decide who will provide these
5 services, so there is no duplication. The proliferation of cost reduction initiatives
6 frequently results from the restructuring of customer account services, including process
7 redesign, outsourcing, and offerings of new products and services. The existence of new
8 sources of value have changed system economics so as to encourage providers in other
9 industries to absorb up-front customer acquisition costs, with the result that products and
10 services are more widely available. Based on past experience with deregulated markets,
11 Enron expects that the unbundled market for billing and customer account services would
12 exhibit major cost reductions and value added enhancements by third party customer
13 service providers that focus upon one, or a few, services. Compare the experience of the
14 telecommunications industry where local exchange carriers reduced their own billing and
15 customer costs by 28% (Exhibit 4, MWJ-1). However, these same companies realized
16 that utilizing third party billing companies who could concentrate on the specifics of the
17 billing function could produce even larger savings, between 20% and 62% below their
18 initial expense levels (Exhibit 4, MWJ-2). As a result of competition and innovation in
19 these customer service areas, the consumer will have expanded choice and enjoy the
20 benefits of greater value at lower costs. Just as importantly, the consumer will be offered
21 new services which were not available even a short time prior to restructuring.

1 Q. WHAT KIND OF NEW SERVICES COULD BE PROVIDED?

2 A. There is a variety of new services which could be provided in metering, billing and
3 customer care functions, including appliance monitoring, latchkey services, toxic gas
4 detection, time-of-use pricing, and outage detection. Please refer to Exhibit 4, MWJ-3.

5 Q. CAN YOU PROVIDE AN EXPLANATION OF HOW SUCH A SYSTEM
6 WORKS?
7

8 A. Yes. Please refer to my Exhibit 4, MWJ-4.

9 Q. WHAT STEPS MUST THE COMMISSION TAKE TO ALLOW THE
10 TECHNICAL IMPLEMENTATION OF NON-WIRE SERVICES?
11

12 A. I urge the Commission to require that the utilities and all other suppliers who install
13 meter facilities employ an open system architecture. By this, I mean that all metering
14 devices can be interconnected with PP&L's system, and can be integrated with a
15 communications link to provide data readable to PP&L and to any other affected
16 supplier. Communications standards and protocols will develop, and will develop faster
17 once there is substantial competition. History teaches that the choice of standards by
18 regulatory decision-making is rarely the right answer.

19 The introduction of competition, however, requires that the Commission develop
20 additional standards with respect to meter reading, including minimum data elements,
21 timely data access, open architecture storage and communications, security and
22 enforcement procedures. These new standards should not dictate the use of specific
23 metering devices, communication protocols employed at the customer site, hardware,
24 software, ownership of meters, or other terms of commercial service agreements.
25 Finally, as the Commission institutes the unbundling of metering service, Enron would

1 recommend that a working group format is an appropriate venue to develop the additional
2 guidelines for implementation.

3 **Q. WHAT ABOUT METER SAFETY AND ACCURACY?**

4 A. The Commission should also ensure that existing standards approved by the Commission
5 should be used by PP&L and other suppliers for meter and meter reading safety,
6 accuracy, installation, and performance. Moreover, industry-wide standards for meter
7 safety, accuracy, installation, and performance exist today. Chief among these are those
8 standards contained in the National Electrical Code (NEC) and the C12 series of the
9 American National Standards Institute (ANSI).

10 **Q. HOW WILL EACH PARTY THAT NEEDS THE USAGE INFORMATION BE**
11 **ABLE TO OBTAIN THE DATA?**

12
13 A. Enron recommends that the efficient exchange of usage and billing information between
14 necessary parties will be accomplished through an information open access ("IOA")
15 system. The technology for implementing open access to metering and billing exists
16 today. Ultimately the implementation of open access will be an absolute necessity to
17 bringing the full benefits of competition to consumers. The Commission is familiar with
18 the concepts underlying IOA from the electronic interfaces between incumbent local
19 exchange carriers and competitive local exchange carriers which have been required in
20 implementing the Telecommunications Act of 1996 for the telecommunications industry.
21 As I describe in Exhibit 4, MWJ-5, IOA will operate in a manner similar to the electronic
22 interfaces presently being implemented in the telecommunications industry by allowing
23 both PP&L and the supplier access to the necessary information to provide
24 comprehensive, high quality service to customers.

1 **Q. CAN PENNSYLVANIA HAVE DIRECT ACCESS WITH EXISTING METERS?**

2
3 A. Yes. Some consumers may wish to take advantage of direct access without prior
4 installation of a time-of-use meter. This is likely to occur for residential and small
5 commercial consumers, especially at the beginning of retail competition. For small
6 customers, electric suppliers can readily use PP&L's load profiles. Customers will be
7 billed for actual power used, based upon the meter information read and transmitted by
8 PP&L (if PP&L continues to operate its own metering system) to the supplier. The load
9 forecasts will be compared and adjusted on a regular basis with the actual usage data to
10 account for any balances and to ensure accuracy. Appropriate load profiles can be
11 developed for various small customer types based on factors such as size, heating
12 equipment, etc. However, it is critical that the Commission require PP&L and other
13 utilities to provide demand profiles to suppliers which represent average usage patterns
14 for each customer class. These demand profiles must be updated on a regular basis.
15 Market participants may make an economic decision to install time-of-use metering
16 equipment at any later date. Critically, however, direct access would be available to
17 consumers without requiring new meters at the outset.

18 **Q. WHAT ARE THE SPECIFIC BENEFITS OF UNBUNDLED AND**
19 **COMPETITIVE METERING FOR RESIDENTIAL SERVICE?**

20
21 A. Metering is a prime example of how the introduction of competition into non-wire
22 services will not only stimulate the development of direct access but also provide new
23 innovative services and increased choices to consumers. Under the current system, the
24 utility, not the consumer, makes the choice as to what type of meter will be utilized to
25 measure service. Utilities have and continue to implement a "one size fits all" approach

1 to metering. Furthermore, the one size that fits all is typically a "dumb" meter, which is
2 read manually (with all the associated problems) and is incapable of measuring
3 consumption on a time-of-usage basis. In Enron's view, the fact that meter readers are
4 still utilized in the utility industry, given the technological advancements in metering
5 devices, is a perfect example of how monopoly regulation obstructs the introduction of
6 new, innovative technologies and promotes the continued utilization of technologies
7 which would otherwise be obsolete.

8 Meanwhile, AMR technology is not only feasible, but is available today in a
9 competitive meter market, and at a very competitive cost. New AMR technology is
10 being advertised at under \$100 per unit. Nevertheless, absent competitive pressures,
11 PP&L, and other utilities, simply have no business incentive to take advantage of
12 important technological developments in the metering area.

13 The introduction of innovative metering and metering services also will
14 significantly expand choice for Pennsylvania consumers. The stimulation of the market
15 caused by competition will undoubtedly provide consumers with the option to have their
16 generation supplier install and utilize remote-read, time-of-use meters. The use of these
17 meters will allow cost sensitive consumers to manage their demand for electricity to
18 times of the day or the year when electricity prices are at their lowest. Management of
19 demand to take advantage of off-peak prices will represent an important opportunity for
20 consumers to reduce their overall electric bills. The introduction of innovative metering
21 technology will directly result in new pricing options by electric generation suppliers
22 who recognize consumers' desires to achieve the lowest possible bill. Absent metering

1 competition, these and other dramatic developments and opportunities will not occur in a
2 timely manner and consumers will be denied many of the benefits of competition.

3 The introduction of competition will also increase efficiency and reduce metering
4 costs. It is very possible that competitive forces in the marketplace will dictate that
5 suppliers will install and provide remote-read, time-of-use meters at no initial cost to
6 consumers. At a bare minimum, competition will drastically reduce the costs of
7 installing and providing consumers with sophisticated meters — which by all accounts
8 are critical to the development of full competition — as compared to the costs incurred if
9 PP&L is either required or encouraged to install technologically advanced meters
10 throughout its service territory.

11 **Q. IF A COMPETITIVE SUPPLIER REPLACES A UTILITY METER WITH ONE**
12 **OF ITS OWN, WON'T THE CUSTOMER AND UTILITY BE AT RISK IF THE**
13 **SUPPLIER/CUSTOMER RELATIONSHIP ENDS AND THE SUPPLIER**
14 **REMOVES ITS METER, LEAVING THE CUSTOMER WITHOUT ANY**
15 **METER?**

16
17 A. Clearly, no customer should ever be without a meter. If a supplier replaces PP&L's
18 meter and later wants to remove its meter because the customer relationship has ended, it
19 is reasonable to require the supplier either to restore a utility meter for the customer or
20 leave the supplier's meter in place until a new electric supplier has been chosen by the
21 customer and arrangements made for a new meter to be installed. This would assure that
22 there is no break in the customer's ability to receive energy or in PP&L's ability to bill
23 for its services.

24 **Q. ARE YOU ADVOCATING A "SUPPLIER SINGLE BILL SYSTEM"?**

1 A. Yes, as an alternative for those customers who want it. As more fully described in
2 Mr. Bowen's testimony (Enron Statement No. 5), the supplier single billing option for
3 electrical energy service is both important to customers and achievable. Customers will
4 likely not embrace a system that generates different bills for electricity, transmission
5 services, and other unbundled services and functions. This requires that the consumer
6 have the power to choose which entity will conduct metering and billing services, and
7 that the supplier have the right to act as the consumer's agent for all other services.

8 **Q. WHAT BENEFITS WILL THIS PROVIDE?**

9 A. By having the ability to obtain all services from competitive providers, the customer's
10 choices -- and competition -- are maximized. The customer should have the right to
11 obtain, and the electricity supplier to provide or acquire as agent for the customer, all
12 services, including delivery services. This will enable the supplier to maximize value in
13 all areas; increase efficiencies; and insulate the EDC from risk of consumer nonpayment
14 by making the supplier responsible to remit to the EDC for the service used by the
15 consumer.

16 **Q. WHAT WOULD YOU RECOMMEND THAT THE COMMISSION DO TO**
17 **EXPEDITE THE INTRODUCTION OF COMPETITIVE NON-WIRE**
18 **SERVICES?**

19
20 A. The Commission should require PP&L to unbundle non-wire services and establish non-
21 discriminatory rules for their provision by suppliers in their Distribution Services tariff.

22 Paul Reising discusses these issues in his testimony (Enron Statement No. 3).

23 **Q. WHAT HAS PP&L PROPOSED WITH RESPECT TO UNBUNDLING NON-**
24 **WIRE SERVICES AND OPENING SUCH SERVICES TO COMPETITION?**
25

1 A. PP&L has taken the position that non-wire services should remain within the regulated
2 utility. (PP&L response to Interrogatory Enron III-6) Company witness, Mr. Bujnowski,
3 specifically states in his testimony that PP&L does not intend to permit other parties to
4 provide meters or meter reading services at the present time. (PP&L St. No. 15 at 5).
5 Mr. Bujnowski further stated that the company was not willing to permit other parties to
6 bill its customers for the services PP&L provides to them. (PP&L St. No. 15 at 5).
7 Based on these statements it is clear that PP&L does not intend to open non-wire services
8 to competition as I am recommending in my testimony. PP&L, however, has advocated
9 the spending of approximately \$38 million dollars over a two year period to build a new
10 "state-of-the-art" billing and information system, presumably to retain its monopoly in
11 the billing and collection area, and increase its revenues associated with the provision of
12 billing and information services. (PP&L St. 15 at 5, PP&L response to Enron
13 Interrogatory I-35).

14 **Q. WILL PP&L'S NEW BILLING/INFORMATION SERVICE PROVIDE THE IOA**
15 **SYSTEM YOU ENDORSED EARLIER IN YOUR TESTIMONY AS CRITICAL**
16 **TO MEANINGFUL COMPETITIVE DEVELOPMENT?**

17 A. No, it does not appear to me that it will. In response to Enron Interrogatory III-1, PP&L
18 indicated that its new system, when completed, will transmit "meter reading data to a
19 generation supplier providing billing services" through an "automated batch processing
20 interface." This interface would communicate customer account and meter reading data
21 directly into the supplier's billing system. Although investing in an automated interface
22 with suppliers is a step in the right direction, I am extremely concerned from review of
23 PP&L's testimony that what is intended by PP&L is a one-way interface subject to the

1 complete control of PP&L. Under such a system, it appears PP&L would control the
2 content and format of information its competitors receive and would establish itself as
3 communications "gatekeeper" for its competitors. This type of system appears to be a
4 proprietary system not the type of open network architecture system which is necessary
5 to enable full competitive development. In contrast to PP&L's apparent proposal, the
6 IOA system I endorse is a two-way system which permits both PP&L and a customer's
7 supplier equal access to the necessary customer information without sacrificing
8 proprietary concerns pertaining to dissemination of such information to third parties.

9 **Q. DO YOU WISH TO QUALIFY YOUR LAST ANSWER?**

10 A. Yes. My previous answer is based on the information available to me at the time of
11 preparation of this testimony. Because I do not yet have all of the information I need to
12 fully evaluate PP&L's proposal, the conclusions included in my last answer are very
13 tentative. I intend to continue to investigate PP&L's proposal as this restructuring
14 proceeding goes forward and may qualify or supplement my tentative conclusions at a
15 later date.

16 **Q. WHAT IS YOUR CONCLUSION?**

17 A. The Commission should order PP&L to unbundle non-wire services as part of its
18 restructuring plan, and develop non-discriminatory terms, conditions, and protections so
19 that suppliers can provide these services competitively. In addition, the Commission
20 should announce a policy in favor of open architecture for non-wire functions so that new
21 options for metering, billing and information services are not unnecessarily foreclosed
22 and that these policies shall apply to PP&L's proposed "state-of-the-art" information

1 system. Finally, the Commission should encourage workshops to discuss what standards
2 and protocols need to be identified to increase customer access to unbundled non-wire
3 services and to work out procedures for the sharing of meter data.

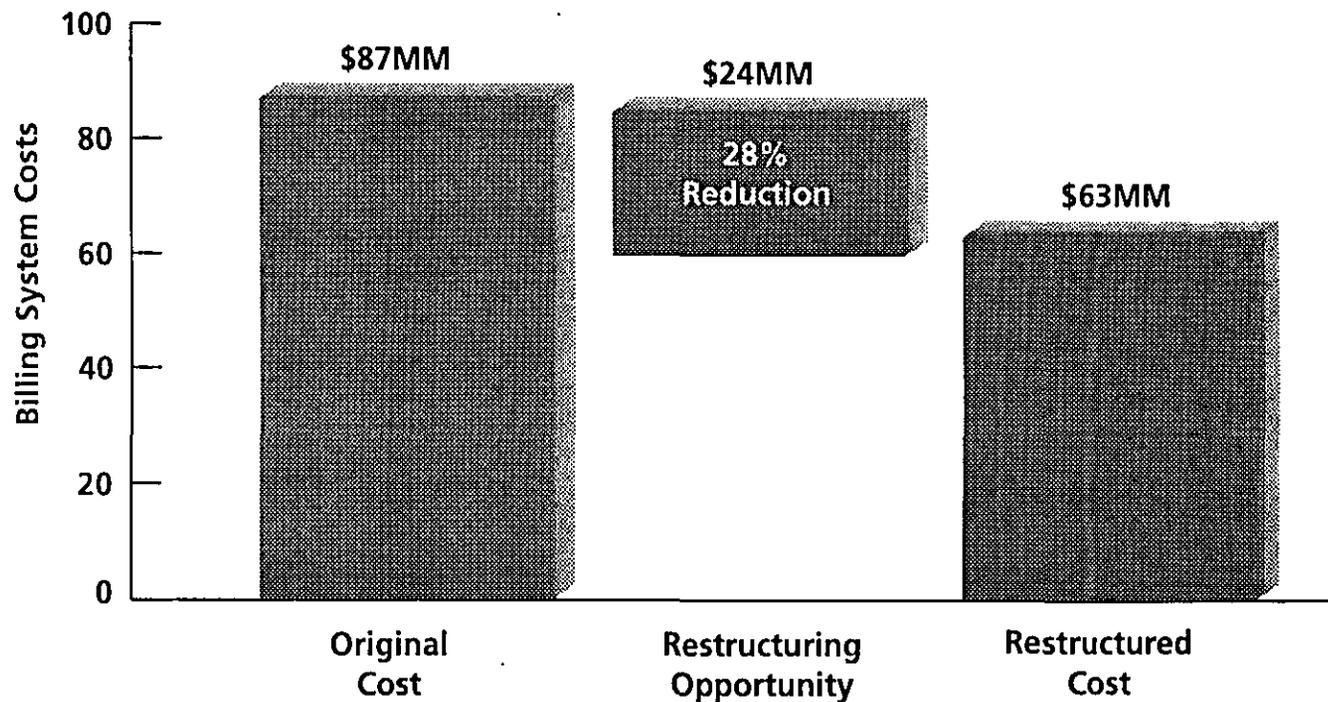
4 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

5 **A. Yes.**

Customer Account Services Billing System Opportunities (Representative Example)

Exhibit 4
MWJ-1

Competitive Prices have required local telephone companies to restructure their billing systems, resulting in lower costs



Source: Bain & Company, Inc.

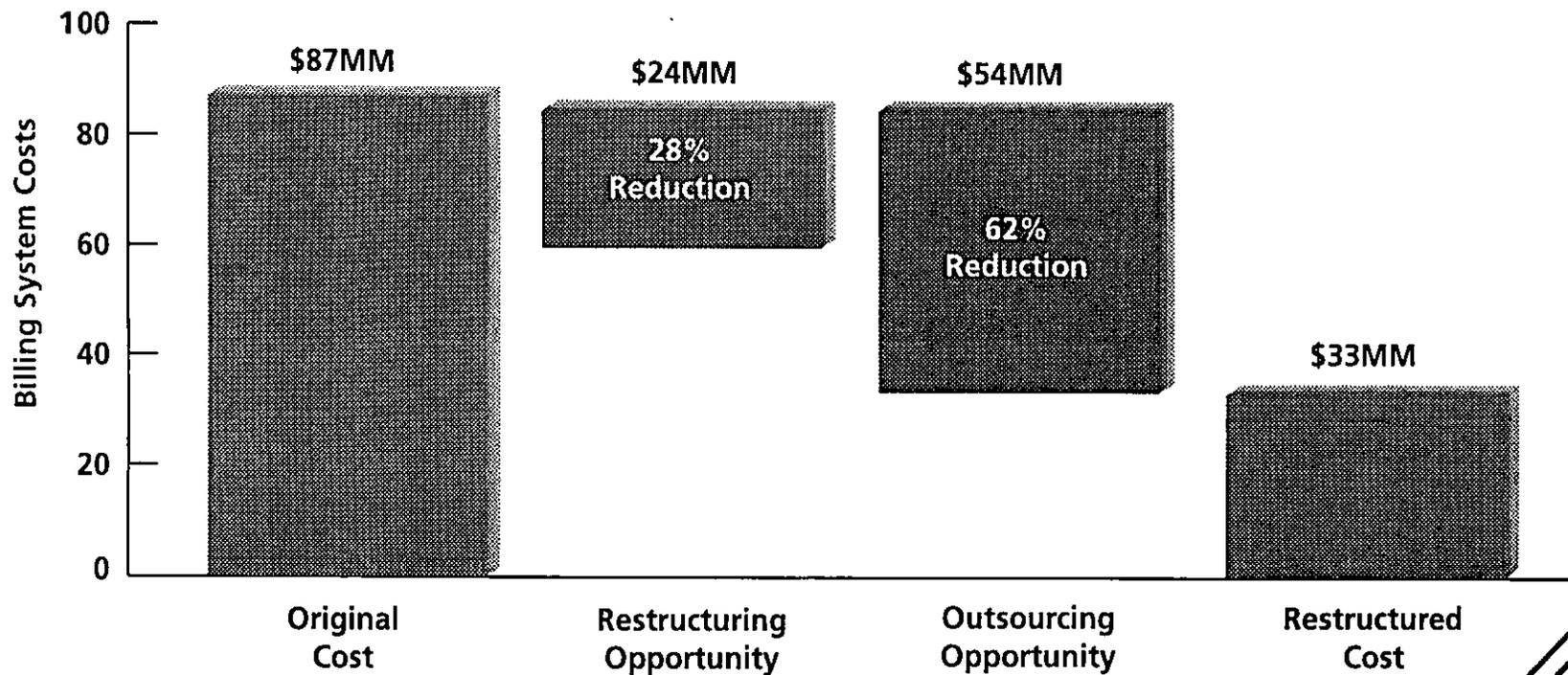
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Customer Account Services Third Party Billing Services (Representative Example)

Exhibit 4
MWJ-2

As local telephone companies began to assess the competitiveness of their billing operations, they realized that some third parties provide this service less expensively



Source: Bain & Company, Inc.

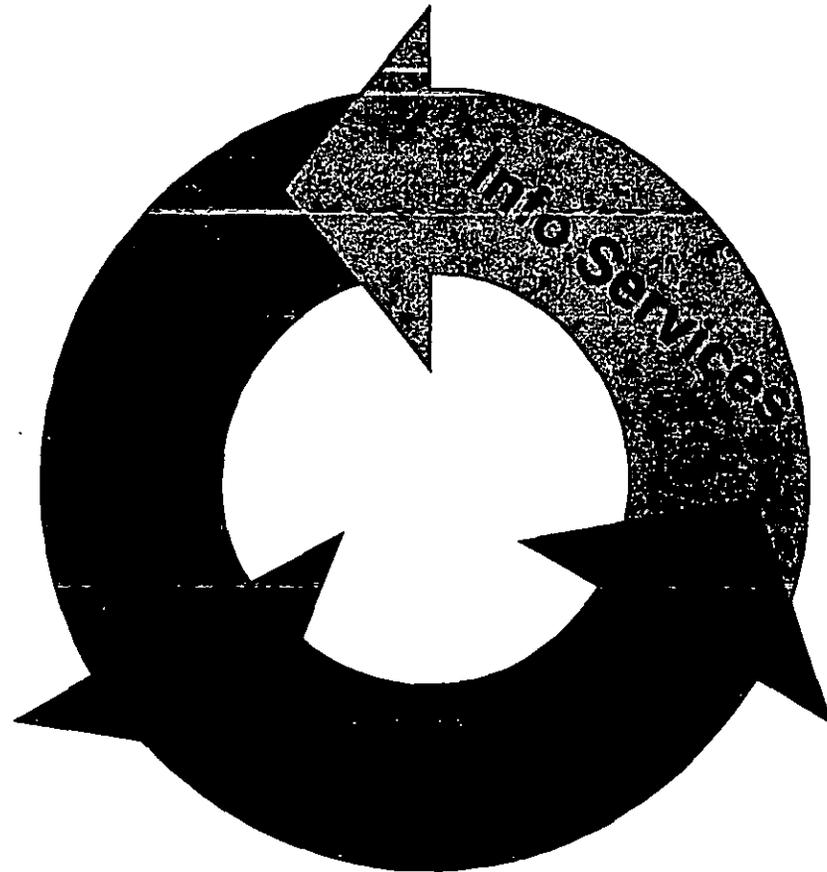
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Non-Wire Products & Services: "Endless Possibilities"



Real-time pricing
TOU pricing
Real-time budgeting
Load management
Outage detection



Telephony
Internet
Appliance monitoring
CATV
Security systems
Financial services
Latchkey monitoring
Toxic gas detection

Electronic billing
Itemized billing
Multi-product conjunctive
billing
Multi-site summary billing
Load allocation
Energy use analysis

NON-WIRE COMMUNICATIONS NETWORK CONCEPTUAL MODEL

GENERAL

The Non-Wire Businesses will need a communications network to share and exchange data. This network, although similar to the ISO network, must be a separate and distinct network, using open protocols with controlled access. This document highlights the approach for developing the Non-Wire Network.

In examining the need for open architecture standards for non-wire services, one should first look at the various types of data communications associated with metering. Three types of metering communications were identified and are addressed in this model. These communication areas are:

1. Between meter and devices within the premises
2. Between meter and meter reading company
3. Between meter reading company and meter data users (non-wire services companies)

COMMUNICATIONS BETWEEN THE METER AND CONTROL DEVICES WITHIN THE PREMISES

Providing services beyond the meter requires data communications between the meter and the device being Controlled or monitored. Traditionally, this is accomplished using power line carrier or radio within the home or plant. Although there is no universally accepted open architecture for in-home communications, the two major data communication protocols in this market are Echelon Lonworks and CEBus. These protocols have been evaluated by various entities and each has unique benefits. The Electric Power Research Institute (EPRI) is planning to include metering and metering systems in their Utility Communications Architecture (UCA) standards. Accordingly, UCA could become another major alternative protocol in the market.

Provided the communication architecture and Protocols are open,¹ Enron believes the market should determine which, if any, of these protocols is adopted as a standard.

¹ Open architecture is used throughout this document to mean a design for a data network that fulfils the objective of allowing any user to communicate with any other user, regardless of the types of computer systems and devices in use. Such a system requires standard conventions to be used throughout the network, including the communications aspects and the processing aspects that take place in computer applications.

COMMUNICATIONS BETWEEN THE METER AND THE METER READING COMPANY

There are no recognized industry standards for open architecture communication between Meters and an automated meter reading system. There are open protocols available for each type of system (e.g., PCS, satellite, phone, radio, broadband), but no single standard exists. Enron believes there is minimal value in developing one open standard for this application and recommends that each meter reading company be allowed to use the communications infrastructure of its choice so long as the architecture and protocols are open.

COMMUNICATION BETWEEN THE METER READING COMPANY AND METER DATA USERS

As a first step in understanding the process necessary to support the data flow of meter data, one should identify the potential users of meter data. When looking at the diversity of meter data users, it becomes clear that the essential data processing issue is not the underlying AMR technology, but rather how the data will be made accessible to all users of the data. In addition to the meter reading company who serves the data collection function, other potential meter data users who require timely, direct access to individual customer meter data are the:

- Billing Company - the entity charged with producing the end-user billing requires the energy usage data
- Distribution Company - the Disco requires meter data for planning and maintaining the distribution system
- Customer Care Company - the customer service entity needs the data for customer inquiry and billing analysis
- Load Aggregator/ESP - the aggregator and energy service provider need the data for ISO energy scheduling and settlement purposes
- Others - regulators or new value added business entities may require access to the data

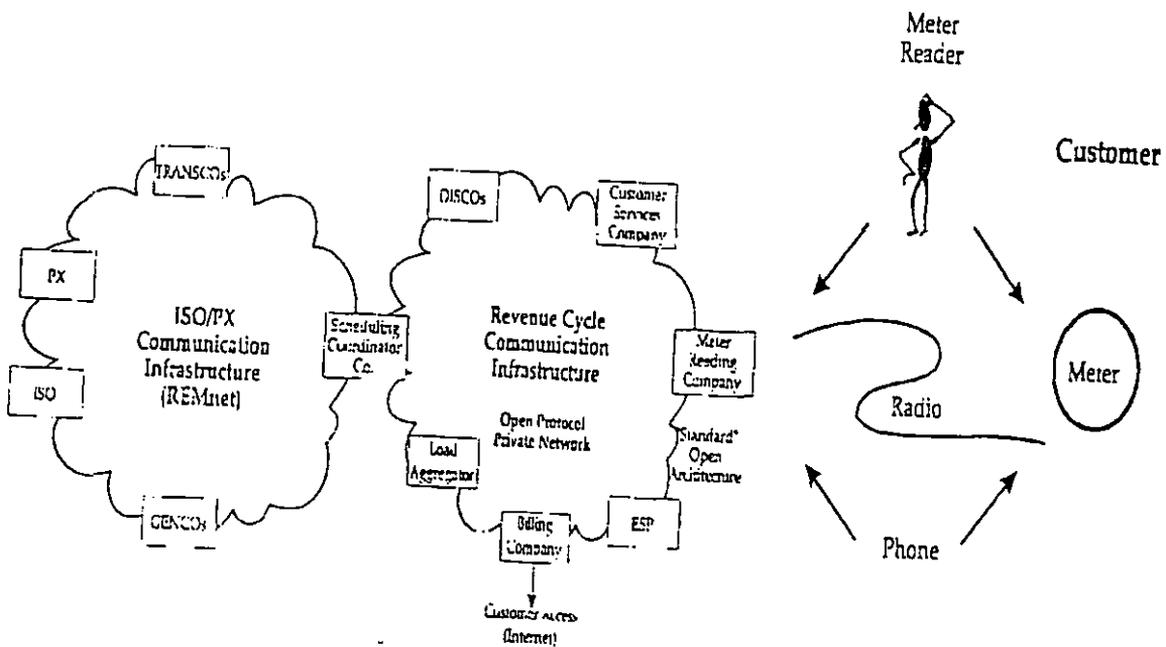
While in some cases all of these functions may be performed by a single company, it is recognized that open competition requires that the proposed standards must support the situation where separate and independent companies could perform each of the functions.

Enron recommends that each meter reading company be required to maintain a real-time database that is accessible to all interested parties. This approach means that information would be distributed and shared across many (potentially hundreds) independent but interconnected databases. Satisfying this requirement means that a data communications infrastructure is necessary so that

meter data may flow between the meter reading company who collects the data and the various users of the data.²

The conceptual model of a Non-Wire Data Communications infrastructure is illustrated in Figure 1. Under this model, multiple companies can obtain metering information as long as they share the information on the network. The customer service, customer information, and billing companies will be able to obtain the information from the meter reading company in the same manner. By creating the Non-Wire Data Communications Infrastructure, total unbundling and open competition is enabled in the Non-Wire services.

Figure 1
Conceptual Model for Non-Wire Meter Data Communications



² Issues of confidentiality of data and the process for determining authorization of access to data are not addressed in this conceptual model, however it is recognized that these issues must be addressed as the design for a non-wire data communications infrastructure is carried forward.

The proposed model calls for storage of meter data in two locations. First, it will be the responsibility of the meter reading company to maintain the data on their local server. At the frequency that the meter data is collected, the meter reading company's data processing system shall send (push) the data to those users who have requested the specific meter data. This automatic data push approach will help reduce the number of network transactions and will provide for timely user access to the data. Meter reading companies must also support on-demand requests for specific data for up to 90 days from the date of collection.

Another recipient and storage area of the meter reading company data shall be a centralized non-wire data warehouse. This data warehouse will be used as a collection point for meter data. The data warehouse will function as a centralized clearinghouse for non-wire data, however the warehouse will not be updated as frequently as the meter reading companies pushed data. That is, users requiring current hourly data for operational purposes will use the meter reading companies data while users requiring previous day's hourly data for settlement or billing purposes can use the warehouse. The warehouse will provide for the long-term storage and archival of non-wire data. The means for establishing such a large-scale data processing enterprise as the non-wire data warehouse has not yet been defined.

Benefits of the Conceptual Model

Some of the benefits of this flexible non-wire data communications model are:

- It is independent of the data collection method
- It allows any qualified entity to use the information to support its business operations
- It provides for timely access to data for operational needs while also providing centralized long-term retrieval and archival capabilities
- It allows and will survive growth and advancements in technology, both in metering systems and in information technology
- It uses technologies that are proven and have been used before for similar data access requirements
- It is modeled after and operates similar to the ISO model

INFORMATION TECHNOLOGY CHARACTERISTICS OF THE METER DATA FLOW MODEL

Success of this distributed architecture approach is contingent upon two important technological concepts: (1) a universal reading database structure, and (2) a high-speed data communications infrastructure.

Universal Data Exchange Definition

The exchange of meter data between the various business entities will require development of a standard transaction-oriented end-use metering application protocol. The application protocol effectively creates a common definition of transactions for querying remote data and the format for the exchange of the reading data. This definition of the data exchange format should be independent of such factors as the type of metering device used, the meter reading data collection method employed, vendor specific billing system characteristics, and supplier specific data storage formats. We suggest that it be the responsibility of the meter reading company to perform any data conversions necessary for translating the native reading data collection format into the universal exchange data format. It also would be the meter reading company's responsibility to provide the data processing system(s) necessary to support the on-line storage, maintenance, and accessibility of these data.

A preliminary definition of the minimum metering data that is to be collected and distributed has been developed. The type of metering device will greatly influence the type and frequency of data that is collected, therefore the following is intended to establish a minimum data set and is not intended to place any limitations upon additional data that entities may wish to collect. Data collection information has been categorized into four general data types; these are (1) aggregated residential hourly load data, (2) individual residential consumption data, (3) Commercial/industrial usage and power quality, and (4) service status data.

AGGREGATED RESIDENTIAL LOAD

Non-Wire Services companies will be operating in conjunction with Schedule Coordination companies to provide hourly load forecasting and scheduling of energy generation and delivery. In order to perform these functions efficiently, actual hourly energy consumption information must be available as a verification of the accuracy of the load forecast. Without the feedback of actual load versus forecasted load, energy imbalances between the Schedule Coordinators and the ISO could easily reach unacceptable levels. Transmitting each individual residential hourly meter reading to the Schedule Coordinators places all unreasonable burden upon the non-wire data communication infrastructure. Therefore, to facilitate the operational needs for Schedule Coordinators, the meter reading company must aggregate the available hourly residential consumption data for each Non-Wire Services company for whom the meter reading company is providing service. The meter reading company will then transmit ("push") the aggregated load information to the associated Non-Wire Services company. The preliminary definition of the minimum set of aggregation data to be sent is:

1. Transmitting company identifier - This is a unique identifier assigned to the meter reading company who collected the data and initiated the transmission.
2. Receiving Company identifier - This is the unique identifier, assigned to the Non-Wire Services company, who is receiving the aggregated load data.
3. Service area identifier - This is a unique identifier which defines the service area (i.e., UDC or transmission tie point) associated with the reported load.
4. Reading date and hour - This is the date and hour associated with the reported load.
5. Aggregated load - This is the aggregated energy consumption for the specified hour.

It is anticipated that the aggregated residential load data, whether estimated or actual, will be made available each hour. However, the specific sequences and schedule of hourly events necessary to support the ISO scheduling protocol has not been defined.

RESIDENTIAL USAGE DATA DEFINITION

To facilitate the open exchange of residential meter data, the meter reading company must collect and make available on a periodic basis the following data items:

1. Service Point Identifier - The service point identifier is a value that uniquely locates each physical meter. A service point identifier would be associated with the physical premises and therefore would remain consistent throughout the life of the premise. The service point identifier would remain constant regardless of the number of times that meter reading companies, service providers, meters, or customers change at the premise. A standard for developing a universally unique service point identifier needs to be established.
2. Reading date and time - This is the date and time at which the meter reading was taken. Another important data issue is the establishment of a standard time zone for reporting usage data. It is recommended that a standard time reference be defined for use throughout the non-wire cycle. Enron recommends adopting Greenwich Mean Time (GMT) as a nationwide standard for all meter readings. Using GMT would eliminate time zone and daylight savings time issues. Any responsibility for convertible usage data into local time for billing or other uses will be the responsibility of the entity using the data.
3. Interval data (kWh) - This is the usage readings recorded in the meter at specified intervals.
4. Recording Interval - This is the time interval (i.e., 15, 30 or 60 minutes) at which the interval data is being recorded.
5. Type of service - Various meter types have different types of built-in metering services. This is a code identifying the type of service being reported.
6. AEP meter identifier - This is a unique identifier for each meter. It is recommended that the AEP format be adopted. This format includes codes to identify the following:
 - Utility originally holding, title to the meter
 - Meter vendor
 - Meter model

- Meter serial number assigned by the meter vendor
 - Customer specified user-defined value
7. Reading status - Each reading will be tagged with a status. This status may indicate such items as whether the data is an initial read, a re-read, or has been validated.

Residential meter reading data shall be transmitted to the non-wire data warehouse on a daily basis.

COMMERCIAL/INDUSTRIAL DATA DEFINITION

For the commercial and industrial customers the minimum meter data exchange includes all residential customer data items. In addition, we recommend meter readings for commercial and industrial Customers also include:

1. Kilovai--hours
2. Kilovoltamp-hours
3. Ampere-square-hours
4. Volts-squared-hours

Commercial/industrial consumption data shall be transmitted to the associated non-wire services company and die non-wire data warehouse on an hourly basis.

Many industrial customers may demand additional power quality metering services such as voltage and harmonics. We view these additional meter items as value added services that will be offered as competitive incentives by the various service providers. Therefore, power quality and other specific industrial metering items are not recommended as part of the minimum standard.

DEMAND DATA DEFINITION

Demand data (i.e., kilowatts, kilovars, kilovoltamps, etc.) are not included in the required minimum data set. While these types of data will be of importance to non-wire cycle services, this information can be derived from the usage data.

SERVICES STATUS DATA DEFINITION

Some metering devices are capable of reporting status changes. These status reports generally are initiated by some event and therefore are not appropriate for periodic reporting. When applicable, the meter-reading company shall provide meter data for status changes, such as:

- Outage — service interruption or restoration

- Tamper — device tampering detection
- Power quality — quality threshold detection

The preliminary definition of data to be reported for status reports includes:

1. Service point identifier
2. AEP meter identifier
3. Date and time of status report
4. Service status

Standards for identifying the various types of statuses and their associated data items have yet to be developed.

High-Speed Data Communications Infrastructure

Enron strongly supports the idea of establishing a private data communications network to be shared by all companies in the Non-Wire Industry. This network would allow for the real-time exchange of data between any authorized entities. Initially, hourly usage information would be the most common type of data being transmitted, however other types of data would also be available. MCI is in the process of establishing a similar network (REMnet) for use by the Independent Service Operator (ISO), Power Exchange (PX), Generation Companies (Genco's), and Schedule Coordinators. Although a gateway between the two networks is certainly feasible, our suggestion is that a separate network be established to support the open access of Non-Wire information. Communication bandwidth permitting, we suggest the two networks lie as similar as possible,

This network and a common set of open protocols would be designed to support the transmission of standard utility industry transactions. Knowing the appropriate network transaction protocol, an entity could, for example, examine a specific customer's hourly consumption information without necessarily knowing where the customer's meter information is physically located.

Some of the general design concepts anticipated for this type of network are as follows:

NETWORK SOFTWARE

The non-wire network should include software that supports data communications within the non-wire network configuration and that supports communications with the external ISO network to which the non-wire services network is connected. Network software for communications, security, services, and management should be provided.

NETWORK COMMUNICATIONS

Users and processors should be able to communicate with the non-wire network of local and remote workstations, processors, and peripheral devices. The non-wire network design should provide a common communications network, using TCP/IP. The software should link dissimilar hardware

nodes from multiple suppliers, including terminals, workstation, and processors, into a common data communications network allowing communications among these devices.

NETWORK SECURITY

The non-wire network should allow access by authorized non-wire network users at local and remote workstations, and/or PCs. Network security features should be provided which control user access to the network. A user authentication scheme requiring at least a user identification and password should be provided to confirm the user's authorization before the user may request a connection to any network node. Access to the management and administration functions of network devices (such as bridges or routers) should be further protected by a similar authentication scheme.

NETWORK SERVICES

Network services should be provided for non-wire services users. The network management software should provide monitoring and routing control for the users of these services. Network services should include:

1. Network file management and transfer
2. Network printing management
3. Remote procedure call
4. Remote terminal session
5. Network time synchronization
6. Network backup
7. Electronic mail (X.400, or SMTP)

Network software should include the client node software that provides client connections to the non-wire network. Client software should be provided for each type of network node connection required by the vendor's system configuration, The network security software shall control access to these services.

NETWORK MANAGEMENT

The non-wire network should interface with a standard network management system that encompasses security management, accounting management, configuration management, fault management, and performance management. The underlying management protocol for the network should be SNMP running over TCP/IP. All non-wire network resources should be SNMP

compliant. The non-wire service provider may provide SNMP proxy agent software for those resources that are not typically SNMP compliant.

NON-WIRE NETWORKING ISSUES

Concerns relating to the communication infrastructure that must be addressed include:

1. Feasibility and alternatives for establishing tile communications infrastructure within the time frame required for use by January 1, 1998.
2. Developing adequate bandwidth to accommodate the data volume in a timely manner.
3. Defining authorization requirements and certification procedures for gaining access or revoking access to the network.
4. Addressing data confidentiality issues.
5. Creating application standards for transactions performed on the network.

SUMMARY OF RECOMMENDATIONS

The following summarizes the recommendations set forth in this document:

1. Provided the communication architecture and protocols are open, Enron recommends the competitive market place be allowed to determine which, if any, of the meter-to-device protocols is adopted as a standard.
2. Each meter reading company should be allowed to use the communications infrastructure of its choice to collect meter reading data so long as the architecture and protocols are open.
3. Each meter reading-company should be required to maintain a real-time database of meter reading data that is accessible via on-line data communications to all authorized parties.
4. A statewide data communications infrastructure should be created so that meter data may flow between the meter reading company who collects the data and the various non-wire entities who need the data.
5. The meter reading company should maintain the meter reading data on their local server.

6. A data warehouse should be used as a collection point for meter data and to function as a centralized clearinghouse for non-wire data.
7. A standard definition for the minimum meter reading data for each major type of service must be established.
8. We recommend that a task force be established to develop the technical specifications required for creating the non-wire communications infrastructure.

METERING AND BILLING CYCLE

As happens under the current regulatory regime, the first step in the billing cycle will be to read the meter. The entity providing meter reading services (either the Electric Generation Supplier ["EGS"] or the incumbent utility) will read the customer's meter. If an EGS reads the meter, it could transmit the meter data to the utility. This can be done by a variety of means: electronic data interface (EDI), by tape, phone line, etc. In retail pilots occurring in New England, meter read information is transmitted through a secure electronic mailbox. The information transmitted monthly will include the customer account number, date of last and current meter read, and kWh used. Historical customer usage information will have been transmitted when the customer switches energy providers.

With the meter read date, the EGS will generate a bill for the customer's entire electric service, including distribution, transmission, energy and other charges. This is an important vehicle for the EGS to add value to the customer in terms of information, opportunities to buy other products, and so on. In addition, cost savings and efficiencies will be created. The utility will send one invoice — to the EGS — instead of tens of thousands to individual customers. An EGS may bundle its energy services with billing for other products, provide electronic billing and payment options, and offer other ways to reduce paper and simplify customers' bill-paying activities.

The EGS will have an established customer relationship with the utility, defined by a contract. The utility, consistent with rules being developed by the Commission, may require deposits, a line of credit or other financial tools to assure payment from an EGS. Thus,

the utility will replace payment processing, collection, and write-offs from thousands of customers with one secure transaction. The EGS could pay the utility for distribution, transmission, etc., if relevant. The utility will have one secure account receivable and receive one wire transfer or check based on the Commission's credit standards. The EGS also will remit any taxes, regulatory fees, or other required collections from customers to relevant agencies. Again, this is a standard transaction that can be performed by any entity that is billing customers; it is not a monopoly function. Indeed, each and every one of the billing functions described herein can be efficiently performed by non-utility providers, frequently at lower costs.

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

SURREBUTTAL TESTIMONY OF

MALCOLM JACOBSON

ON BEHALF OF
ENRON POWER MARKETING INC.

DOCKET NO. R-00973954
RE: PP&L RESTRUCTURING

AUGUST 15, 1997

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P.A.P.U.C.
PROTHONOTARY'S OFFICE

1 Q. PLEASE STATE YOUR NAME AND TITLE.

2
3 A. My name is Malcolm W. Jacobson. I am the Director of Government Affairs for
4 Enron Corp., where my primary role is to coordinate Enron's commercial and
5 regulatory strategies as competition in retail electricity markets unfold.

6 Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

7
8 A. I will respond to the comments of William Schmitt on behalf of the International
9 Brotherhood of Electrical Workers ("IBEW") regarding competition in the "Non-Wire"
10 or "Revenue Cycle" metering, billing and information service areas.

11 Q. WHAT IS MR. SCHMITT'S POSITION REGARDING THE UNBUNDLING OF
12 BILLING AND METER SERVICES?

13
14 A. He believes that such unbundling should not be done at this time.

15 Q. WHAT IS THE BASIS FOR HIS CONTENTION?

16 A. He implies that unbundling and competitive entry into these service areas is contrary to
17 Pennsylvania's Act and claims that it could inhibit direct access and threaten customer
18 service and safety.

19 Q. DO YOU AGREE WITH MR. SCHMITT'S ARGUMENTS?

20 A. No.

21 Q. WITH RESPECT TO THE FIRST POINT, RELATING TO THE
22 COMPETITION ACT, DO YOU BELIEVE MR. SCHMITT'S SUGGESTION IS
23 CORRECT?

24
25 A. That is obviously a legal question, for the Commission and the courts to answer;
26 however, it is my understanding that the Commission has ruled that such unbundling
27 and competitive entry is legally permissible. On July 11, 1997, the Commission issued

1 its Final Order on Guidelines for Maintaining Customer Services at the Same Level.¹¹

2 In this "Customer Services Order," the Commission recognized the right to unbundle
3 and competitively provide the billing and supplier complaint functions under the
4 Competition Act. The Commission stated:¹²

5 [W]e simply disagree with the conclusions . . . that
6 only EDCs can provide these customer service
7 functions. We submit that there is nothing in the
8 Act that would prohibit the supplier single bill
9 option and supplier complaint handling. Although §
10 2807(C) recognizes that the EDC "may be"
11 responsible for the billing of all electric services,
12 there is nothing in this passive provision or
13 anywhere else in the Act that makes the EDCs the
14 exclusive providers of these customer service
15 functions.

16
17 We believe that the Act's reference to the EDC's
18 responsibility to provide customer service functions
19 under § 2807(D) is intended to maintain the status
20 quo and is merely a reflection that the EDC must
21 stand ready to provide these customer service
22 functions. However, concerning the two specific
23 customer service functions at issue; namely, billing
24 and complaint resolution, we do not read this
25 provision or any other provision of the Act as
26 excluding suppliers from providing these functions.
27 In fact, we believe this interpretation is consistent
28 with the declared policy of the Act to create a
29 competitive market for the generation of electricity.
30

¹ Final Order re: Guidelines for Maintaining Customer Services at the Same Level of Quality Pursuant to 66 Pa. C.S. § 2807(D), and Assuring Conformance with 52 Pa. Code Chapter 56 Pursuant to 66 Pa. C.S. § 2809(E) and (F), Docket No. M-00960890F.0011 (Order entered July 11, 1997).

² Id. at 10-11.

1 The Commission did not implement this guideline immediately but retained it as an
2 option to be explored in the context of the restructuring filing of each utility. For the
3 reasons set forth in my direct testimony, I continue to believe that it is in the interest
4 of consumers to implement this option.

5 **Q. WHAT POSITION HAS THE COMMISSION TAKEN REGARDING**
6 **METERING AND METER-READING?**
7

8 A. The Commission reviewed the provision regarding meter reading under § 2807(D) of
9 the Competition Act in its recent Customer Services Order and has at this time
10 required that all "physical activity" relating to metering be performed by the EDC.³
11 This matter is being further considered at the Commission's metering docket.⁴ The
12 Commission's Customer Services Order would appear to allow a competitive supplier
13 to act as the customer's agent to purchase the meter and then read the meter, if it can
14 be done nonphysically, so long as the meter is physically installed by the EDC.⁵ That
15 Order specifically states that restructuring plans "should allow for the option of
16 customer choice of meter;" and that while the Commission's current policy requires the
17 EDC to perform physical meter reading even for those customers who elect generation
18 suppliers, "nonphysical meter reading" could be performed by other entities, which
19 would include the competitive supplier. Reading this provision in conjunction with the
20 Commission's ruling on the unbundling of the billing and supplier complaint handling
21 functions, there is, in my opinion, no rational or logical distinction among these

3 Id. at 22-23, 26.

4 Docket No. M-00960890F.0009.

5 Customer Services Order at 22-23.

1 functions which would preclude the unbundling and competitive entry into metering
2 and metering functions. The same rationale which allows the unbundling of billing
3 will allow the unbundling of metering. Thus, while the Commission's final resolution
4 of metering has not yet been issued, there is no basis for Mr. Schmitt's suggestion that
5 unbundling metering and nonphysical meter reading is contrary to the Competition
6 Act.

7 **Q. DO YOU AGREE WITH MR. SCHMITT'S SUGGESTION THAT**
8 **DEREGULATING BILLING AND METERING SERVICES WILL INHIBIT**
9 **DIRECT ACCESS?**

10
11 A. No. Mr. Schmitt simply claims that having the EDC provide the billing meter will
12 provide customers more flexibility in their choice of suppliers and eliminate any
13 possibility that customers will be tied to a long-term arrangement with a supplier by
14 virtue of the fact that the supplier installs the billing meter. However, that same
15 argument applies with even greater force to PP&L because PP&L is the incumbent.
16 Therefore, if Mr. Schmitt's hypothesis is correct, PP&L's own continued furnishing of
17 the meter would make it difficult for consumers to exercise their choice to leave PP&L
18 to change suppliers. Such a result would thwart the whole purpose of the Competition
19 Act to promote competition and choice. The obvious answer to this "problem" is that
20 the mere fact that a meter is installed by a certain supplier does not mean that the
21 customer will not be able to switch from that supplier. Indeed, similar to what is
22 taking place in the cellular phone business (where switching is common), in view of
23 the increasingly lower prices of meters, it is possible that a supplier will give the meter
24 free to a customer or that one competitor will pay the cost, if any, of removing another

1 competitor's meter. In any event, the competitive market will sort out the details
2 under which switching will be enabled and implemented. There may be attendant
3 problems, (which can be solved) but not allowing competition is not the solution.
4 That will not only prevent the market from solving those problems, it will deprive
5 consumers of added value.

6 **Q. MR. SCHMITT'S MAIN POINT IS THAT INSTALLING METERS MUST BE**
7 **DONE BY TRAINED PERSONNEL WHO WORK FOR PP&L. IS HE**
8 **CORRECT?**

9
10 A. First, I would note that the current PUC view is that the EDC would continue to be
11 responsible for meter installation and physical reading so these concerns would not even
12 arise. But if the EDC did provide all such services, Mr. Schmitt is only correct on his
13 first contention but not on his second. Clearly, meter installation and repair need to be
14 conducted by properly trained personnel. The contention that only employees who work
15 for an EDC are capable of being so trained is obviously not supportable. Mr. Schmitt's
16 concerns can and should be addressed by having the Commission establish minimum
17 qualifications and training for installation personnel and to require EGS services to meet
18 the same service standards as the EDC.

19 There is no reason why EGS personnel cannot perform the meter and billing
20 related services with at the same level of competence and safety as customers presently
21 enjoy. In fact, if history is any guide, a competitive market would enhance the service
22 provided. Indeed, in the years before the break-up of AT&T, AT&T used to argue that
23 only equipment that it owned and controlled could safely be installed and maintained on
24 the network only by Bell System employees and that competition would result in all

1 types of service inadequacies.. We can now look back and acknowledge that those
2 concerns were invalid. Indeed, most of us take for granted how much more selection we
3 have in the purchase of phone equipment, how much more convenient it is to have a
4 phone installed and how phone equipment has improved through innovation.

5 The same type of concerns were raised in the early days of ATMs. Yet today,
6 the various participants in that industry have so arranged among themselves that an
7 individual with a card can obtain funds virtually anywhere in the world for little or no
8 charge. Concerns about customer confidentiality and accuracy have virtually
9 disappeared. I see no reason why the participants in the competitive metering and billing
10 business could not similarly work those details out with the assistance of the regulator —
11 in this case the Pennsylvania Public Utility Commission. I believe that the methodology
12 used by the Commission through task forces, working groups and generic docket
13 proceedings will enable all of the problems arising in the transition to a competitive
14 environment for metering and billing to be resolved. One must note that the same types
15 of concerns were raised — and rejected — as reasons to hold up unbundling by the
16 California PUC. Obviously, if those concerns can be overcome in California national
17 standards and protocols will soon be available to make the transition here smooth.

18 More important, we are dealing with an act that fosters competition. There is no
19 reason for the Commission to forego the opportunity to foster competition in this regard
20 at this time. Mr. Schmitt wishes to forego additional competition by raising all types of
21 problems and concerns. These are all resolvable and require only an order to unbundle
22 and work out the details.

1 Q. DO YOU HAVE ANY FINAL COMMENT?

2 A. Yes. Many of Mr. Schmitt's arguments arise from his failure to confront the competitive
3 offering of non-wire services in the marketplace. I categorically do not accept the
4 argument that consumers are incapable of making intelligent decisions and that a
5 regulated utility is in the best position to make "one-size-fits-all" decisions for them.
6 Overall, my proposal gives consumers more choices; Mr. Schmitt's proposal takes
7 choices away. At Enron, we are confident that we can provide value to consumers --
8 either through lower costs and/or enhanced services. If we can't, Enron is the only one
9 that loses.

10 Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

11 A. Yes.

12

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

DIRECT TESTIMONY OF

RAYMOND W. BOWEN, JR.

ON BEHALF OF
ENRON POWER MARKETING INC.

DOCKET NO. R-00973954
RE: PP&L RESTRUCTURING PLAN

JULY 2, 1997

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PROTHONOTARY'S OFFICE

1 **Q. PLEASE STATE YOUR NAME AND TITLE?**

2 A. My name is Raymond M. Bowen, Jr. I am Vice President of Enron Energy
3 Services, Consumer Services Group, and am responsible for Enron's retail sales
4 activities with residential consumers.

5 **Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF YOUR EDUCATIONAL
6 AND BUSINESS BACKGROUND?**

7
8 A. I have a Masters of Business Administration from Rice University and a Bachelor
9 of Science in Mechanical Engineering from the University of Texas. I joined
10 Enron Energy Services in February of 1996. Prior to that time, I was vice
11 president and senior banker in Citicorp's Petroleum, Metals and Mining
12 Department based in Houston. At Citibank, I was responsible for managing
13 several of the major energy relationships of the bank. I joined Citibank in 1991
14 from Bankers Trust Company where I managed major corporate relationships in
15 the energy industry.

16 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

17 A. I will present Enron's testimony and respond to PP&L's testimony pertaining to
18 the following issues:

- 19 (1) The unbundling of billing and bill format that PP&L should be
20 required to implement as part of its restructuring.
- 21 (2) The billing options that should be permitted, including the "Supplier
22 Complete Bill Option."

- 1 (3) Procedures governing the phase-in of competition.
- 2 (4) Customer selection and "slamming."
- 3 (5) "Customer Information" and its relationship to the "Customer
- 4 Education Program" required in connection with PP&L's proposed
- 5 restructuring.
- 6 (6) PP&L's Universal Service Program in a competitive environment.
- 7 (7) Several miscellaneous issues.

8 **I. BILLING**

9 **Q. WHAT IS ENRON'S CONCERN REGARDING BILLING?**

10 A. Billing is a critical component in the development of a truly competitive retail

11 electric market. It is my understanding that the Electricity Generation Customer

12 Choice and Competition Act ("Competition Act") expressly gives consumers the

13 choice as to whether they want to be billed by their incumbent monopoly or by

14 their electric generation supplier. The fact that the General Assembly expressly

15 mandated customer choice for billing evidences support for a policy that

16 recognizes that competition in the billing area can provide significant benefits to

17 consumers, and that suppliers should be permitted to attract customers through

18 their billing services as well as with other products and services.

19 **Q. HOW DOES BILLING PLAY A ROLE IN COMPETITION?**

20 A. Enron takes pride in its billing and customer service activities, and intends to

21 provide Pennsylvania customers with the highest quality billing services possible.

1 Obviously, the customer's understanding of his or her bill is an important
2 component of the service quality issue. If a customer does not understand a
3 utility's or supplier's electric bill, the customer will seek a competitive option
4 which provides a more understandable bill.

5 Accordingly, providing an understandable bill that meets all of the
6 customer's needs is an important part of attracting customers to Enron's services.
7 It is equally important that Enron's customers understand the nature of the
8 products they are purchasing and the prices they are paying. If consumers do not
9 or cannot understand their charges, they will likely stay with their incumbent
10 provider.

11 **Q. SHOULD THE COMMISSION REQUIRE THAT BILLS BE BROKEN**
12 **DOWN OR UNBUNDLED IN ANY SPECIFIC WAY?**

13
14 A. Yes. It is my understanding that electric distribution companies are required to
15 unbundle customer bills to the extent necessary to permit customers to determine
16 what service and service functions they are paying for, and at what rate. This
17 aspect of billing and customer information is extremely important. It is Enron's
18 view that unbundling or itemizing the charges on the distribution company's bill is
19 one of the primary focal points of the competitive environment.

20 In order to provide consumers with adequate information to determine the
21 basis for all of the various charges included in the distribution company's bill, the
22 bill itself must be unbundled beyond the basic categories of distribution,

1 transmission ("Delivery" as used by PP&L) and generation that PP&L proposes.
2 Proper unbundling requires a utility such as PP&L to itemize charges for non-wire
3 services like billing and collection, metering and other customer services, as well
4 as for PP&L's Intangible Transition Charges ("ITC"), Competitive Transition
5 Charge ("CTC") and Universal Service Surcharge, so that consumers can fully
6 understand what they are paying for and evaluate their various competitive
7 options. Paul Reising discusses this concept and the specific amounts which are
8 appropriately assessed for each component of the delivery charge in greater detail
9 in his testimony (Enron St. 3.0).

10 **Q. ARE THERE OTHER REASONS WHY BILLING AND COLLECTION**
11 **CHARGES AND OTHER NON-WIRE SERVICE CHARGES SHOULD BE**
12 **UNBUNDLED?**

13
14 **A.** Billing and collection are themselves competitive functions that a generation
15 supplier should have the option of providing. In order to do so, however, it is first
16 necessary that PP&L be required to separate and unbundle its billing and collection
17 functions as part of its restructuring. Otherwise, customers would be required to
18 pay for the utility's billing and collection activities even though they choose to
19 receive billing services from their supplier. Furthermore, absent bill unbundling,
20 consumers will be unaware of what amount they are presently paying the utility for
21 the billing and collection function, and will have no basis of comparison for
22 competitive billing options offered by suppliers. This would clearly frustrate the
23 development of a competitive market.

1
2 **Q. IS UNBUNDLING THE COST OF BILLING AS WELL AS OTHER NON-**
3 **WIRE SERVICES AN IMPORTANT COMPONENT OF COMPETITION?**

4
5 A. Yes. Unbundling the cost of providing all non-wire services, like billing and
6 collection, metering, and consumer services, which support not only distribution
7 but also transmission and generation, and transferring responsibility for their
8 development and delivery from the monopoly to the marketplace is crucial to the
9 success of retail restructuring. Because these types of services represent such a
10 large proportion of small consumers' monthly bills, competitive suppliers may be
11 unable to market effectively to these small customers without comprehensive
12 unbundling. Given adequate protections for service reliability and assurances that
13 the alternative supplier will adhere to all consumer protection requirements (an
14 assurance which Enron, for one, is committed to providing), the Commission
15 should recognize the need for competition in these service categories when market
16 participants, like Enron, stand ready, willing and able to offer these services.

17 The benefits of competitive choice clearly extend beyond generation
18 services in their strictest form, and include many non-wire services. Instead of
19 looking for competitive *exceptions* to the monopoly "rule," the Commission should
20 presume that all services and service functions are properly subject to competition,
21 and should identify only those few and narrow areas where compelling
22 circumstances may justify maintaining the service as a monopoly. Mr. Jacobson

1 discusses the competitive benefits from unbundling in greater detail in his
2 testimony.(Enron St. 4)

3
4 **II. THE SUPPLIER SINGLE BILL OPTION**
5 **Q. WHAT BILLING OPTIONS SHOULD BE IMPLEMENTED AS PART OF**
6 **THE UNBUNDLING OF BILLING AND COLLECTION?**

7
8 A. The Commission should require PP&L to implement and comply with full
9 customer choice as part of its restructuring. As applied to billing services, this
10 objective requires that customers be permitted to choose one of the following
11 billing options:

- 12 (1) Single EDC bill. Under this option, PP&L would provide all billing
13 services — for the services PP&L provides and on behalf of the
14 customer's supplier of choice — including billing for non-wire
15 services and the generation portion of the bill;
- 16 (2) The Two Bill Option. Under this option, PP&L would continue to
17 bill for its distribution, transmission and competitive transition
18 charges (i.e., CTC and ITC charges), while suppliers would provide
19 a separate bill for all services the customer chooses to receive from
20 the supplier (including generation services and other non-wire
21 services to the extent the customer chooses to utilize the supplier for
22 such services);
- 23 (3) The "Supplier Single or Complete Bill Option." Suppliers would
24 provide a single or complete bill in which the supplier would bill not
25 only for the services that it is providing (i.e., generation and, if
26 chosen by the customer, non-wire services) but also for services

1 provided by PP&L including transmission, distribution, CTC and
2 ITC.

3 **Q. WHAT ARE THE BENEFITS OF THE "THREE-OPTION" APPROACH?**

4 A. This "three option" approach would provide enormous benefits to consumers and, I
5 believe, is fully consistent with the Act's mandate to bring competition to the
6 electric generation market to the greatest extent possible. It is also consistent with
7 the approach just recently adopted in California, one of the first states to make
8 final determinations on these issues. Most importantly, it would allow the
9 Commission to implement customer service and billing policies which not only
10 serve to maintain present levels of service and customer protection, but which will
11 allow suppliers to add value for customers by enhancing and improving present
12 levels of customer service in furtherance of the objectives of customer choice.
13 Overall, permitting the supplier to be the "single point of contact" by providing a
14 single bill is one of the primary means of adding value to generation supply
15 services, and is as important to meaningful market development as any other part
16 of the competitive market restructuring.

17 **Q. WHY ARE COMPETITIVE BILLING OPTIONS SO IMPORTANT?**

18
19 A. The "Supplier Complete Bill Option" will allow suppliers to offer a more
20 comprehensive service to consumers, which would not only provide energy supply
21 at competitive rates, but would also permit the supplier to add value to generation
22 service through service functions such as metering, demand management,

1 specialized or customized billing and "TLC" customer service. By establishing
2 billing and customer services as separate competitive services, competitors will
3 have an incentive to bring to the market products and services that consumers
4 desire, providing added value at a total price resulting in real savings to customers.
5 For example, suppliers which also provide billing and customer services likely will
6 be able to offer a whole host of heretofore unseen products and services in the
7 billing area. Bills can communicate not only required information but information
8 customized to a customer's special needs, such as detailed information about
9 electric use for customers who choose time-of-use pricing, information about the
10 amount of electricity certain appliances utilize to help consumers conserve,
11 automatic notification of customers when electric use reaches pre-specified levels,
12 and many other products in which customers may find value.

13 While I believe Enron will be able to provide better billing/customer
14 services at lower rates than utility customers presently are required to pay, at
15 worst, directing that a "supplier complete bill option" be established and allowing
16 suppliers to be the single point of contact with customers is a relatively simple and
17 risk-free step which merely permits these opportunities to be offered to customers.
18 No customer will be required to take a Supplier Complete Bill Option; it will be
19 the supplier's obligation to show customers the benefits and value that would
20 result from agreeing to allow a supplier to provide services beyond strictly defined
21 generation supply, including billing, metering and customer service. If the

1 customer is not satisfied with any aspect of the supplier's service, he or she may
2 return to the utility or select an another supplier for all or part of his or her service
3 needs.

4 **Q. WHAT STEPS MUST THE COMMISSION TAKE TO ALLOW THE**
5 **COMPLETE BILL OPTION?**

6
7 A. To allow the three billing service options to become a reality, the Commission
8 must do the following:

- 9 1. Direct PP&L to establish procedures to allow the three billing
10 options. As the Commission has already indicated, it is likely that
11 suppliers will offer service pursuant to any one of (or possibly a
12 combination of) the three billing options simultaneously.
- 13 2. Require PP&L to unbundle billing and collection services on its
14 bills, and to credit customers electing alternative billing
15 arrangements via suppliers in the amount of the unbundled billing
16 charge.
- 17 3. Establish procedures to facilitate the "supplier complete bill option."
18 Obviously, the Commission must be assured that suppliers providing
19 complete billing and customer services will do so in compliance with
20 established customer service rules and consumer protection
21 requirements. Further, standards concerning remittance of charges

1 for services which continue to be provided by PP&L will have to be
2 established.

3 **Q. WHAT PROTECTIONS COULD BE ADOPTED TO INSURE THAT PP&L**
4 **RECEIVES ITS REVENUES IN A TIMELY MANNER?**

5
6 A. These standards could include additional bonding or other appropriate financial
7 guarantees from the billing supplier in order to provide assurances that EDC
8 revenue as well as state taxes, etc., when collected by the single bill supplier, will
9 be remitted in a timely and appropriate fashion.

10 A second, and potentially more efficient, approach would be for the
11 Commission to establish the "supplier complete bill" option and then mandate
12 EDCs, including PP&L, to negotiate in good faith with suppliers who wish to offer
13 such an option to customers residing in the EDC service territory. The EDCs
14 would be required to enter into billing/customer service "interconnection
15 agreements" with interested suppliers.

16 I understand that this is the format which is mandated by the
17 Telecommunications Act with respect to interconnection agreements for the
18 provision of competitive local services, and would appear to provide a useful
19 model. In fact, California has recently adopted this model for this purpose in
20 implementing its decision to permit customers to choose a supplier single bill.
21 This procedure would permit the supplier — the entity most interested in obtaining
22 such an interconnection arrangement — and the EDC — the entity most interested

1 in assuring remittance of all revenues and associated charges — to establish non-
2 discriminatory and uniform rules to permit the single supplier complete bill option
3 to be implemented. EDCs would, quite properly, demand financial assurances in
4 the form of letters of credit, bonds or deposits in order to assure that T&D charges
5 and other funds were remitted. Both parties would have an interest in assuring that
6 neither violated applicable customer service rules and protections. If a supplier
7 and an EDC were unable to negotiate such an interconnection arrangement, or
8 unable to agree on certain provisions, those portions could be brought before the
9 Commission for either informal mediation or on-the-record adjudication. So long
10 as care was taken to prevent unnecessary delay, this procedure could well result in
11 an efficient resolution of all necessary issues by the market participants themselves
12 rather than by regulatory fiat.

13 **Q. WHAT IS PP&L'S POSITION REGARDING BILLING OPTIONS?**

14 A. PP&L assumes that it would normally be responsible for billing customers for both
15 its unbundled, regulated services and for suppliers' charges unless a customer
16 wishes to receive two bills. In no case does PP&L's's proposal permit a single
17 supplier bill. (PP&L Statement No. 15 at 5-6).

1 Q. DOES THE SUPPLIER SINGLE BILL OPTION ALLOW THE SUPPLIER
2 TO ACT AS THE AGENT FOR THE CUSTOMER VIS-A-VIS THE EDC?
3

4 A. Yes, it is likely that customers which select a supplier to provide a single bill will
5 also authorize the supplier to act as agent for the customer as the "single point of
6 contact" with the utility. Under this scenario, Enron (or any other supplier) would
7 act as the customer's agent for the provision of the total electric package, including
8 the procurement of distribution, transmission, generation and non-wire services.
9 Under such circumstances, Enron should be able to accept orders for service from
10 customers and, upon the establishment of an agency agreement with a customer,
11 assure the initiation of service at the customer's location. Nothing in the Act that I
12 am aware of requires that only the EDC can provide connection for customers.
13 Essentially, Enron, through the agency agreement, would become PP&L's
14 customer of record and would be directly responsible for payment to PP&L of the
15 EDC's charges associated with delivering electricity to the customer. Such an
16 arrangement would allow Enron and other suppliers to provide a "soup to nuts"
17 service to customers and allow Enron to add the greatest value for the customer.
18 This issue is of critical importance to Enron since it will allow Enron to bring the
19 fullest benefits of competition to Pennsylvania consumers and businesses through
20 lower prices and innovative services.

1 **Q. HAS THE COMMISSION ACCEPTED THIS AGENCY ARRANGEMENT**
2 **IN COMPETITIVE MARKETS FOR ANY OTHER UTILITY INDUSTRY?**

3
4 A. Yes. My understanding is that the Commission has accepted agency arrangements
5 identical to what Enron is proposing here in the natural gas industry for
6 competitive suppliers. In fact, this relationship between customer and service
7 provider is now prevalent in the natural gas industry for customers in markets
8 subject to competition.

9 **Q. HOW WOULD CHAPTER 56 APPLY TO ENRON UNDER SUCH**
10 **CIRCUMSTANCES?**

11
12 A. Under such circumstances Enron would, as the agent of the customer, have the
13 right to authorize discontinuance of service even though the actual physical
14 disconnection may be provided by the EDC. In such a case Enron would, of
15 course, agree that all provisions of Chapter 56 should be applicable to its activities.

16 **Q. WHAT IS PP&L'S POSITION ON THIS MATTER?**

17
18 A. I have not been able to ascertain whether PP&L has presented any direct testimony
19 on this issue.

20 **Q. WHAT ACTION BY THE COMMISSION IS REQUIRED TO ALLOW**
21 **AGENCY ARRANGEMENTS?**

22
23 A. In order to enable agency arrangements to be made between customers and
24 suppliers, the Commission must direct PP&L to include a provision in its tariff
25 which allows customers to enter into an agency relationship with suppliers for
26 purposes of procuring service from PP&L.

1 **Q. FOR SUPPLIERS WHICH CHOOSE TO CONTINUE TO USE PP&L'S**
2 **BILLING SERVICES, DOES PP&L INTEND TO CHARGE A SUPPLIER**
3 **FOR ITS BILLING SERVICES?**

4
5 A. Yes. In response to Enron Interrogatory, Set I - Q35, PP&L indicated that it is in
6 the process of expending upwards of \$38 million on a "state-of-the-art" customer
7 information billing system. However, apparently due to the fact that it is currently
8 developing this new billing system, PP&L has not quantified the charge it will
9 propose to assess on suppliers and other third parties for its billing services in its
10 plan. The inability to propose a specific charge for its billing services creates
11 uncertainty for suppliers attempting to evaluate the reasonableness of PP&L's
12 plan. However, the charge of \$1.10 per bill proposed by PP&L and rejected by the
13 Commission for PP&L's pilot program appears to be exorbitant. Any charge
14 proposed to be assessed by PP&L for billing service must be reviewed by the
15 Commission to assure that it is cost-based. Moreover, the fee should be
16 transparent for all customers including those which do not select an alternative
17 supplier.

18 **Q. WHAT IS ENRON'S POSITION REGARDING SUCH A CHARGE?**

19 A. I have no objection to a charge for billing to electric generation suppliers which
20 choose to purchase billing services from PP&L as long as the charge is cost-based
21 and reasonable. In fact, Enron submits that cost should be used as a basis to
22 unbundle the billing and collection service so that it can be provided
23 competitively.

1 Q. ARE ANY PROTECTIONS REQUIRED TO ASSURE THE
2 REASONABLENESS OF PP&L'S BILLING CHARGE?

3 A. Yes. If for whatever reason Enron does not have the ability to direct-bill it will
4 have no alternative but to purchase PP&L's billing and collection services. Under
5 those circumstances, given the lack of an alternative, generation suppliers will
6 have little or no leverage in negotiating billing arrangements with PP&L under
7 non-discriminatory terms at reasonable and cost-based prices absent Commission
8 oversight. It would be counterproductive to allow utilities to demand that
9 suppliers enter into unreasonable billing arrangements, as it would decrease the
10 prospects for the development of competitive alternatives. Of course, regulatory
11 controls will not be necessary if the Commission acts to establish fully competitive
12 billing and collection services.

13 The factors discussed above supporting unbundling of billing and collection
14 services are particularly important as they relate to PP&L. Its planned
15 expenditure of \$38 million on a billing system raises important questions as to
16 whether those costs should be recovered by the monopoly Delivery Group. While
17 Enron certainly does not oppose PP&L's efforts to enhance its billing system, such
18 investment in a competitive environment should generally be recovered by the
19 competitive affiliate or division and the risk of recovery of such investments borne
20 by the competitive entity's stockholders, not monopoly ratepayers. This is how
21 Enron must recover its investments to enhance its own billing system.

1 Accordingly, ideally, the new billing system should be transferred to the
2 Generation Supply Group to be recovered as the market permits -- again, assuming
3 a fully competitive billing and collection market. However, if the Commission
4 finds that billing system assets and costs should remain with the Delivery Group,
5 those costs should be allocated between distribution, transmission and generation
6 in order to determine what charges to consumers, suppliers and other third parties
7 should result. PP&L has not indicated how costs will be allocated or what charges
8 will be proposed as a result. Not only is a fair allocation important, but
9 unbundling of billing and collection service is essential so that customers are
10 aware what they are paying PP&L for enhanced billing service for comparison
11 with the quality and price of billing services offered by suppliers. Furthermore, at
12 a minimum, the terms and conditions offered to suppliers for billing services
13 should be tariffed and subject to normal tariff review procedures.

14 **Q. DO YOU AGREE WITH PP&L'S PROPOSED APPLICATION OF**
15 **PAYMENTS IT RECEIVES WHEN IT BILLS FOR BOTH ITSELF AND A**
16 **SUPPLIER?**

17
18 A. It is very difficult to tell from PP&L's restructuring filing. PP&L's proposed
19 billing procedures provided for in Exhibit BJB 1 indicates that "The funds remitted
20 to the A\S [alternative supplier] will reflect actual billed amounts to A\S customers
21 less charges for billing." However, this billing procedure does not expressly
22 address what funds will be remitted to suppliers when only partial payments are
23 received by PP&L. The Commission should clarify that payments received from

1 customers by PP&L should be applied to services provided by PP&L and services
2 provided by the supplier on a *pro rata* basis. There is no reason why PP&L's
3 charges should be given priority over a supplier's. Distribution, transmission, and
4 generation are three necessary components of the same service. Without both the
5 distribution and transmission service provided by the utility and the generation
6 service provided by the supplier, the customer cannot turn on his or her lights or
7 heat his or her home. PP&L should therefore be required to implement a billing
8 system in its tariff which accommodates a *pro rata* application of payments
9 between distribution, transmission and generation, independent of the supplier of
10 that service.

11 **Q. IF THE COMMISSION PERMITTED PRIORITY APPLICATION OF**
12 **PAYMENTS TO PP&L WOULD IT HAVE AN ADVERSE EFFECT ON**
13 **THE MARKETPLACE?**

14
15 A. Yes. It is generally understood that some customers, particularly residential
16 customers, do not pay their electric bills in full every month. If payments are not
17 applied on a *pro rata* basis, a disproportionate amount of the customer's
18 delinquencies will be allocated to the supplier. This potentially could lead to
19 unnecessarily early discontinuance of service by the supplier for non-payment.
20 Upon discontinuance of service by the supplier, the delinquent customer will
21 return to the utility as the default generation supplier and will be deprived of the
22 benefits of the marketplace. Furthermore, utilities, including PP&L, are already
23 recovering uncollectibles, including those uncollectibles associated with the

1 generation portion of the bill, in current rates. In a competitive environment,
2 suppliers will be presumably assuming the risk of uncollectibles for the generation
3 portion of the bill. Accordingly, to assign a disproportionate amount of potential
4 uncollectibles to suppliers would result in double recovery of certain uncollectibles
5 expense by PP&L.

6
7 **III. PHASE-IN OF FULL DIRECT ACCESS**

8 **Q. WHAT IS YOUR UNDERSTANDING OF HOW DIRECT ACCESS WILL**
9 **BE PHASED-IN IN PENNSYLVANIA?**

10
11 A. It is my understanding that there must be a transition and phase-in period, which
12 ends, subject to the Commission's discretion, on January 1, 2001, at which point
13 all customers with electric distribution companies shall have the opportunity to
14 purchase electricity from their choice of electric generation suppliers. Following
15 the pilot programs, it is my understanding that the Competition Act calls for the
16 following phase-in schedule: as of January 1, 1999, 33% of the peak load of each
17 customer class shall have the opportunity to obtain direct access; as of January 1,
18 2000, a maximum of 66%; and as of January 1, 2001 all customers shall be able to
19 obtain direct access. It is also my understanding that the Competition Act calls for
20 selection of customers on a first-come-first-served basis unless the Commission
21 determines that some other method is necessary to prevent competitive
22 disadvantages among similarly situated customers within a customer class.

1 **Q. WHAT HAS PP&L RECOMMENDED?**

2 A. PP&L proposes to use a random selection approach rather than the first-come-first-
3 served approach expressed in the statute for all customer classes when a given
4 class is over enrolled. (PP&L St. No. 14 at 4).

5 **Q. DOES ENRON OBJECT TO THIS METHODOLOGY ?**

6 A. Yes.

7 **Q. PLEASE EXPLAIN?**

8 A. For residential customers, there is no reason to depart from the statutory first-
9 come-first-served basis because, by definition, residential customers do not
10 “compete” with each other. Clearly, there can be no “competitive disadvantages”
11 to residential customers by accepting such customers on a first-come-first-served
12 basis, and I do not believe that the Competition Act allows any discretion to depart
13 from first-come-first-served for such customers. Accordingly, for residential
14 customers, PP&L should be required to use an open enrollment standard that is
15 conducted on a first-come-first-served basis until 33% and 66% of residential
16 customers respectively (on a customer count not customer load basis) are included
17 in the phase-in for each of the first two years. Furthermore, PP&L should be
18 directed to commence the processing of customer switching applications as of June
19 1, 1998.

20 **Q. WHAT ABOUT COMMERCIAL AND INDUSTRIAL CUSTOMERS?**

1 A. Here there is a reason to depart from first-come-first-served preference because
2 competitive disadvantages within those classes are real and appropriate for
3 consideration. Because of this, I would defer to the selection process advocated by
4 many commercial and industrial customers. Enron would be willing to accept the
5 “first through the meter” approach, where Enron would supply the first portion of
6 the customer’s electricity received in a given hour, and the EDC would supply the
7 remainder. Some utilities have complained that this places all the risk of the
8 variable part of the customer’s load on them. Enron would therefore also be
9 willing to “follow the customer’s load” and provide a fixed percentage of its
10 customers’ load throughout the day.

11 **Q. HOW DOES PP&L PROPOSE TO ADDRESS THE COMPETITIVE**
12 **DISADVANTAGE IN THE C&I CLASSES?**

13
14 A. PP&L proposes to address competitive disadvantage issues on a case-by-case
15 basis. (PP&L St. 14 at 5). Such an approach is completely unacceptable. Now,
16 within this restructuring plan proceeding, is the time to set forth the rules of the
17 game for the implementation of direct access in PP&L’s service territory. Matters
18 as important as the procedures which will be utilized to select which commercial
19 and industrial customers will participate in a given phase cannot be left to the
20 utility’s discretion.

21 **Q. HOW SHOULD GRANDFATHERING FOR PILOT PROGRAMS**
22 **CUSTOMERS INTO DIRECT ACCESS BE ACCOMPLISHED?**
23

1 A. All customers or customer load which participates in PP&L's pilot programs
2 should be grandfathered into the first phase of direct access.

3

4 **IV. CUSTOMER SELECTION AND SLAMMING**

5 **Q. WHAT IS MEANT BY SLAMMING?**

6 A. "Slamming" is when a supplier switches a particular customer to its service
7 without having received that customer's consent. This term arose in the
8 telecommunications industry with the problem of long distance carriers switching
9 customers to their service without customer consent.

10 **Q. WHAT IS YOUR UNDERSTANDING OF WHAT THE COMPETITION**
11 **ACT PROVIDES REGARDING "SLAMMING"?**

12
13 A. It is my understanding that the Commission is required to promulgate regulations
14 to ensure that customer consent is obtained prior to a change of electric suppliers.

15 **Q. WHAT IS ENRON'S POSITION AS TO HOW THIS CONCERN SHOULD**
16 **BE TREATED ?**

17
18 A. As the Commission is fully aware, slamming presented a relatively serious
19 problem to telephone customers and regulators in the late 80's and early 90's when
20 overaggressive marketing by long distance carriers led to frequent instances in
21 which a local exchange carrier implemented a change pursuant to the request of a
22 long distance carrier without any — or at least without adequate — customer
23 consent. It would seem obvious that the purpose of the provision in the Act is to

1 avoid this type of slamming problem in Pennsylvania's competitive retail electric
2 market.

3 In Enron's view, the situation in the competitive electric industry is very
4 analogous to the situation in the telecommunications industry. Essentially, the
5 electric distribution company plays the role of "gatekeeper" traditionally held by
6 local exchange carriers. Generation suppliers — including the distribution utility's
7 supplier affiliate or division — will submit change orders to that incumbent utility
8 when a customer decides to switch its generation supplier service, much like long
9 distance carriers place change orders with a local exchange carrier. The
10 Commission's role in setting standards for restructured utilities should be designed
11 to assure that the supplier receives and adequately documents the customer's
12 consent prior to placing a change order with the utility.

13 **Q. HOW SHOULD THE COMMISSION DO THIS?**

14 A. It is imperative both to protect consumers and, as the Commission has
15 acknowledged, "to make changing a carrier as easy and convenient as possible for
16 customers."¹ My understanding is that the Act requires that the customer of
17 record affirmatively choose to switch suppliers either through "direct oral
18 confirmation" or "written evidence" of that choice.

¹ Proposed Rulemaking Order Establishing Standards for Changing a Customer's Electric Supplier, Docket No. L-00970121 (Order entered April 25, 1997 at 2).

1 Q. HOW SHOULD THE PROTECTIONS DESIGNED TO PRECLUDE
2 SLAMMING BE IMPLEMENTED?

3
4 A. Given the mandate of the Act, I believe there are two distinct methods which
5 should be established to govern the customer selection process in order to deter
6 unauthorized switching or slamming. First, the EDC will switch a customer's
7 supplier if the customer provides "direct oral confirmation" of consent. Second,
8 the EDC will switch a customer's supplier if the EDC is provided "written
9 evidence of the customer's consent to a change of supplier."

10 Enron believes that "direct oral confirmation" through a conference call
11 between the customers, suppliers and EDC should be permitted regardless of
12 whether the change is initiated by customer contact with the supplier or initiated
13 by supplier contact with the customer. In either case, the supplier should be
14 permitted to present "direct oral confirmation" of the customer's selection.

15 As for the term "written evidence," it is my understanding that the statute
16 does not require "direct" written communications from the customer through a
17 letter of authorization ("LOA") or an agency agreement; nor does it require that
18 the customer execute the document submitted to the EDC. While LOAs and other
19 agency agreements would be included within the term "written evidence," I
20 believe the term is broader and includes any document which evidences to the
21 EDC that customer consent was received by the supplier. Requiring filing of an

1 executed LOA or agency agreement prior to implementing the customer's choice
2 will unnecessarily delay the process without any corresponding benefit.

3 Requiring an LOA or agency agreement to be filed directly with the EDC is
4 particularly problematic in the residential market in which mailing documents back
5 and forth could take weeks. Furthermore, many residential customers who
6 sincerely desire to switch suppliers will either not pay close enough attention to
7 their mail, will not bother to respond in a timely manner, or will simply conclude
8 that all the paperwork is "too much trouble." Accordingly, requiring submission of
9 an executed document for residential customers will be an extreme deterrent to
10 customer choice.

11 Enron believes that "written evidence" would include a letter or other
12 written communication from the supplier which affirmatively indicates that the
13 supplier has received consent from the customer to switch the customer's service
14 to the supplier and that an independent third party has verified that the customer
15 has consented to the switch. If further evidence is required in a given case, a
16 written statement could be provided by the entity conducting the third-party
17 verification. Such communications would clearly meet the statutory requirement
18 of "written evidence," which the EDC can keep on file documenting customer
19 consent. A statement of compliance with a third-party verification process
20 provides further evidence that customer consent has been received by the supplier.

1 **Q. WHAT WOULD HAPPEN IF A SUPPLIER FURNISHED WRITTEN**
2 **EVIDENCE TO AN EDC WHERE IT DID NOT, IN FACT OBTAIN THE**
3 **CUSTOMER'S CONSENT?**

4 A. Enron would not oppose the imposition of strong penalties for suppliers that are
5 found to expressly document customer consent in writing when such customer
6 consent has not been received. Such fraudulent activity, if intentional, should be
7 subject to penalties to the greatest extent permitted by law.

8 In addition, further action to eliminate the slammed customer's
9 responsibility to pay the slamming supplier under such circumstances is
10 appropriate, unless the switch was caused by an error. In combination, strong
11 penalties and preclusion from payment will remove incentives for and establish
12 strong deterrents to slamming, which I am certain will preclude those practices
13 from occurring in Pennsylvania's retail electric markets. Accordingly, Enron's
14 proposal fulfills the dual objectives of deterring slamming and making changing a
15 carrier as easy and convenient as possible.

16 **Q. WHAT SHOULD HAPPEN IN THE EVENT OF A GOOD FAITH**
17 **ERRONEOUS SWITCH?**

18 A. In such a case there should be no penalty or non-payment. I believe the Act was
19 designed to deter intentional slamming, not unintentional system error. Any
20 benefit received from designing a completely foolproof system to counter the
21 potential for unintentional system error is clearly outweighed by the adverse
22 impact on the customer switching process.
23

1 **Q. WHAT IS PP&L'S POSITION ON THIS ISSUE?**

2 A. PP&L proposes a two-step process for selection of a supplier. The first step is
3 written notification of a customer's selection by the supplier. The second step
4 involves sending the selection information to the customer for confirmation.
5 (PP&L St. 14 at 6). I accept the first step since it is also included in Enron's
6 proposal. However, the second step is completely unacceptable. Forwarding the
7 selection information customer back to the customer for confirmation will take a
8 considerable period of time potentially resulting in delay in implementation of
9 customer choice for weeks. Although PP&L proposes that if it does not receive a
10 response from the customer it will implement the switch, it does not identify what
11 period of time will be allowable for awaiting a confirmation. Furthermore,
12 PP&L's proposal provides no greater protection against slamming than that
13 provided by Enron's proposal. In fact, it appears that Enron's proposal provides
14 greater protection since it assures that the customer selection is actually confirmed
15 through third party verification.

16 **V. MARKETING AND CONSUMER EDUCATION**

17 **Q. PLEASE DEFINE AND DISTINGUISH THE TWO TERMS.**

18 A. The term "marketing" refers to activities which will be engaged in by generation
19 suppliers to attract customers to select the supplier as the energy service provider.
20 I expect that all generation suppliers, including Enron and PP&L's Generation
21 Supply Group, will engage in widespread marketing through a variety of media to

1 attract customers to their services. No regulatory mandates or incentives are
2 necessary to require or stimulate marketing activity. Business incentive will be
3 more than adequate to engage suppliers in marketing activity.

4 With respect to “consumer education,” it is my understanding that the Act
5 provides that, prior to the implementation of any restructuring plan, each electric
6 distribution company, in conjunction with the Commission, must implement a
7 consumer education program in order to educate customers about the introduction
8 of competition into the generation supply market so that consumers can make
9 educated and meaningful choices in the marketplace. My understanding is that
10 under the Act, PP&L’s Customer Education Program requires Commission
11 approval, and that the Commission can modify PP&L’s proposed program as it
12 sees fit in order to accomplish the Act’s objectives.

13 **Q. WHAT IS ENRON’S POSITION REGARDING THE NEED FOR**
14 **CUSTOMER INFORMATION AND EDUCATION?**

15 A. Enron has a keen interest in the customer information and education issues
16 presently being addressed by the Commission, both generically and in each
17 restructuring case. As a competitive supplier, Enron relies on the quality and price
18 of its products to attract customers. Accordingly, it is critical to Enron that
19 Pennsylvania consumers receive objective, comprehensive and understandable
20 marketing and educational information from the Commission, electric generation
21 suppliers and electric distribution utilities. In Enron’s view, the more informed the

1 consumer, the more likely it is that the consumer will participate in the competitive
2 choice process and will select the retail electric services and products that best
3 meet his or her needs.

4 **Q. WHAT IS THE APPROPRIATE SEPARATION WHICH SHOULD BE**
5 **IMPLEMENTED TO DISTINGUISH MARKETING FROM CONSUMER**
6 **EDUCATION?**

7
8 A. If the Act's and the Commission's goals for educating consumers through the
9 dissemination of objective information are to be met, a strictly enforced separation
10 between marketing activity and the customer education process should be
11 implemented by the Commission as a component of PP&L's customer education
12 program. In my view, the only meaningful separation which has any chance of
13 being enforced is to preclude both utilities and suppliers from engaging in the
14 preparation or dissemination of customer education information or materials within
15 the context of restructuring the electric industry. Allowing utilities or suppliers to
16 participate directly in the preparation or dissemination of consumer education
17 information or materials will inevitably lead directly to problems with
18 dissemination of biased information designed for marketing purposes. At the same
19 time, given the purpose of such educational information — which is to inform all
20 consumers of the changes in the electric utility industry and to provide them with
21 the information necessary to make appropriate choices about their electric service
22 — it makes the most sense to have this educational information prepared and
23 disseminated on a centralized basis to consumers throughout the state by the

- 1 Commission or an independent third party under the Commission's supervision,
2 rather than dividing the preparation and dissemination of customer education
3 information and materials separately on a utility service territory by territory basis.

4 **Q. ARE YOU SUGGESTING THAT UTILITIES AND SUPPLIERS SHOULD**
5 **NOT SUPPLY ANY INFORMATION TO CUSTOMERS?**
6

7 A. Yes. The Commission should either conduct or delegate to an independent third
8 party the preparation and dissemination of all retail access information. This is the
9 approach recently adopted in California. Overall, the Commission and
10 independent third parties should disseminate information and educate. Suppliers
11 and market participants should engage in marketing activity. The two should not
12 be mixed under any circumstances. Because PP&L's Delivery Group is part of the
13 same company as its Generation Supply Group, it has a direct and equal interest in
14 the success of its competitive activities. Accordingly, PP&L should be precluded
15 from preparing or disseminating retail competition information or materials by any
16 means since such activity will inevitably favor its own competitive activities.

17 **Q. ISN'T IT POSSIBLE TO DISTINGUISH BETWEEN MARKETING AND**
18 **CONSUMER EDUCATION INFORMATION?**
19

20 A. Attempting to label information as marketing or customer education oriented is
21 completely unenforceable. The only effective answer is not to attempt to label
22 information as being either marketing or consumer education oriented, but instead
23 to centralize the consumer education effort and to eliminate both suppliers and
24 utilities from direct involvement other than advisory activities. Overall, Enron

1 supports the notion of centralized administration of consumer education, whether
2 the administration be conducted by the Commission or an objective third party
3 administrator.

4 Moreover, structurally separating consumer education from marketing will
5 eliminate the potential for customer confusion. It will also reduce the overall cost
6 if the effort is centralized for all Pennsylvania consumers. If conducted in this
7 manner, Pennsylvania's consumer education program will provide unbiased,
8 objective and meaningful information to consumers. Separately, suppliers and
9 utilities will market their products and services to consumers. With these two
10 sources of information effectively combined, educated consumers will exercise
11 meaningful choice in the marketplace, and retail competition will develop in a fair
12 and effective manner.

13 **Q. HAVE YOU REVIEWED PP&L'S CONSUMER EDUCATION**
14 **PROPOSAL?**

15
16 A. Yes, as contained in PP&L Statement No. 17. PP&L proposes to be the primary
17 disseminator of customer information in its customer education program and to be
18 the author of the contents (with Commission and third party consultation). Such a
19 program will only result in the mixing of marketing and customer education and
20 will not result in the dissemination of unbiased, objective information to PP&L's
21 customers. It will also result in customer confusion and will benefit no one but
22 PP&L.

1 **Q. DOES PP&L'S TESTIMONY CONTAIN EVIDENCE THAT ITS**
2 **CUSTOMER EDUCATION WILL NOT BE UNBIASED?**

3
4 A. Yes. PP&L states that it will put its own name or will prepare all customer
5 education communications under its name, will introduce a web site and has
6 proposed a special 800 number dedicated to customer education. There is no
7 reason for PP&L to place its name on any customer education communications. It
8 is simply unrealistic to believe that customers will be able to distinguish between
9 such "educational" information and marketing information bearing the same logo
10 and furnished by another group within the company.

11
12 **Q. HAVE YOU HAD THE OPPORTUNITY TO REVIEW ANY CUSTOMER**
13 **EDUCATION MATERIALS PREPARED TO DETERMINE IF THEY ARE**
14 **BIASED?**

15
16 A. No. In response to Enron Interrogatory, Set I - Q29, PP&L indicated that it had
17 not yet developed or disseminated customer choice education materials. Certainly,
18 it is critical to review such materials within the context of this proceeding rather
19 than after PP&L's customer education program has been approved by the
20 Commission. However, if they are prepared under PP&L's name as proposed by
21 PP&L the materials will be biased on their face.

22 **VI. UNIVERSAL SERVICE**

23 **Q. WHAT IS ENRON'S POSITION AS TO THE NEED FOR A UNIVERSAL**
24 **SERVICE PROGRAM IN A COMPETITIVE GENERATION MARKET?**

25
26 A. Enron strongly supports initiatives to establish a Universal Service Program to
27 provide support to low income, payment troubled Pennsylvanians as long as the

1 Program design is competitively neutral, as required by the Act. The objectives of
2 a Universal Service Program in a competitive generation supply environment
3 should be not only to ensure that all low-income Pennsylvanians receive required
4 electric services, but also to secure all of the benefits of the competitive generation
5 market for these same consumers. In fact, low-income consumers stand to benefit
6 greatly from the reduced energy prices which the competitive market will offer.
7 Accordingly, it is extremely important for the Commission to establish a Universal
8 Service Program for PP&L which is consistent with competitively neutral
9 universal service principles by assuring that universal service support flows
10 towards the payment of distribution, transmission and generation services
11 regardless of whom the customer chooses to provide his or her electric services.
12 The goal should be to stimulate competition for serving low-income markets and
13 to comply with the competitive principles which are embodied in the Act while
14 maintaining and, if possible, increasing the benefits to low-income customers
15 provided by current universal service programs.

16 **Q. HOW SHOULD UNIVERSAL SUPPORT BE ALLOCATED?**

17 A. Distribution, transmission and generation are all components of a single electric
18 service. Ensuring access to distribution alone will not enable a consumer to turn on
19 a light bulb. Accordingly, universal service support must be portable and should
20 be allocated to each component of a low-income customer's electric bill on a *pro*

1 *rata* basis in proportion to the average comparative level of charges on customer
2 bills.

3 **Q. WILL LOW INCOME CONSUMERS BE DISADVANTAGED IN ANY**
4 **WAY IF PP&L STRUCTURES ITS UNIVERSAL SERVICE PLAN TO**
5 **INCLUDE PRO RATA ALLOCATION AND PORTABILITY OF**
6 **SUPPORT?**

7
8 A. No. Low-income consumers will receive the same amount of assistance regardless
9 of how the funds are credited on the bill. Further, in no case will a customer's
10 service be terminated more quickly under a Universal Service plan with portable
11 support than it would be under a plan which did not include portability. There is,
12 therefore, no downside risk to the consumer, but a considerable benefit in that
13 active competition for the business of low-income consumers should serve to
14 reduce their bills even further.

1 **Q. WHAT IS PP&L'S POSITION ON PORTABILITY AND PRO-RATA**
2 **ASSIGNMENT OF UNIVERSAL SERVICE SUPPORT?**

3
4 A. In its answer to Enron Interrogatory, Set III - Q15, PP&L stated that universal
5 service support should be applied only to the distribution portion of the bill. It is
6 note worthy that in PECO's restructuring plan it agreed that its Customer
7 Assistance Program or other universal service funds should be allocated on a *pro*
8 *rata* basis regardless of the supplier.

9 **VII. MISCELLANEOUS ISSUES.**

10
11 **Q. ARE THERE ANY OTHER ISSUES PERTAINING TO PP&L'S**
12 **RESTRUCTURING WHICH YOU WISH TO COMMENT ON AT THIS**
13 **TIME?**

14
15 A. Yes. There are two additional issues which requires the Commission's attention in
16 ; order to assure that PP&L's restructuring plan will enable the meaningful
17 development of a competitive market. This first issue relates to the need for
18 representative, historic usage data or demand profiles for each customer class to be
19 provided by PP&L to suppliers.

20 **Q. WHY IS IT NECESSARY FOR SUPPLIERS TO RECEIVE**
21 **REPRESENTATIVE DEMAND PROFILES FOR EACH CUSTOMER**
22 **CLASS?**

23
24 A. One of the primary factors which Enron uses to develop prices and service
25 arrangements for a given customer or customer type is the customer's estimated
26 usage patterns. While ideally it would be preferable to review a given potential
27 customer's actual demand profile, I realize that this information is proprietary to

1 the customer and may not be released by PP&L without customer consent.

2 However, Enron can develop a reasonable estimate of a given customer's usage
3 patterns by reviewing a representative demand profile for that consumer's
4 customer class. It is critical that Enron be provided this information by PP&L at
5 least six months prior to the time of initiation of direct access and that the
6 information be updated upon request. Accordingly, the Commission should ensure
7 timely access to this information.

8
9 **Q. EARLIER, YOU MENTIONED THAT THE DIRECT ACCESS PHASE-IN**
10 **IS SCHEDULED TO BEGIN ON JANUARY 1, 1999 BUT IS SUBJECT TO**
11 **THE COMMISSION'S ABILITY TO DELAY THE IMPLEMENTATION**
12 **DATE. DOES THIS POTENTIAL CAUSE CONCERNS FOR SUPPLIERS**
13 **SUCH AS ENRON?**

14
15 A. Yes, this is the second issue which requires Commission attention. I understand
16 that the Competition Act authorizes the Commission to delay the initiation of the
17 phase-in for two additional six-month periods, and specifies certain circumstances
18 that could justify the delay, including a finding that implementation would affect
19 reliability, the failure of communications and information systems to be installed,
20 and "other considerations" that would affect the orderly implementation of the
21 Competition Act. The Commission must make this determination at least 45 days
22 prior to January 1, 1999. My concern is that utilities could request a delay a
23 relatively short time before the 45-day notice period, and direct access could be
24 delayed after Enron and other suppliers had expended enormous time and
25 resources preparing to provide service and signing up customers.

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKETED

AUG 26 1997

SURREBUTTAL TESTIMONY OF

RAYMOND W. BOWEN, JR.

ON BEHALF OF
ENRON POWER MARKETING, INC.

RECEIVED
97 AUG 25 PM 1:33
F.A.P.U.C. OFFICE
PROTHONOTARY'S OFFICE

DOCKET NO. R-00973954
RE: PP&L RESTRUCTURING PLAN

AUGUST 15, 1997

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. Raymond W. Bowen, Jr., 1400 Smith Street, Houston, Texas 77002.

3 **Q. DID YOU PREVIOUSLY SUBMIT DIRECT TESTIMONY IN THIS**
4 **PROCEEDING?**

5 A. Yes, I submitted direct testimony in this proceeding on July 2, 1997.

6 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

7 A. I will respond to the comments of Mr. Bujnowski regarding competition in the "Non-
8 Wire" or "Revenue Cycle" metering, billing and information service areas. Enron
9 witnesses Reising and Jacobson also responded to Mr. Bujnowski's testimony. I will
10 also respond to comments of PP&L witnesses Henry W. Baumann and Timothy Dahl.

11 **Q. WHAT IS MR. BUJNOWSKI'S POSITION ON BEHALF OF PP&L**
12 **REGARDING THE UNBUNDLING OF BILLING AND METER SERVICES?**

13 A. He believes that such unbundling should not be done at this time.

14 **Q. WHAT IS THE BASIS FOR HIS CONTENTION?**

15 A. He claims that deregulating these services is contrary to the Competition Act; will not
16 improve service; will add complexity in regulatory matters and confuse customers; will
17 cause additional stranded investment; and that the record does not support the fact that
18 such deregulation will add benefit to consumers or promote direct access.

19 **Q. DO YOU AGREE WITH MR. BUJNOWSKI'S ARGUMENTS?**

20 A. No.

21 **Q. WITH RESPECT TO THE FIRST POINT, RELATING TO THE**
22 **COMPETITION ACT, DO YOU BELIEVE MR. BUJNOWSKI IS CORRECT?**

23 A. That is obviously a legal question, for the Commission and the courts to answer; and
24 it is my understanding that the Commission has ruled that such unbundling is legally

1 permissible. As Mr. Bujnowski himself notes, on July 11, 1997, the Commission
2 issued its Final Order on Guidelines for Maintaining Customer Services at the Same
3 Level.¹ In this "Customer Services Order," the Commission recognized the right to
4 unbundle and competitively provide the billing and supplier complaint functions under
5 the Competition Act. The Commission stated:²

6 [W]e simply disagree with the conclusions . . . that only EDCs
7 can provide these customer service functions.

8 The Commission did not implement this guideline immediately but retained it as an
9 option to be explored in the context of the restructuring filing of each utility. For the
10 reasons set forth in my direct testimony, I continue to believe that it is in the interest
11 of consumers to implement this option.

12 **Q. DOES MR. BUJNOWSKI HAVE CONCERNS OTHER THAN WHETHER THE**
13 **ACT PERMITS THE PROVISION OF REVENUE CYCLE SERVICES?**

14 **A.** Yes, he does. In fact, in response to my testimony in regard to the Commission's third
15 billing option, i.e., supplier complete bill option, and my testimony concerning "agency,"
16 Mr. Bujnowski noted concerns of service restoration, down-lines, disaster recovery,
17 Chapter 56 violations, customer confusion, customer attitudes, duplication of services,
18 stranded cost and the high quality of PP&L's current service, among numerous other
19 items.

¹ Final Order re: Guidelines for Maintaining Customer Services at the Same Level of Quality Pursuant to 66 Pa. C.S. § 2807(D), and Assuring Conformance with 52 Pa. Code Chapter 56 Pursuant to 66 Pa. C.S. § 2809(E) and (F), Docket No. M-00960890F.0011 (Order entered July 11, 1997).

² Id. at 10-11.

1 Q. DO YOU BELIEVE THAT MR. BUJNOWSKI HAS RAISED LEGITIMATE
2 CONCERNS?

3 A. Yes and no. Yes, in the sense that many of these concerns will need to be addressed
4 during the transition to a fully competitive electric market. No, as to these concerns
5 being valid reasons as to why Enron, and other alternative suppliers, should not be able to
6 provide revenue cycle services to customers.

7 Q. PLEASE EXPLAIN YOUR ANSWER.

8 A. First, I do not intend to respond to each and every item of concern noted by Mr.
9 Bujnowski. However, I believe that the methodology used by the Commission in
10 utilizing task force working groups and initiating generic docket proceedings to resolve
11 many transitional problems will continue to be necessary. The California Commission
12 recognized upon the unbundling of revenue cycle services that there was still work to do,
13 and the working group process was the place to solve these types of concerns. I see no
14 reason why the participants in the competitive metering and billing groups cannot work
15 out most of the of concerns noted by Mr. Bujnowski.

16 However, I feel I must comment regarding Mr. Bujnowski's statement at page 8,
17 lines 16 and 17 that implies my testimony contradicts the assurances given by Enron that
18 Enron is committed to customer protection requirements. Enron has participated from
19 the stakeholders groups through all the Commission work groups and through these
20 restructuring proceedings, and in each instance, Enron has indicated its commitment,
21 resolve and ability to conform to all applicable consumer protection requirements. The
22 fact is, Mr. Bujnowski is simply wrong in stating that my testimony in regard to partial
23 payments would result in a customer being disconnected for non-payment under any

1 circumstances except utilizing procedures completely consistent with Commission
2 regulations.

3 **Q. WHAT ABOUT MR. BUJNOWSKI'S CONCERNS WITH AGENCY?**

4 A. Enron witness Paul Reising responds to these concerns; however, I would also note that
5 many of the concerns expressed in Mr. Bujnowski's rebuttal, i.e. customer attitudes,
6 customer confusion, the ability to make good choices about energy consumption — are
7 all part and parcel of the right of a customer to make Enron its agent. As PP&L witness
8 Dr. Kalt states in his rebuttal testimony regarding bundled services at page 27, "the
9 customers will only take the offer if they find it more attractive than the option available
10 from others." The theme behind the Act is to create customer choice and my proposals
11 promote the choices available to customers while Mr. Bujnowski's proposal impedes or
12 restricts these choices.

13 **Q. ARE THERE ANY OTHER AREAS WHICH YOU WISH TO ADDRESS**
14 **REGARDING MR. BUJNOWSKI'S REBUTTAL?**

15 A. Yes. On page 11, Mr. Bujnowski references research regarding customer bills,
16 concluding that residential customers' basic expectations in billing are for accurate
17 billing and posting.

18 *I would simply note that by encouraging the Commission to open revenue cycle*
19 *services up to competition, Enron is not asking that PP&L turn its customers over to*
20 *Enron. As I stated in my direct testimony on page 8, "it will be the supplier's obligation*
21 *to show customers the benefit and value that would result from agreeing to allow a*
22 *supplier to provide services beyond strictly defined generation supply, including billing,*
23 *metering and customer service." As I noted, this is a risk free approach, and if the*

1 customer is not satisfied with any aspect of the supplier service he or she may return to
2 the utility or select another supplier for their service needs." Again, my proposal merely
3 creates an opportunity for customer choice. Mr. Bujnowski proposes that choice be
4 restricted or that PP&L make the choice for customers.

5 **Q. DO YOU HAVE ANY FINAL COMMENTS?**

6 A. Yes. I would just like to note that I find it somewhat ironic that PP&L's economic
7 witnesses Dr. Kalt, at page 27 of his testimony, proposes that the EDC should be able to
8 bundle services and yet Mr. Bujnowski would oppose Enron's proposal of agency to
9 allow the offering of a soup-to-nuts service which would allow competitors to bundle
10 services in a similar fashion. Such a proposal is unfair on its face, particularly since it is
11 PP&L not Enron which is the resident monopoly.

12 **Q. DO YOU HAVE ANY COMMENTS REGARDING ANY OTHER WITNESS?**

13 A. Yes. In regard to Mr. Baumann's disagreement with my proposed methodology of first-
14 come-first-serve for residential customers. I believe he misses the point of my testimony.

15 **Q. WHAT WAS THE POINT OF YOUR TESTIMONY IN REGARD TO**
16 **RESIDENTIAL FIRST COME FIRST SERVE METHODOLOGY?**

17 A. My point was that in my opinion the Competition Act requires the first-come-first-serve
18 methodology unless the Commission finds that there is a competitive disadvantage to that
19 method.

- 1 Q. **DID MR. BAUMANN PRESENT EVIDENCE OF A COMPETITIVE**
2 **DISADVANTAGE IN HIS REBUTTAL TESTIMONY IN REGARD TO**
3 **RESIDENTIAL CUSTOMERS?**
- 4 A. No, he did not. Although on page 3 of his rebuttal he indicates reasons why he believes
5 PP&L's approach is preferable, he does not argue that there are any competitive issues
6 between residential customers.
- 7 Q. **IS IT THEREFORE YOUR OPINION THAT YOUR PROPOSED**
8 **METHODOLOGY IN YOUR DIRECT TESTIMONY IS THE METHODOLOGY**
9 **THAT COMPORTS WITH THE STATUTORY REQUIREMENTS?**
- 10 A. Yes it is.
- 11 Q. **WAS THERE ANY OTHER AREA OF YOUR DIRECT TESTIMONY TO**
12 **WHICH REBUTTAL TESTIMONY WAS DIRECTED?**
- 13 A. Yes. PP&L witness Mr. Dahl, at pages 23 and 24, has indicated that alternative
14 suppliers, such as Enron, should share in some of the cost burden of customer assistance
15 programs like the On-Track Program. In fact, in lines 5 through 7 of page 23, he
16 specifically proposes that alternative suppliers should agree to absorb the supply portion
17 of the revenue shortfall that is written off monthly on On-Track customers.
- 18 Q. **ALTHOUGH PROPOSING THAT ALTERNATIVE SUPPLIERS SHOULD BEAR**
19 **A PORTION OF THE COST ASSOCIATED WITH ON-TRACK CUSTOMERS,**
20 **DOES PP&L PROPOSE THAT THE ALTERNATIVE SUPPLIERS' SHARE IN**
21 **ANY OF THE REVENUES ASSOCIATED WITH ON-TRACK CUSTOMER?**
- 22 A. No. To my knowledge, although proposing to have the alternative suppliers bear a
23 portion of the contribution associated with that program, there does not seem to be any
24 willingness by PP&L to share in the revenue associated with the program.

1 Q. DO YOU AGREE WITH THIS PROPOSAL?

2 A. No, I do not.

3 Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

4 A. Yes.

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

DIRECT TESTIMONY OF

DOCUMENT
FOLDER

LYNN R. COLES

ON BEHALF OF
ENRON POWER MARKETING INC.

DOCKET NO. R-00973954
RE: PP&L RESTRUCTURING PLAN

July 2, 1997

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PROTHONOIRY'S OFFICE

DIRECT TESTIMONY OF LYNN R. COLES

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1 **I. INTRODUCTION AND BACKGROUND**

2 Q. **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. Lynn R. Coles, 550 Congressional Boulevard, Suite 290, Carmel, Indiana 46032.

4 Q. **WHAT IS YOUR OCCUPATION?**

5 A. I am an Executive Engineer in the firm of R. W. Beck, Inc.

6 Q. **PLEASE DESCRIBE R. W. BECK, INC.**

7 A. R. W. Beck, Inc. is a corporation of engineers and consultants founded in 1942 for
8 the purpose of rendering professional engineering and consulting services in
9 planning, financing, operating and designing facilities for publicly owned utilities.
10 The Firm employs approximately 500 professional and support personnel to provide
11 these services. Our general office is in Seattle, Washington, and we have offices in
12 ten other cities including Indianapolis.

13 Q. **PLEASE SUMMARIZE YOUR EDUCATION BACKGROUND AND YOUR
14 EXPERIENCE IN THE ELECTRIC UTILITY INDUSTRY.**

15
16 A. I have over 20 years experience in the electric utility industry with a broad range of
17 responsibilities in such areas as research, planning, economic analysis, rate analysis
18 and contract negotiations. Exhibit 7, LRC-1 is a brief summary of my educational
19 background and my general experience in the electric utility industry.

20 Q. **ON WHOSE BEHALF DO YOU APPEAR IN THIS PROCEEDING?**

21 A. I am appearing on behalf of Enron Power Marketing Inc. ("Enron" or "EPMI").

22

1 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

2 A. In my testimony, I will be covering issues related to direct supplier procurement
3 of transmission service, supplier obligation practices including energy balancing
4 and load reconciliation services, supply planning and planning reserve issues, and
5 procedures to ensure reliability. I will present for the Commission's
6 consideration an alternative Pro Forma Supplier Tariff (Exhibit 7, LRC-2) which
7 is intended to define the suppliers' responsibilities in relation to meeting
8 customers' loads and all necessary involvement with the Electric Distribution
9 Company ("EDC").

10 II. DIRECT SUPPLIER PROCUREMENT OF TRANSMISSION SERVICE

11 Q. HOW DO YOU UNDERSTAND "DIRECT ACCESS" AS DEFINED IN
12 THE ELECTRICITY GENERATION CUSTOMER CHOICE AND
13 COMPETITION ACT?

14
15 A. All Pennsylvania consumers should have the right to choose their supplier of
16 electric power and energy. To accomplish this, suppliers should have comparable
17 access to all of the EDC's transmission and distribution facilities. Moreover, I
18 understand the Electricity Generation Customer Choice and Competition Act
19 ("the Competition Act") to allow consumers to choose how and from whom
20 they will obtain their electricity service, such as generation supply and
21 transmission services.

22

1 Q. DOES PP&L SUPPORT AN APPROACH WHERE SUPPLIERS CAN
2 OBTAIN TRANSMISSION SERVICE?

3 A. Yes. On pages 26 and 27 of his direct testimony, Mr. Whitehead explains the
4 procedure for securing retail transmission service. Mr. Whitehead proposes that
5 transmission service be secured by load-serving entities or suppliers acting as
6 agents of the retail access customers. Mr. Whitehead also states that, based on
7 his understanding of the future restructured PJM, that the load-serving entities
8 will procure the transmission service from the Independent System Operator
9 (ISO). I concur with this overall proposed approach which allows Suppliers to
10 obtain transmission service as agents for retail customers. The reliance on the
11 PJM restructuring and ISO and the Open Access tariff structure for retail
12 transmission service also makes sense to me in light of the establishment of
13 interim operating rules and progress in developing a long-term ISO arrangement.

14 Q. WHAT IS YOUR UNDERSTANDING OF HOW A SUPPLIER WILL
15 SUPPLY A CUSTOMER AFTER BEING CHOSEN?
16

17 A. A supplier will arrange for generation, transmission and distribution supply from
18 available resources and providers.

19 Q. HOW WOULD THIS BE ACCOMPLISHED?

20 Suppliers should be allowed to act as agents for customers in procuring
21 transmission service directly through PJM, or through any other method
22 available to them. Customers themselves ought to be able to seek optional

4.2.2 Day-Ahead Weather Correction and other Adjustments to ADLC

If necessary, the EDC will provide to each Supplier by 7:00 am on the day before delivery adjustments of the portion of the ADLC applicable to the Supplier's Customers with monthly billing metering to account for differences between the forecasted weather and the weather-related assumptions used to develop the ADLC. The EDC will also, if necessary, provide to each Supplier: (1) adjustments to reflect termination of service pursuant to applicable Commission regulations of any of the Supplier's Customers with monthly billing metering, and (2) notice that service has been terminated pursuant to applicable Commission regulations of any Customers with continuous hourly metering.

4.2.2.1 The EDC shall cooperate as is necessary to ensure that a Supplier's ADLC accurately reflects specific Customer information. The EDC shall allow a Supplier to propose modifications to its applicable ADLC, and if reasonable, shall modify the ADLC.

4.2.3 Daily Supplier Identification of Source of Supply Scheduling System Control and Dispatch Service

The Supplier will inform the EDC or the Host Control Area, which ever is applicable, at least one day ahead by 10:00 am (or the time as defined in the applicable FERC Open Access Transmission Tariff, whichever is later) of the amount and point of generation of its electric energy that will originate from outside of the respective control areas, and of the amount and point of generation of its electric energy that will originate within the respective control area.

4.2.4 Supplier Supply Obligation

The Supplier will supply in each hour the amount of electric energy specified by its adjusted ADLC, and will be obligated to provide to the EDC or Host Control Area, whichever is applicable, on a monthly basis (or on a more frequent basis in accordance with, and only to the extent necessary to comply with current interchange requirements) hourly metering data or other proof sufficient to verify title to and generation and/or delivery of the amount of energy specified by the Supplier's Adjusted ADLC.

To the extent a Supplier has installed and pays for the necessary metering and telecommunications equipment for actual load following, a Supplier may follow such Customers' loads on a real-time basis.

4.2.5 Energy Imbalance Service

The EDC or Host Control Area, whichever is applicable, will supply on a real-time basis any amount of energy that is necessary due to differences between the amounts supplied and/or delivered by a Supplier and the amounts consumed by the Supplier's Customers through the applicable FERC Open Access Transmission Tariff. The EDC or Host Control Area will also absorb any amounts of electric energy that constitute oversupply by a Supplier. A Supplier will pay for undersupply, and the EDC or ISO will pay for oversupply according to the FERC Open Access Transmission Tariff.

4.2.6 Other Ancillary Services

The EDC or Host Control Area will provide to all Suppliers all necessary ancillary services for transmission service, in accordance with the applicable FERC Open Access Transmission Tariff.

4.3 Supplier/EDC Required Payments and Schedule of Rates

4.3.1 Penalty for Failure to Supply ADLC

To the extent that a Supplier's total hourly deliveries in any hour are not within 10% of the Supplier's adjusted ADLC, the Supplier shall pay to the ISO or EDC a 10% penalty per kWh above the prevailing Wholesale Hourly Market Clearing Price.

4.3.2 Payments for Energy Imbalance Service

4.3.2.1 For Customers with Monthly Billing Metering. The EDC will estimate a Supplier's electric on-peak and off-peak mismatch between delivered and actual electric energy used based on typical load curves for like customers. The service will notify Suppliers 5 days after the end of the month of the quantities of mismatch and the average monthly cost of off-peak and on-peak energy for that period based on the wholesale hourly market clearing price for energy. Suppliers will have two weeks to trade and swap under and over on-peak and off-peak quantities. After the two week period, Suppliers are responsible to pay for the remaining applicable energy charges.

4.3.4.2 For Customers with Continuous Hourly Metering.

Under delivery:

Under delivery will have been handled under the provision of the applicable FERC Open Access Transmission Tariff.

Over delivery:

Oversupply will have been handled under the provisions of the applicable FERC Open Access Transmission Tariff.

4.3.3 Definition of Wholesale Hourly Market Clearing Price

The Wholesale Hourly Market Clearing Price shall mean the Host Control Area's definition of the Market Clearing Price.

4.3.4 Payments for other Ancillary Services

The EDC or Host Control Area shall charge the Supplier for all Ancillary Services supplied according to the applicable FERC Open Access Transmission Tariff.

4.4 Customer Change of Address

If a Customer moves to another location in the EDC's service territory, the Customer may continue to receive Service from the Supplier at the Customer's new address.

4.5 Billing, Metering, and Collection

Suppliers shall be responsible for billing all services to the Customer, including the EDC's charges for Energy Delivery Service, Transmission Service, Ancillary Services and other related services, unless the Supplier elects: (1) to have the EDC bill its charges separately to the Customer or (2) to have the EDC bill all charges including all of the Supplier's charges.

In the event that Supplier elects to have the EDC act as an agent for a Supplier, and include a Supplier's charges to a Customer, the Supplier shall pay the EDC monthly billing fee pursuant to Schedule __. If the EDC bills for a Supplier, then the EDC will remit to the Supplier all charges collected from Customers for the Suppliers' services net of any amounts owed the EDC by the Supplier. If the payment made by a Customer for whom the EDC is providing billing is less than the total owed, the EDC will pro-rate the funds among the EDC and the Suppliers and distribute the funds to the Supplier.

The EDC will perform collection functions for Suppliers with respect to those Customers for whom or which the EDC is including the Supplier's charges on the EDC's bill. If a

Customer switches to another Supplier, then the EDC will not perform any collection functions with respect to any balance owed to the previous Supplier.

The EDC will not perform collection functions for Suppliers that are separately billing Customers, except that the EDC will, in appropriate circumstances, physically terminate a Customer, in accordance with the provisions set forth below.

4.6 Notice of Defaulting Customer

Upon the provision of a sworn affidavit by a Supplier that the Supplier has complied with all applicable Commission regulations and rules applicable to a defaulting customer and the Customer is still being served by the Supplier, the EDC will shift off service to the Customer as soon as possible.

4.7 Limitations on Liability

The EDC shall not be liable for any loss, cost, damage, or expense, whether direct or consequential, caused by the EDC's calculation of the ADLC. The EDC shall have no liability with respect to any electric energy before it is delivered by a Supplier to a point of delivery on the EDC's System or after is delivered to Customers.

In addition, the EDC shall have no liability or duty to a Supplier arising out of an agreement or relationship between a Supplier and a Customer.

1 between a suppliers' monthly actual deliveries and the customers actual monthly
2 energy metered amounts.

3 Q. WHAT WOULD YOU SUGGEST AS A METHOD FOR HANDLING
4 SUPPLIER OBLIGATION, ENERGY BALANCING AND LOAD
5 RECONCILIATION?
6

7 A. I propose that all energy imbalance services be provided by PJM, or the future
8 ISO, or some other supplying entity. These services are now provided and cost-
9 shared among utility participants in PJM per existing pool and interchange
10 agreements. Furthermore, FERC has explicitly provided for scheduling, dispatch
11 and control and energy imbalance services for wholesale and state-authorized
12 retail transactions as part of Open Access transmission tariffs. These
13 arrangements provide the foundation for energy imbalance service to Suppliers
14 and customers under Pennsylvania's retail access.

15 For customers served with hourly metering in place, the energy imbalance
16 service under Open Access tariffs is directly applicable and is really no different
17 from ongoing wholesale transactions. There is no need for PP&L to supply
18 duplicate energy balancing service under different rules and conditions.

19 For suppliers delivering to customers with only monthly energy meters,
20 the methodology used in Open Access tariffs is not easily applied because of the
21 greater uncertainty of daily load shapes. For these customers, until improved
22 metering is installed, I would propose a load estimating method and settlement
23 mechanism done in conjunction with the EDC. The EDC should calculate and

1 provide each supplier with an Aggregate Daily Load Curve ("ADLC") each
2 month based on the EDC's knowledge of these customers' load shapes and the
3 customers that the Supplier serves. The EDC will further provide each Supplier
4 by 7:00 a.m. on the day before delivery, an adjusted ADLC to account for the
5 differences between the forecasted weather and the weather-related assumptions
6 used to develop the ADLC. The weather adjusted ADLC daily load shape
7 becomes the suppliers' obligation to deliver to these customers and would
8 schedule supplies to meet these delivery obligations to customers. Under such an
9 approach, the energy balancing function for these monthly metered customers
10 becomes much simpler and there is no need to estimate actual hourly load
11 mismatches after the fact. Once a month, the EDC would use monthly actual
12 metered loads to calculate and pro rate the estimated difference between delivered
13 amounts and estimated actual loads in terms of on-peak and off-peak energy. The
14 EDC would notify each Supplier of its on-peak and off-peak mismatches "totals
15 and costs" and each Supplier could seek to trade over and under amounts with
16 other Suppliers. Such a market settlement mechanism will provide an incentive
17 to minimize the costs of these mismatches.

18 Q. DO YOU HAVE ANY OTHER COMMENTS ON SUPPLIER
19 OBLIGATIONS, ENERGY BALANCING AND LOAD
20 RECONCILIATION?
21

22 A. I believe the Pro Forma Supplier Tariff presented as Exhibit 7, LRC-2 provides
23 a good starting point to discuss these issues.

1

2

IV. SUPPLY PLANNING AND PLANNING RESERVES ISSUES

3

Q. PLEASE COMMENT ON PP&L WITNESS TESTIMONY ON SUPPLY PLANNING AND RESERVES.

4

5

6

A. Mr. Jones, in response to interrogatories of the Office of Small Business

7

Advocate responded that generation planning "will be carried out in the same

8

manner that planning is conducted in other competitive markets." He says that

9

information available to planners, including material from the ISO, will be

10

considered by individual competitors regarding business needs and desires. The

11

expectation of higher prices will provide the generation capacity needed.

12

Mr. Kalt, on page 10 of his testimony on policy issues states that restructuring

13

should "rely on market forces to establish the price, mix and performance

14

characteristics of power production and capacity." Mr. Whitehead, on page 8,

15

lines 1-4, of his direct testimony discusses reserves and states that " All load-

16

serving entities will likely be required to maintain sufficient generation reserves,

17

and be willing to share those reserves in an emergency." I generally concur with

18

Mr. Jones and Mr. Kalt and believe that traditional generation planning will cease

19

and the competitive marketplace with price signals will provide sufficient

20

capacity to meet customer needs. However, the topic of sufficient reserves needs

21

further elaboration to distinguish the difference between planning reserves and

22

operating reserves.

1 Q. WHAT ARE PLANNING RESERVES AND WHAT IS THE HISTORY
2 AND BASIS FOR ESTABLISHING RESERVE REQUIREMENTS?

3
4 A. Planning reserves are generation amounts above expected load levels that are
5 required of each utility to provide the added capability needed for unit forced
6 outages, planned outages and derates, for load growth beyond expected, and for
7 unforeseen weather. Power pools such as PJM have found it economic to have
8 shared reserve responsibility, and use a percentage planning reserve requirement
9 rather than having each utility provide its own reserves. Planning reserve levels
10 are based on a statistical calculation that sheds some light on the overall
11 reliability of the region. Typically, the standard measure of reliability — the loss
12 of load probability criteria — is loss of the ability to serve load of one day in ten
13 years due to generation shortages. Thus, planning reserves have provided
14 statistically-based general guidance to regions on the approximate amount of
15 generation supply needed to maintain reliability.

16 Q. WHAT ARE OPERATING RESERVES AND WHAT ROLE DO THEY
17 CURRENTLY PLAY IN RELIABILITY?

18
19 A. Operating reserves are different from planning reserves in that they are called
20 upon in daily operation of the system to maintain sufficient supply to match
21 loads. Power pools and other transmission providers consolidate the need for
22 operating reserves and typically provide both spinning and non-spinning reserves
23 which are called upon to replace generation units that are forced out of service
24 or for other loss of supply or increased load. Spinning reserves typically consist

1 of partially loaded generation that can be ramped up to meet the added
2 requirement. These spinning reserves are supplemented with non-spinning
3 reserves, which are units that can be started in 10 minutes to provide additional
4 reserves should they be needed. Different power pools calculate these types of
5 operating reserves slightly differently and use operating reserves to provide the
6 day-to-day reliability needed to serve customers. The FERC, as part of its Open
7 Access Order 888, recognized the importance of these reserves by requiring
8 transmission providers to offer, and transmission customers to purchase, spinning
9 reserves and supplemental reserves as part of ancillary services associated with
10 transmission transactions.

11 **Q. WILL RESTRUCTURING PENNSYLVANIA'S ELECTRIC INDUSTRY**
12 **REQUIRE A DIFFERENT ROLE FOR PLANNING RESERVES? MORE**
13 **SPECIFICALLY, WILL THE IMPLEMENTATION OF PLANNING**
14 **RESERVES BE AFFECTED?**

15
16 **A.** Planning reserves have played an important role in traditional utility practice
17 where a utility had a franchised service territory and had a reasonable obligation
18 to provide generation to serve that load in a reliable manner over time. Long-
19 term load forecasts of load growth were conducted, and if necessary, new
20 generation supply options were evaluated both for reliability and cost. Under
21 a restructured industry, the traditional planning process will no longer be
22 applicable. Customer choice implies that service territories and loads are no
23 longer certain beyond specific contract obligations. Rather than perform
24 extensive forecasts, as available generation resources are reduced, the price of

1 generation will rise, thereby creating an incentive for new plants to be planned
2 and constructed. This market-based price signal and resulting market response
3 will replace the concept of planning reserves and traditional planning.

4 I believe the marketplace will provide a better allocation of risk and
5 reward and be much more efficient than traditional planning. The marketplace
6 can respond to more than simple variations in load and generation outages. For
7 example, there will be a closer ability to meet the reliability needs of specific
8 customers who may require lower reliability at lower cost. The electricity
9 marketplace is developing new tools such as hedges and swaps which can reduce
10 the financial and supply risks to an acceptable level without use of planning
11 reserves. Finally, the three broad options for power supply remain. These are
12 (1) buying from the pool spot market, (2) gaining bilateral arrangements for
13 secure supply, or (3) owning generation. Suppliers can use these options to
14 provide the customer-driven reliability needed for generation.

15 **Q. COULD YOU PROVIDE A SUMMARY DISCUSSION OF PLANNING**
16 **AND OPERATING RESERVES?**

17 **A.** Traditional utility planning with locked-in service territories and captive
18 customers made sense in past years, but is wrong for a restructured electricity
19 marketplace. Suppliers should not be asked to provide long term forecasts of
20 load and supply and an allocated margin of generating supply for planning
21 reserves. Suppliers will not know their load requirements with sufficient
22 accuracy to do this. The free marketplace, with appropriate price signals and

1 financial and contractual tools will substitute for the traditional planning
2 reserves.

3 Operating reserves have always been the method to ensure reliability.
4 Methods and rules for determining and obtaining adequate operating supplies are
5 well developed and handled by pools and reliability councils. These rules should
6 cover a large area and broadly cover all Suppliers with similar requirements. The
7 implementation of special rules for certain suppliers or for some local areas is
8 counterproductive and can reduce the benefits of a free marketplace.

9 V. PROCEDURES TO ENSURE RELIABILITY

10 Q. DO YOU HAVE COMMENTS ON MR. WHITEHEAD'S TESTIMONY ON
11 HOW TO ENSURE RELIABILITY?

12
13 A. Yes. Mr. Whitehead summarized the role of PJM in implementing NERC and
14 MAAC reliability guidelines to include (1) reliability of the transmission system
15 to withstand loss of a single system component, (2) real-time control to meet
16 customers demands, (3) short-term planning of generation supply, and (4) long-
17 term planning of supply with sharing of reserves. However, Mr. Whitehead fails
18 to discuss how the competitive generation marketplace will impact the need for
19 planning reserves.

20 The reliability paradigm is changing. The vertically integrated utility
21 provided reserves necessary for reliability as determined by company
22 management and/or regional reliability councils. The new paradigm is that the

1 ISO will provide reliability for the transmission grid and associated transactions
2 on the grid and the chosen supplier will be responsible for meeting the
3 customer's needs for generation reliability.

4 **Q. WHAT APPROACH SHOULD THE COMMISSION USE TO ENSURE**
5 **ADEQUATE RELIABILITY OF GENERATION SUPPLY?**

6
7 A. I believe that the Commission should support the role of the North American
8 Electric Reliability Council ("NERC") and the two reliability councils in
9 Pennsylvania, the Mid-Atlantic Area Council ("MAAC") and the East Central
10 Reliability Coordination Agreement ("ECAR") in assuring adequate supplies, and
11 that as a condition of being licensed in the state, all eligible Suppliers should
12 belong to at least one of these reliability councils and agree to abide by the
13 operating reliability standards established by them. This will place all generation
14 suppliers on a level playing field to compete for customers under the same rules.

15 The Commission should also recognize that the traditional planning
16 activities, including the establishment of generation planning reserves, long term
17 individual utility forecasts and other components of traditional utility planning
18 will need to be modified. After a transition period, planning reserves should not
19 be mandated and free market forces will provide the adequate supply in the
20 marketplace. The Commission should also recognize that the responsibility for
21 maintaining generation operating reserves and for operating a reliable
22 transmission grid rests with the ISO or other independent party. No planning

1 or operating reserves beyond NERC, MAAC or ECAR requirements should be
2 mandated by the Commission.

3 The Commission should play an active role in monitoring NERC, MAAC
4 and ECAR reliability rules and modifications and their applicability to Suppliers'
5 and customers' needs in Pennsylvania. All participants should be given the
6 chance to provide adequate input to the process.

7 Q. WHAT IS AN APPROPRIATE TRANSITION PERIOD OVER WHICH
8 TO EXPECT CHANGES IN NERC AND RELIABILITY COUNCIL
9 RESERVE CRITERIA TO OCCUR?

10
11 A. The length of the transition period to reflect changes in NERC and regional
12 reliability councils is difficult to forecast. A key uncertainty is the length of
13 time it takes for other states in the region to allow retail access. Thus, I am not
14 able to project the length of the transition period.

15 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

16 A. Yes.

17

18

19

Educational Background:

Bachelor of Science Degree in Electrical Engineering - University of North Dakota

Masters Degree in Electrical and Electronics Engineering - North Dakota State University

MBA - University of Saint Thomas

Professional Registration:

Registered as a Professional Engineer in the States of Minnesota and Missouri

Professional Societies:

Member - Institute of Electrical and Electronic Engineers

Experience:

- 1996-Present An Executive Engineer with R. W. Beck, Inc. Project Manager for studies of transmission and power supply for municipal, cooperative and other energy sector participants. Conducted reviews of Order 888 rate filings, developed a manual for design of ancillary service rates, assisted clients in rate settlement negotiations, and analyzed proposed mergers. Analyzed and compared proposals for Independent System Operators. Prepared testimony and testified and FERC hearings.
- 1987-1997 Principal Policy Advisor at the National Renewable Energy Laboratory. Led federal governmental research efforts on emerging technologies and related utility power systems issues. Supervised engineers and analysts in efforts to identify system impacts of renewable and other emerging energy technologies. Participated in industry-led research in the economic and technical aspects of distributed generation including impacts on utility transmission and distribution systems.
- 1980-1987 Associate with R. W. Beck and Associates. Conducted power supply and transmission studies, prepared engineering studies for facility financings, developed contracts for new power supply arrangements, and represented public power clients in transmission cost-sharing negotiations.

- 1976-1980 Planning engineer with Northern States Power Company. Conducted power flow and stability technical studies in the upper Midwest. Developed cost-sharing approaches for ownership sharing of 345 kV transmission facilities.
- 1974-1976 Planning engineer with Stanley Consultants, Inc. Conducted power supply, rate, and transmission planning studies for various municipal and cooperative utility clients.

ENRON POWER MARKETING INC.

ELECTRIC GENERATION SUPPLIER TARIFF

Purpose of the Tariff

This tariff is applicable to Electric Generation Suppliers ("Suppliers") that are responsible for supplying all or a portion of the electric power and energy requirements of Customers connected to the Electric Distribution Company ("EDC") and sets forth the respective rights and obligations of the Supplier and the EDC.

1. Definitions

Commission - The Pennsylvania Public Utility Commission.

Control Area - A defined system of generation, transmission and other electric facilities and loads in which the Control Area operator is responsible for ensuring that loads and interchange transactions are served in a reliable manner. For PP&L, PJM is the control area.

Customers - end-use customers who consume electric power and energy.

EDC - Electric Distribution Company

Electric Generation Supplier - A potential or actual supplier of electric power and/or energy. An eligible electric supplier is one whom meets Commissioner criteria and is licensed to supply electric energy to Customers.

ISO - Independent System Operator

Transmission Provider - Any and all transmitting utilities from which the supplier has arranged.

Host Control Area - The EDC, or if the EDC does not act at the Control Area, the appropriate Control Area for the Customer's load.

2. Energy Delivery Service by the Electric Distribution Company ("EDC")

The EDC will transmit and distribute for Suppliers from any point of receipt available to the EDC under the EDC's Open Access Transmission Tariff, or any current or successor applicable Tariff filed with the Federal Energy Regulatory Commission ("FERC"). Suppliers will be responsible for procuring and paying for transmission service, in amounts

and to the extent any is necessary, for the transmission of electric energy from the point of generation to a point of receipt on the EDC's system.

3. Conditions

3.1 Execution of Supplier Agreement Form

The Supplier must execute a Supplier Agreement Form with the EDC, which indicates the Supplier's agreement to abide by the provisions contained in the Electric Generation Supplier Tariff. See Appendix A.

3.2 Supplier License

The Supplier must have obtained a license from the Commission to participate as a Supplier and has agreed to pay all applicable taxes.

3.3 Standards of Conduct

3.3.1 Suppliers shall be subject to penalty for falsely affirming the existence of operating capabilities and/or minimum financial strength.

3.3.2 Suppliers shall not release confidential Customer information (related to energy usage) except to the EDC to provide reliable service, or unless released by a signed form by the Customer, or unless ordered from a legal authority.

3.4 Provision of Customer Consent Information

The Supplier will be obligated to provide to the EDC proof of the Customer's consent at least seven (7) days before delivery to those Customers may commence.

3.5 Transmission Rights Outside the Control Area

The Supplier must document and demonstrate to Host Control Area that the Supplier has obtained the right to use any necessary transmission facilities to move from any point of extend generation to a point of delivery within the Control Area.

4. Rules/Other Obligations

4.1 Duty to Cooperate

The Supplier shall be obligated to cooperate with the EDC or Host Control Area and to adhere fully to any emergency directives that the EDC Host Control Area may issue to ensure and preserve system integrity.

4.2 Supply Procedures and Obligations

The following procedures, with its attendant obligations, will be followed with respect to the supply provided by Suppliers and the transmission, distribution, and coordination of that supply by the EDC:

4.2.1 Provision of Aggregated Daily Load Curve

Each Supplier will be provided on a monthly basis an Aggregated Daily Load Curve ("ADLC") for its Customers by the EDC.

The ADLC will specify the amount of energy the Supplier will be obligated to supply in each hour of the month. The EDC will develop the ADLC as follows:

4.2.1.1 For Customers with monthly billing metering, the EDC will use standard load curves (available upon request), together with the total monthly usage from the applicable billing month provided by the EDC in the previous calendar year, to develop load profiles. The EDC will adjust the hourly totals upward by an amount necessary to cover line losses based on standard line loss percentages for the customer class to which each Customer belongs.

4.2.1.2 For all other Customers, the Supplier's monthly ADLC will contain a placeholder for the hourly delivery obligation for the Supplier's Customers with continuous hourly billing metering. The Supplier will be obligated to provide to the Host Control Area by 10:00 a.m. at least one day ahead a nominated load curve for such Customers. Such nomination should account for line losses using standard line loss percentages for the applicable deliver voltage level for the Customer.

4.2.2 Day-Ahead Weather Correction and other Adjustments to ADLC

If necessary, the EDC will provide to each Supplier by 7:00 am on the day before delivery adjustments of the portion of the ADLC applicable to the Supplier's Customers with monthly billing metering to account for differences between the forecasted weather and the weather-related assumptions used to develop the ADLC. The EDC will also, if necessary, provide to each Supplier: (1) adjustments to reflect termination of service pursuant to applicable Commission regulations of any of the Supplier's Customers with monthly billing metering, and (2) notice that service has been terminated pursuant to applicable Commission regulations of any Customers with continuous hourly metering.

4.2.2.1 The EDC shall cooperate as is necessary to ensure that a Supplier's ADLC accurately reflects specific Customer information. The EDC shall allow a Supplier to propose modifications to its applicable ADLC, and if reasonable, shall modify the ADLC.

4.2.3 Daily Supplier Identification of Source of Supply Scheduling System Control and Dispatch Service

The Supplier will inform the EDC or the Host Control Area, which ever is applicable, at least one day ahead by 10:00 am (or the time as defined in the applicable FERC Open Access Transmission Tariff, whichever is later) of the amount and point of generation of its electric energy that will originate from outside of the respective control areas, and of the amount and point of generation of its electric energy that will originate within the respective control area.

4.2.4 Supplier Supply Obligation

The Supplier will supply in each hour the amount of electric energy specified by its adjusted ADLC, and will be obligated to provide to the EDC or Host Control Area, whichever is applicable, on a monthly basis (or on a more frequent basis in accordance with, and only to the extent necessary to comply with current interchange requirements) hourly metering data or other proof sufficient to verify title to and generation and/or delivery of the amount of energy specified by the Supplier's Adjusted ADLC.

To the extent a Supplier has installed and pays for the necessary metering and telecommunications equipment for actual load following, a Supplier may follow such Customers' loads on a real-time basis.

4.2.5 Energy Imbalance Service

The EDC or Host Control Area, whichever is applicable, will supply on a real-time basis any amount of energy that is necessary due to differences between the amounts supplied and/or delivered by a Supplier and the amounts consumed by the Supplier's Customers through the applicable FERC Open Access Transmission Tariff. The EDC or Host Control Area will also absorb any amounts of electric energy that constitute oversupply by a Supplier. A Supplier will pay for undersupply, and the EDC or ISO will pay for oversupply according to the FERC Open Access Transmission Tariff.

4.2.6 Other Ancillary Services

The EDC or Host Control Area will provide to all Suppliers all necessary ancillary services for transmission service, in accordance with the applicable FERC Open Access Transmission Tariff.

4.3 Supplier/EDC Required Payments and Schedule of Rates

4.3.1 Penalty for Failure to Supply ADLC

To the extent that a Supplier's total hourly deliveries in any hour are not within 10% of the Supplier's adjusted ADLC, the Supplier shall pay to the ISO or EDC a 10% penalty per kWh above the prevailing Wholesale Hourly Market Clearing Price.

4.3.2 Payments for Energy Imbalance Service

4.3.2.1 For Customers with Monthly Billing Metering. The EDC will estimate a Supplier's electric on-peak and off-peak mismatch between delivered and actual electric energy used based on typical load curves for like customers. The service will notify Suppliers 5 days after the end of the month of the quantities of mismatch and the average monthly cost of off-peak and on-peak energy for that period based on the wholesale hourly market clearing price for energy. Suppliers will have two weeks to trade and swap under and over on-peak and off-peak quantities. After the two week period, Suppliers are responsible to pay for the remaining applicable energy charges.

4.3.4.2 For Customers with Continuous Hourly Metering.

Under delivery:

Under delivery will have been handled under the provision of the applicable FERC Open Access Transmission Tariff.

Over delivery:

Oversupply will have been handled under the provisions of the applicable FERC Open Access Transmission Tariff.

4.3.3 Definition of Wholesale Hourly Market Clearing Price

The Wholesale Hourly Market Clearing Price shall mean the Host Control Area's definition of the Market Clearing Price.

4.3.4 Payments for other Ancillary Services

The EDC or Host Control Area shall charge the Supplier for all Ancillary Services supplied according to the applicable FERC Open Access Transmission Tariff.

4.4 Customer Change of Address

If a Customer moves to another location in the EDC's service territory, the Customer may continue to receive Service from the Supplier at the Customer's new address.

4.5 Billing, Metering, and Collection

Suppliers shall be responsible for billing all services to the Customer, including the EDC's charges for Energy Delivery Service, Transmission Service, Ancillary Services and other related services, unless the Supplier elects: (1) to have the EDC bill its charges separately to the Customer or (2) to have the EDC bill all charges including all of the Supplier's charges.

In the event that Supplier elects to have the EDC act as an agent for a Supplier, and include a Supplier's charges to a Customer, the Supplier shall pay the EDC monthly billing fee pursuant to Schedule __. If the EDC bills for a Supplier, then the EDC will remit to the Supplier all charges collected from Customers for the Suppliers' services net of any amounts owed the EDC by the Supplier. If the payment made by a Customer for whom the EDC is providing billing is less than the total owed, the EDC will pro-rate the funds among the EDC and the Suppliers and distribute the funds to the Supplier.

The EDC will perform collection functions for Suppliers with respect to those Customers for whom or which the EDC is including the Supplier's charges on the EDC's bill. If a

Customer switches to another Supplier, then the EDC will not perform any collection functions with respect to any balance owed to the previous Supplier.

The EDC will not perform collection functions for Suppliers that are separately billing Customers, except that the EDC will, in appropriate circumstances, physically terminate a Customer, in accordance with the provisions set forth below.

4.6 Notice of Defaulting Customer

Upon the provision of a sworn affidavit by a Supplier that the Supplier has complied with all applicable Commission regulations and rules applicable to a defaulting customer and the Customer is still being served by the Supplier, the EDC will shift off service to the Customer as soon as possible.

4.7 Limitations on Liability

The EDC shall not be liable for any loss, cost, damage, or expense, whether direct or consequential, caused by the EDC's calculation of the ADLC. The EDC shall have no liability with respect to any electric energy before it is delivered by a Supplier to a point of delivery on the EDC's System or after is delivered to Customers.

In addition, the EDC shall have no liability or duty to a Supplier arising out of an agreement or relationship between a Supplier and a Customer.

APPENDIX A

Supplier Agreement Form

This agreement (this "Agreement") is made this _____ day of _____, 199__, by and between [Name of Electric Generation Supplier] and [Name of Electric Distribution Company] (collectively referred to as the "Parties").

WHEREAS:

A. The EDC is the local electric distribution company which will provide delivery service; and,

B. [Name of Electric Generation Supplier] has been licensed as a Supplier that may sell electric energy to Customers and Electric Generation Supplier has or will have entered into contracts for electric energy supply with some of those Customers.

NOW THEREFORE, in consideration of these premises and the facts and mutual promises set forth herein, and intending to be legally bound hereby, the parties hereby agree as follows:

1. [Name of EDC] will provide Electric Delivery Service to Customers served by Electric Generation Supplier.

2. Electric Generation Supplier hereby agrees to comply with all of the terms and conditions including, but not limited to, the terms and conditions set forth in the section entitled, "Supplier Rights and Obligations."

IN WITNESS WHEREOF, and intending to be legally bound, the Parties have caused this Agreement to be executed as of the day and year first above written.

[Name of EDC]

Attest:

By: _____

Name:

Name:

Title:

Title:

[Name of Electric Generation Supplier]

Attest:

By: _____

Name:

Name:

Title:

Title:



PJM RETAIL CHOICE INFORMATION SYSTEM

The PJM Office of the Interconnection has established a retail choice project to enable participants in the PJM energy market to conduct business under Pennsylvania's retail choice pilot program. The Electric Generation Customer Choice and Competition Act signed into law by Governor Ridge on December 3, 1996 offers retail choice to five percent of Pennsylvania customers starting October 1, 1997. Retail choice will be offered in stages to one-third of all customers in 1999, 2000, and 2001, resulting in all Pennsylvania customers having retail choice of generation in the competitive market.

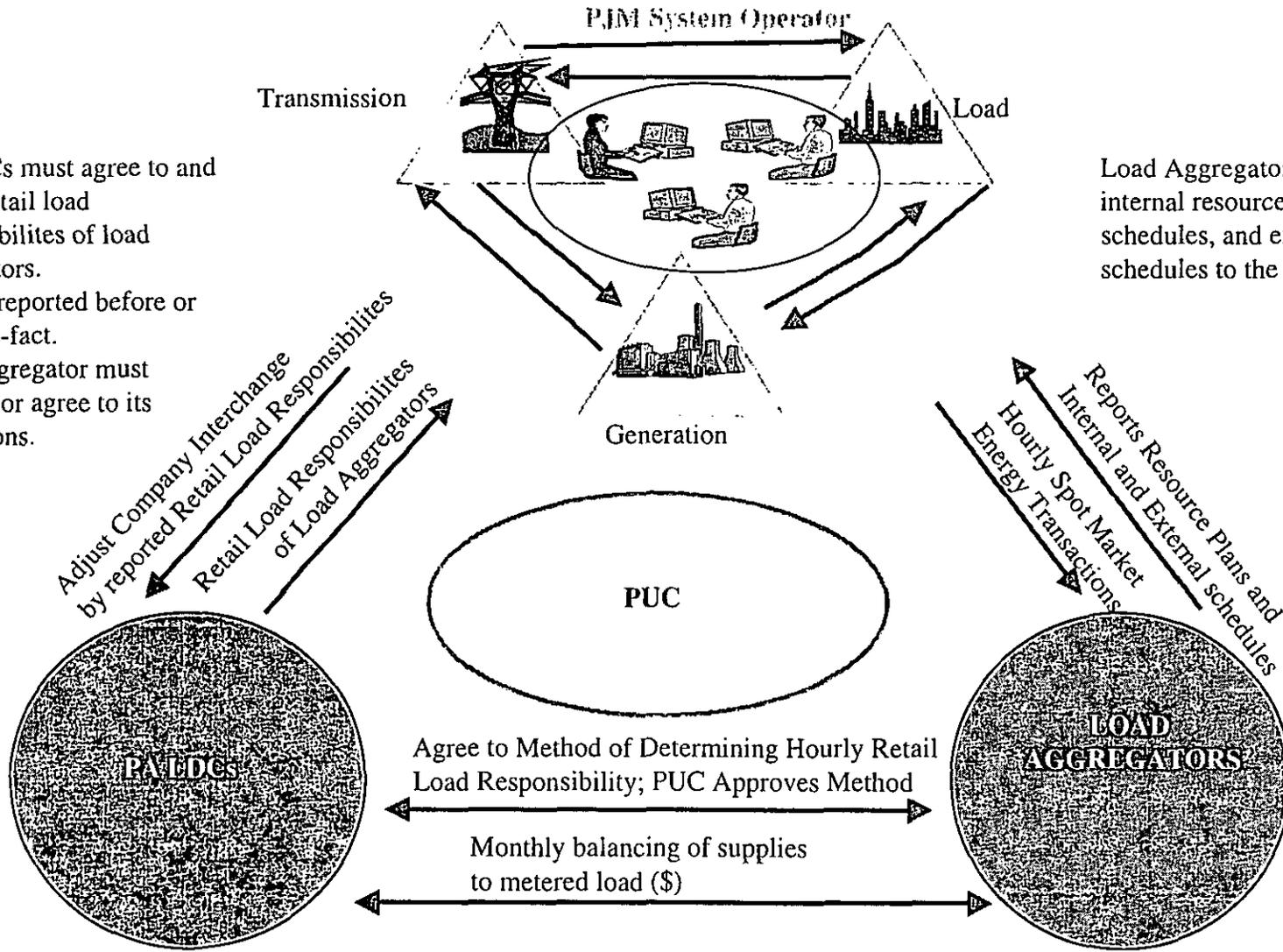
The information system under development by PJM will offer an Internet-based method for load distribution companies (LDCs) and load aggregators to provide and obtain information needed to conduct business under the retail choice initiative. The Retail Choice Information System, which will become operational on October 1, 1997, is being developed by PJM in coordination with LDCs and other PJM market participants.

For information about the PJM Retail Choice Information System, contact the Project Manager, Tom Woollam by e-mail at woollamtb@pjm.com.

- **Retail Choice** - the concept, legislation, rules, guidelines, and assumptions under which *load aggregators* of energy may provide (sell) energy to customers in the service territory of *local distribution companies* (LDCs).
- **Load Aggregator** - the licensed entity which may provide (sell) energy to customers within the service territory of a *local distribution company* (LDC).
- **Local Distribution Company** - the company in whose service territory, energy to customers on its distribution system, is being sold by the *load aggregators*.
- **Retail Load Responsibility** - the agreed upon hourly load, within the service territory of the *local distribution company* for which the *load aggregator* must provide energy to customers.

PA LDCs must agree to and report retail load responsibilities of load aggregators. May be reported before or after-the-fact. Load aggregator must confirm or agree to its obligations.

Load Aggregator must report internal resources, internal schedules, and external schedules to the OI.

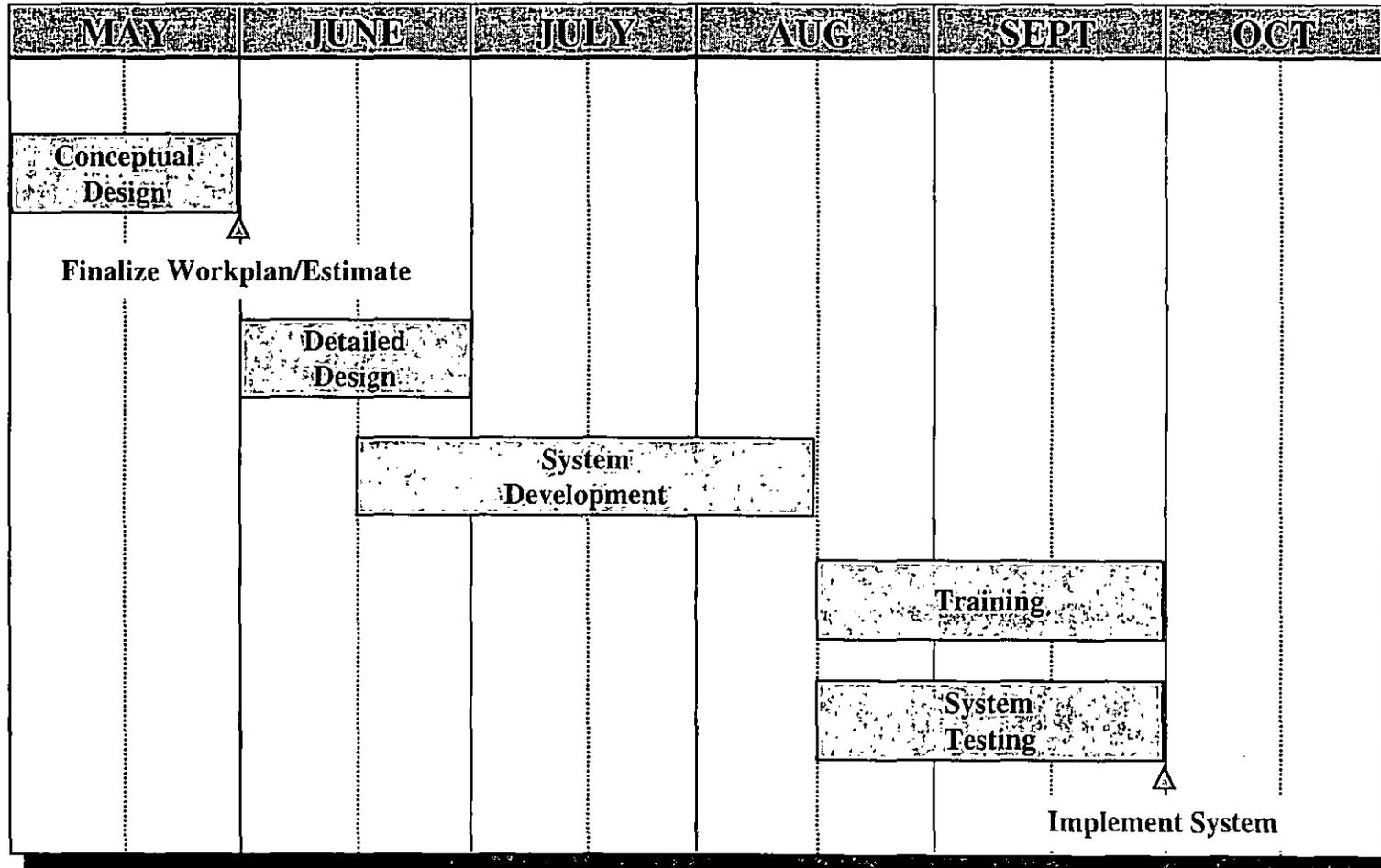


Assumptions for LDCs

- LDCs will be billed for the following charges attributable to its service territory:
 - Transmission charges
 - Congestion charges
 - Losses
 - Inadvertent interchanges
 - Ancillary services
- LDCs will be responsible for monthly reconciliation of hourly retail load responsibilities vs. metered usage with load aggregators. This process will be transparent to the OI.
- Load aggregators' transactions will be covered under network service taken out by the LDCs and therefore, will not require transmission reservations.

Assumptions for the OI

- More information will be required from the OI by the LDCs and load aggregators than is currently provided. This includes, but is not limited to:
 - Hourly data that was used to calculate adjusted interchange
 - Spot market and bilateral schedule information
- An Internet application will be developed to input, update, and confirm load aggregators' hourly retail load responsibility transactions.
- External transactions can be handled as they are today and input/confirmed through the appropriate systems.



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Enron St. 7.1

8/22/97
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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

SURREBUTTAL TESTIMONY OF

DOCKETED
AUG 26 1997

LYNN R. COLES

ON BEHALF OF
ENRON POWER MARKETING INC.

DOCKET NO. R-00973954
RE: PP&L RESTRUCTURING PLAN

August 15, 1997

SURREBUTTAL TESTIMONY OF LYNN R. COLES

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1 **SURREBUTTAL**

2 **I. INTRODUCTION AND BACKGROUND**

3 Q. **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

4 A. Lynn R. Coles, 550 Congressional Boulevard, Suite 290, Carmel, Indiana 46032.

5 Q. **WHAT IS YOUR OCCUPATION?**

6 A. I am an Executive Engineer in the firm of R. W. Beck, Inc.

7 Q. **PLEASE DESCRIBE R. W. BECK, INC.**

8 A. R. W. Beck, Inc. is a corporation of engineers and consultants founded in 1942 for the purpose
9 of rendering professional engineering and consulting services in planning, financing, operating
10 and designing facilities for publicly owned utilities. The Firm employs approximately 500
11 professional and support personnel to provide these services. Our general office is in Seattle,
12 Washington, and we have offices in ten other cities including Indianapolis.

13 Q. **PLEASE SUMMARIZE YOUR EDUCATION BACKGROUND AND YOUR
14 EXPERIENCE IN THE ELECTRIC UTILITY INDUSTRY.**

15 A. I have over 20 years experience in the electric utility industry with a broad range of
16 responsibilities in such areas as research, planning, economic analysis, rate analysis and contract
17 negotiations.

18 Q. **HAVE YOU PROVIDED TESTIMONY PREVIOUSLY IN THIS PROCEEDING?**

19 A. Yes. I submitted testimony in this case on July 2, 1997. Enron St. No. 7.

20 Q. **ON WHOSE BEHALF DO YOU APPEAR IN THIS PROCEEDING?**

21 A. I am appearing on behalf of Enron Power Marketing Inc. ("EPMI").

22 Q. **WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

1 A. I respond to the rebuttal testimonies of Mr. William H. Whitehead and Mr. Joseph Schadt
2 on reliability and PJM-related comments and the testimony of Joseph M. Kleha on the
3 handling of customers with and without hourly meters. Among other matters, I will address
4 (1) reliability standards enforcement, (2) PP&L's discussion of customers with hourly
5 supply meters, and (3) PP&L proposed handing of customers without hourly supply meters..

6
7 **II. RELIABILITY STANDARDS ENFORCEMENT**

8 Q. **IN MR. WHITEHEAD'S REBUTTAL TESTIMONY, HE STATES THAT YOUR**
9 **POSITION IN DIRECT TESTIMONY IS THAT NERC AND MAAC**
10 **STANDARDS SHOULD BE ENFORCED BY THESE ORGANIZATIONS AND**
11 **NOT THE PJM ISO. COULD YOU CLARIFY YOUR POSITION WITH**
12 **REGARDS TO MR. WHITEHEAD'S COMMENTS?**

13
14 A. Mr. Whitehead has misstated my position on this issue. I believe that the Commission
15 should support the role of NERC and the two reliability councils in Pennsylvania,
16 MAAC and ECAR, in developing reliability standards. The Commission should also
17 recognize that after a transition phase, planning reserves should not be mandated and
18 free market forces will provide adequate supply in the marketplace. I firmly believe
19 that this responsibility for maintaining generation reserves lies with generation market
20 participants operating through rules under the auspices of the emerging ISO's or other
21 independent system operator.

22 Q. **IN MR. JOSEPH SCHADT'S REBUTTAL TESTIMONY ON PAGE 27, HE**
23 **ARGUES THAT CERTAIN PROPOSALS ON TRANSITION COSTS COULD**
24 **COMPROMISE THE COMPANY'S ABILITY TO MAINTAIN SYSTEM**
25 **RELIABILITY AND TO BE THE SUPPLIER OF LAST RESORT. DO YOU**
26 **AGREE WITH THESE CONCLUSIONS?**

27
28 A. No. With regard to system reliability, the NERC and regional council reliability
29 standards and operating rules and requirements implemented through the ISO or other

1 independent operators in combination with a competitive generation market will ensure
2 reliability of the system. For these reasons, I believe that adequate system reliability
3 will be maintained over a wide spectrum of stranded cost outcomes and, accordingly,
4 Mr. Schadt's argument is incorrect. Second, the argument that the Company's ability
5 to be supplier of last resort will be compromised should not be applicable here. I
6 believe that the supplier of last resort function should be competitively bid and not
7 automatically fall to the Company. If this service is competitively bid, then the
8 service will be priced properly and the Company will be relieved of this responsibility
9 if it is unable to perform.

11 III. CUSTOMERS WITH HOURLY SUPPLY METERS

12 Q. IN HIS REBUTTAL TESTIMONY, MR. KLEHA STATES THAT PP&L DOES
13 NOT HAVE A PROPOSAL TO SUBMIT FOR RECOVERING GENERATION
14 SERVICE COSTS FOR CUSTOMERS WITH HOURLY METERS. HAVE YOU
15 PROVIDED A PROPOSED METHODOLOGY FOR SUCH SERVICE?
16

17 A. Yes. In my direct testimony I provided a Pro Forma Supplier Tariff (Exhibit 7, LRC-2)
18 that describes how PP&L would handle customers both with hourly meters and those that
19 have only monthly energy meters.

21 IV. CUSTOMERS WITHOUT HOURLY SUPPLY METERS

22
23 Q. AT THE END OF HIS REBUTTAL TESTIMONY, MR. KLEHA DESCRIBES THE
24 PROPOSED MECHANISM FOR HANDLING CUSTOMERS WITHOUT HOURLY
25 METERS. THIS MECHANISM ALSO DEFINES THE PURCHASE GENERATION
26 COST RATE (PGCR) SHOWN IN EXHIBIT JMK-7. DOES THIS PROCEDURE
27 FULLY COVER ISSUES WITH REGARD TO HANDLING CUSTOMERS WITH
28 ONLY MONTHLY ENERGY METERS?
29

1 A. No. The PGCR computation is posed as a method of annually truing up the cost of
2 generation for Company service taking into account the costs of purchased supplies. This
3 procedure does not address my concerns that PP&L has not addressed the issues of energy
4 balancing and load reconciliation for customers of unaffiliated suppliers with only energy
5 meters. Again, the Pro Forma Supplier Tariff included with my direct testimony (Exhibit
6 7 LRC-2) proposes a specific method of handling these important needs through
7 development of an Aggregated Daily Load Curve and other procedures.

8 Q. **DOES MR. KLEHA'S DISCUSSION OF HANDLING CUSTOMERS WITH
9 AND WITHOUT HOURLY METERS COVER OPERATIONAL ISSUES SUCH
10 AS SUPPLIER LOAD RESPONSIBILITY?**

11
12 A. No. PP&L needs to address operational issues of customers regarding requirements
13 of suppliers including incorporating an agreed-to method of determining hourly retail
14 load responsibility for serving customers without hourly metering. PJM is expecting
15 the local distribution company to address these issues. The new deregulated
16 environment cannot be advanced until such issues are addressed and resolved.

17 Q. **DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

18 A. Yes.

19

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8/22/97
Hornby

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKETED

AUG 26 1997

DIRECT TESTIMONY OF

DR. RICHARD D. TABORS

ON BEHALF OF
ENRON POWER MARKETING INC.

DOCKET NO. R-00973954
RE: PP&L RESTRUCTURING PLAN

RECEIVED
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PA.P.U.C.
PROTHONOTARY'S OFFICE

JULY 2, 1997

1 Q. PLEASE STATE YOUR NAME AND ADDRESS.

2 A. My name is Richard D. Tabors. My address is Tabors Caramanis & Associates,
3 30 Brattle Street, Cambridge, Massachusetts 02138.

4 Q. FOR WHOM ARE YOU APPEARING?

5 A. Enron Power Marketing Inc., an electric generation supplier.

6 Q. WHAT ARE YOUR QUALIFICATIONS TO OFFER TESTIMONY IN
7 THIS PROCEEDING?

8 A. My curriculum vitae is attached as Exhibit 8 (RDT-1).

9 Q. ARE YOU FAMILIAR WITH PP&L'S RESTRUCTURING PLAN IN THIS
10 DOCKET TO IMPLEMENT "DIRECT ACCESS," AS THAT TERM IS
11 DEFINED IN THE ELECTRICITY GENERATION CUSTOMER CHOICE
12 AND COMPETITION ACT?

13 A. Yes, I am.

14 Q. WHAT IS YOUR UNDERSTANDING OF DIRECT ACCESS?

15 A. Pennsylvania customers will be able to choose their retail supplier of electricity
16 from among competing suppliers, each of whom should have equal access to the
17 transmission and distribution wires needed to access the retail customers.

18 Q. DO YOU HAVE ANY OPINION REGARDING THE ABILITY OF
19 COMPETING SUPPLIERS TO OBTAIN FAIR ACCESS TO RETAIL
20 CUSTOMERS UNDER THE PP&L RESTRUCTURING PLAN?

21 A. Yes. While many aspects of the Plan will help all potential suppliers obtain
22 access that they do not now enjoy, I have reservations about a continuing

- 1 restriction on suppliers other than PP&L, which is not addressed in PP&L's
2 proposal.

3 **Q. WHAT IS THAT RESTRICTION DR. TABORS?**

4 A. My concern lies in how the Pennsylvania-New Jersey-Maryland power pool
5 ("PJM") continues to allocate intertie capacity -- referred to as capacity benefit
6 margins, or CBMs.

7 **Q. WHAT ARE CBMs?**

8 A. They are the capacity of the interties that connect PJM with adjoining control
9 areas.

10 **Q. HOW ARE PJM CBMs CURRENTLY ALLOCATED?**

11 A. They are allocated to today's load-serving, transmission-owning PJM members on
12 the basis of their load ratio shares. This allocation is not tie specific. Thus, if
13 PP&L has 10 percent of the load in PJM, it is allocated 10 percent of the aggregate
14 CBMs of the pool, which it can use on a single intertie or divided among multiple
15 interties. CBMs are not, however, allocated to entities that have not provided retail
16 service — *i.e.*, which have not served load — in the past.

17 **Q. WHY DOES THIS ALLOCATION CONCERN YOU?**

18 A. Because it assumes that retail competition does not exist and that customers will
19 continue to be captive to their traditional utility company. The traditional utility
20 company continues to be allocated a share of total PJM tie benefits as if this were
21 true. In Pennsylvania, however, this will soon no longer be true. Instead of being

- 1 allocated to the transmission owning members of the PJM, tie benefits need to be
2 accessible to either customers or their competitive suppliers.

3 **Q. IF TIE BENEFIT CAPACITY IS NOT ALLOCATED IN THE**
4 **TRADITIONAL MANNER, IS THERE A RISK THAT THE**
5 **TRANSMISSION OWNING MEMBERS OF THE PJM**
6 **INTERCONNECTION WILL LOSE THE VALUE OF THEIR**
7 **INVESTMENTS IN THE TRANSMISSION FACILITIES THAT**
8 **INTERCONNECT PJM WITH OTHER CONTROL AREAS?**

9 A. No. That investment is already included in the transmission revenue requirement
10 that is recovered in the transmission rates that Federal regulators fix for PJM and
11 which PJM flows through to the transmission owners. In this sense, the tie benefit
12 capacity is an externality — a benefit to the transmission owning utilities for
13 which they do not pay.

14 **Q. HOW WOULD YOU RECOMMEND CHANGING THE ALLOCATION OF**
15 **TIE BENEFITS, DR. TABORS?**

16 A. The tie benefits should be treated like all other transmission assets. They should
17 be made available by the PJM Interconnection Office on both a non-firm and firm
18 basis, without discrimination.

19 **Q. WHAT WOULD YOU RECOMMEND THAT THIS COMMISSION DO IN**
20 **CONNECTION WITH TIE BENEFITS?**

21 A. PP&L and each of the other PJM transmission owners should be required to make
22 their allocated tie benefits available to either their former retail customers who
23 choose another supplier in connection with "Direct Access" or to that customer's
24 supplier. Otherwise competing suppliers will be denied access to import

- 1 capability, which only PP&L and other incumbent PJM transmission owning
2 utilities will enjoy.

3 **Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?**

4 **A. Yes.**

RICHARD D. TABORS

EDUCATION:

Ph.D., The Maxwell School, Syracuse University, Geography and Economics, 1971.
M.S.Sc., Syracuse University, Social Sciences, 1970.
B.S., Dartmouth College, Biology, 1965.

PROFESSIONAL BACKGROUND:

Dr. Tabors is a Principal and founder of Tabors Caramanis & Associates and an economist and scientist with 21 years of domestic and international experience in energy planning and pricing. He is a member of the group which developed the theory of Spot Pricing upon which real-time pricing (RTP) and Marginal Cost Pricing of transmissions services are based. He has completed margin cost based tariff studies for more than twenty US utilities. He is a former Principal of Meta Systems, Inc. where, from 1972 to 1988, he served as Principal in Charge of all projects in real time pricing.

Dr. Tabors is working on the restructuring of the US electric supply industry where he and his colleagues have developed and presented a series of proposals for an industrial structure focused on bilateral contracting as opposed to a mandatory pooling structure. He has provided testimony and worked with clients on restructuring efforts in California, Massachusetts, the New England Power Pool, PJM and New York, as well as before the Federal Energy Regulatory Commission.

Through his work at Harvard (1970 to 1976) and MIT (1976 to the present) and through his consulting activities, he has worked on industrial energy efficiency improvement, electric power demand and supply planning studies and pricing analyses in US and Europe, and many developing countries. Recent experience has focused on development of non-intrusive electric energy monitoring systems, independent power production, electricity pricing, and demand management and litigation support studies both in the US and abroad. He has worked extensively in industrial and commercial electric energy conservation and load management and cogeneration.

He is currently Senior Research Engineer at the Laboratory for Electromagnetic and Electronic Systems at MIT and Senior Lecturer in Technology Management and Policy and in Electrical Engineering. Dr. Tabors received a B.A. in Biology from Dartmouth College (1965) and an M.S. and Ph.D. (1970 and 1971) from the Maxwell School of Syracuse University in Economics and Geography. He is co-author of 5 books and over 80 professional articles and reports including Spot Pricing of Electricity with the late Fred C. Schweppe, M. Caramanis and R. Bohn. He is a member of IEEE and the International Association of Energy Economists.

PROFESSIONAL EXPERIENCE:

1992-Present. Senior Research Engineer, Laboratory for Electromagnetic and Electronic Systems.

1986-Present. Senior Lecturer, member of the faculty and First Year Advisor, Technology and Policy Program, MIT. Responsible for advising of all first year students and for Core Seminars, TPP 11, TPP 12, TPP 101.

September 1988-Present. Founder and President, Tabors Caramanis & Associates, Inc. Product and program development for implementation of Real Time Pricing in the Electric Utility Sector, Management Consulting in improving production efficiency.

1985-1986. Assistant Director, Laboratory for Electromagnetic and Electronic Systems, MIT responsible for laboratory administration and research in power systems economics and planning. Research on Power Systems monitoring and control. Currently Principal Investigator on research program in Performance Based Monitoring and Control.

1978-1992. Principal Research Associate, Massachusetts Institute of Technology.

1978-1984. Program Manager, Utility Systems, MIT Energy Laboratory. Economic and systems research and development in electric and gas utility systems including the integration of new generation systems (photovoltaics) into the grid.

1978-1988. Lecturer, Department of Urban Studies and Planning, MIT.

1989-Present. Faculty, with M. Ilic, Course 6.683, Department of Electrical Engineering and Computer Science, Introduction to Power Systems Operations and Planning.

1973-September 1988. Principal, Meta Systems' Utilities Group in Power Systems Planning, Pricing and Systems Analysis.

1971-1986. Research Associate and Member, Center for Population Studies, Harvard University. Research on Resource and Environmental Planning in Developing Nations of South Asia and Africa.

1984-1989. Co-Faculty: Power Systems Planning & Operation: Methodologies for Dealing with an Uncertain Future, MIT summer Session.

1990- 1993. Co-Faculty: Planning for Water and Sewerage: Dealing with the Complete System, MIT summer Session.

1985-1987. Faculty, Course 11.944 Department of Urban Studies and Planning (co-taught as KSG S115 with P. Rogers) Energy Sector Planning in Developing Countries.

1979-1983. Project Manager and Principal Investigator, Electric Generation Expansion Analysis System (EGEAS) Project, under contract to EPRI, MIT Energy Laboratory.

1980. Founder and Director, T2 and Associates.

1977-1982. Project Manager and Principal Investigator, Photovoltaics Project, under contract to US Department of Energy, MIT Energy Lab.

1976-1977. Economist, Photovoltaics Project, MIT Energy Laboratory and Lincoln Laboratory.

1976-1977. Energy Economist, New England Energy Management Information Systems (NEEMIS), Energy Laboratory, MIT.

1974-1976. Assistant Professor of City and Regional Planning, Harvard University.

1973-1974. Lecturer on City and Regional Planning, Graduate School of Design, Harvard University.

1973-1976. Research Fellow, Environmental Systems Program, Division of Engineering and Applied Physics, Harvard University.

1971-1977. Co-Faculty with Professor Roger Revelle, Natural Science 118, & 119, Human Population and Natural Resources, and Population & Environment and in Urban Setting, Harvard University.

1971. Resident Representative, Harvard University, East Pakistan (Bangladesh) Land, Water and Power System Study, Dacca, East Pakistan.

1970. Graduate Administrative and Teaching Assisting to Alan K. Campbell, Dean, Maxwell Graduate School of Citizenship and Public Affairs, Syracuse University.

1969-1970. Syracuse University Intern, Economic Division, USAID Pakistan. Informal adviser on Regional Economic Planning to the Urban Development Directorate, Planning Department, Government of East Pakistan (Bangladesh).

CONSULTING EXPERIENCE:

1995-Present. Consultant to the Office of the Attorney General, Commonwealth of Massachusetts for Electric Utility Industry Restructuring.

1996-1997. Consultant to the Department of the Attorney General, State of Rhode Island and

Providence Plantation for Electric Utility Industry Restructuring.

1995-1996. Consultant to the New England Competitive Power Coalition providing support for development of a Blueprint for Restructuring of the New England Power Pool.

1995. Consultant on the background to Electric Industry Restructuring to Central Vermont Public Service.

1995-Present. Consultant with Sithe Energy on Electricity Pricing and Electric Industry Restructuring.

1995-Present. Consultant with Independent Power Producers of New York (IPPNY) on restructuring of the electric sector in New York.

1994-Present. Consultant to ABB/Systems Control on transmission pricing and power systems operations.

1994-1996. Development of transmission pricing strategies for major western utility.

1994-Present. Consultant with Enron Capital and Trade Resources on US Electricity Restructuring with specific assignments in California, New York, Massachusetts, PJM and New England. Includes testimony in California "Blue Book" en banc hearings and participation in California Competitive Power Market Working Group.

1995-1996. Development of Real Time pricing strategies and rates for Oglethorpe Power Company, Atlanta, GA.

1991-1993. Development of Marginal Cost Based, Transmission System Pricing system for the National Grid Company (NGC) of the United Kingdom.

1990-1991. Development of Real Time Rate structure and evaluation of Customer Impacts for Central Maine Power Company.

1990-1993. Development of Purchase and Transmission Strategy for major U.S. Independent Power Producer.

1989-1994. Development of rate response experiments for NYSERDA, EPRI and ESSERCo in ConEd and NYSEG service territories: Response to real time pricing.

1988-Present. Development of Utility and Manufacturing consulting services practice.

1987-1988. Conservation and load management analysis and testimony for Boston Gas Company.

1986. Expert Witness, St. Peter, MN vs. SMMPA, Utility Planning and Forecasting.

- 1985-1988. Development of Electric Power Systems Consulting Group, Meta Systems Inc.
- 1984-1987. Variable Energy Cost/Spot Pricing studies under contract to Integrated Communications Systems of Atlanta. Utilities included Mid-South, Pacific and Gas and Electric, Southern California Edison, Central and Southwest.
- 1984-1985. Metcalf and Eddy Engineering, Analysis of Economic benefits of Cogeneration/District Heating for Columbia Point Housing, Boston Redevelopment Authority.
1984. Value of Reliability Study for Public Service of New Mexico.
- 1983-1984. With East-West Center, Honolulu, Hawaii, study of Electric Futures of Northeast Asia, Japan, Korea and Taiwan.
- 1983-1984. Independent Variable Energy Cost Spot Pricing Studies for Georgia Power, Florida Power and Light, Florida Power Corp., Tampa Electric and Gulf Power.
- 1983-1984. Petroleum Pricing Study, Philippines, for IBRD.
- 1982-1983. Lignite Pricing for Electric Power Generation Thailand for IBRD.
1982. Independent, Review of Electric Power Futures for Combustion Engineering.
- 1980-1981. Consultant, Microwave Associates, Inc., on Electric Load Management and Control.
- 1979-1980. Urban Energy Impact Statement for HUD.
1977. Urban Systems Research and Engineering Analysis of Boston Wastewater Management Plan for C.E.Q.
- 1975-1976. Bangladesh Energy Study for Asian Development Bank and UNDP.
- 1975-1976. Urban Systems Research and Engineering, definition of model urban areas for environmental impact analysis using the EPA developed SPACE/SEAS model.
- 1974-1975. Land Use and Environmental Quality Modeling and case study analysis of land use impacts on water and air quality. Case studies focused on the Mill River Basin in the New Haven SMSA.
1974. Lake Chad Polder Development study of agricultural development with low-lift irrigation pumping in the area immediately surrounding Lake Chad.
1974. Urban Systems Research and Engineering, Interceptor Sewer Project to evaluate the impact of EPA interceptor grants program on land use patterns in suburban and rural areas of

EPA Regions, 2,4,6.

1973. Decision Making and Flood Plain Management in the Connecticut River Valley, study for New England River Basin Commission.

1973-1974. Member, Technical Advisory Panel for Educational Evaluation in Massachusetts, Office of the Commissioner in Education, Commonwealth of Massachusetts.

1971-1977. Consultant, Urban Systems Research and Engineering. Projects included: Analysis of Boston Wastewater Management plan for C.E.Q.; definition of 'modal' urban areas for environmental impact analysis using the EPA developed SPACE/SEAS model; Interceptor Project to evaluate the impact of EPA interceptor grants program on land use patterns in suburban and rural areas of EPA Regions 2, 4, 6; Rural Growth Project analyzing regional development in non-metropolitan multi-county areas in the United States.

PROFESSIONAL AFFILIATIONS:

Institute of Electrical and Electronic Engineers
American Association for the Advancement of Science
International Association of Energy Economists

PUBLICATIONS:

Books, Book Chapters, and Monographs

The Definition of Multifunctional Planning Regions: A Case Study of East Pakistan, a report to the East Pakistan Land, Power and Water Study, Harvard University Center for Population Studies, May 1971.

"Preferences for Municipal Services of Citizens and Political Leaders: Somerville, MA, 1971," Population Policymaking in the American States: Issues and Processes, D.C. Heath and Co., May 1974 (with M.A. Vinovskis).

The Syracuse Metropolitan Regions: A Background for Paretian Environmental Analysis, Environmental Systems Program, Harvard University (ESP Monograph), September 1974.

Population Policymaking in the American States: Issues and Processes, D.C. Heath and Co., May 1974 (with Bergman, Elihu, D. Carter, R. Cook, and D. Weir).

"Framework for the Analysis of State and Local Population Policy," Population Policymaking in the American States: Issues and Processes, D.C. Heath and Co., May 1974.

Interceptor Sewers and Urban Sprawl, D.C. Heath and Co., October 1975 (with Binkley, Collins, Kanter).

Land Use and the Pipe: Planning for Sewerage, D.C. Heath and Co., November 1976 (with M. Shapiro and P.P. Rogers).

"Infrastructure Planning," in ASPO, Rural and Small Town Planning, The Old West Regional Commission, 1978.

"Utility Services," in So, Stollman, Beal, and Arnold, eds., The Practice of Local Government Planning, International City Management Assoc., Dec. 1979.

"Energy Demand Estimation," in Jacoby and deLucia, eds., Energy Planning in Developing Countries: The Case of Bangladesh, John Hopkins Press, 1982 (with R. deLucia).

"Traditional/Renewable Energy Sources," in Jacoby and deLucia, eds., Energy Planning in Developing Countries: The Case of Bangladesh, Johns Hopkins Press, 1982 (with R. deLucia).

"Utility Spot Pricing to Coordinate Deregulated Utilities, Customers and Generators," in Plummer, Ferrar and Hughes, eds., Electric Power Strategic Issues: Deregulation and Diversification, Johns Hopkins Press, 1982 (with R. Bohn and F. Schweppe).

Electric Generation Expansion Analysis System, Vols. 1 & 2 (with Stone & Webster Engineering, Vols. 3, 4 & 5) EPRI, Palo Alto, CA, Report No. EL-2561, 1983 (with M. Caramanis and F.C. Schweppe).

"Electrical Utility Load Management Systems," A.H. El-Abiad ed., Power Systems Analysis and Planning, McGraw-Hill, 1983.

"Cogeneration: Ownership and Operating Economics," in A.H. El-Abiad ed., Power Systems Analysis and Planning, McGraw-Hill, 1983.

"The New (Alternative) Electric Generation Technologies: An Evaluation of Their Potential," A.H. El-Abiad ed., Power Systems Analysis and Planning, McGraw-Hill, 1983.

"Using Spot Pricing to Coordinate Deregulated Utilities, Customers and Generators" in Plummer, Ferrar and Hughes, eds., Electric Power Strategic Issues, Public Utilities Reports Inc., 1983 (with R. Bohn, and F. Schweppe).

"An Approach to Deregulating the Generation of Electricity," in Plummer, Ferrar and Hughes, eds., Electric Power Strategic Issues: Deregulation and Diversification, Public Utility Reports, 1984 (with R. Bohn, B. Golub, and F.C. Schweppe).

"Utility Finance and Planning in Japan, Korea and Taiwan," in Kim, Smith and Rose, eds., Electric Futures of Asia and the Pacific, East West Press Center, Honolulu, 1986 (with M. Castillo-Bonet).

Electricity Spot Pricing, Kluwer Academic Press, 1988 (with F.C. Schweppe, M.C. Caramanis and R. Bohn).

Energy Aftermath: How We Can Learn From the Blunders of the Past to Develop Our Energy Future, Harvard Business School Press, Boston, 1989 (with T.H. Lee and B.C. Ball).

"Transitional Strategies for Emissions Reduction in the Electric Power Sector" in J. Tester and N. Ferraro, eds, Energy and Environment in the 21st Century, MIT Press, 1991. (with Burt L. Monroe, III)

"Engineering Economic Analysis: Applications to Electric Utility Investment Planning" in M. Baughman ed., Engineering Economic Analysis: Overview and Current Applications, IEEE Tutorial, 1992.

"Unbundling the U.S. Electric Power Industry: A Blueprint for Change," Tabors Caramanis & Associates, March, 1995 with Fernando, Kleindorfer, Pickel and Robinson.

Articles and Reviews

"A Preliminary View of Economic Change and Urbanization: Bangladesh 2000," in Thomas and Lavan, eds., West Bengal and Bangladesh: Perspectives from 1972, Asian Studies Center, Michigan State University, South Asia Series No. 21, 1973.

"Land Values and Public Investment in Urban Fringe Areas: A Case Study of Clay, New York," Papers and Proceedings of the Northeast Regional Science Association, 1975 (with M. Shapiro).

Review of Greenberg et al., Solid Waste Planning in Metropolitan Regions, in Annual of Regional Science, June 1978.

"Substate Regions in Non-Metropolitan Economic Development, Planning and Analysis," Growth and Change, January 1980 (with C.S. Binkley).

"Homeostatic Utility Control," IEEE Trans. on Power Apparatus and Systems, Vol. PAS-99, No. 3, May/June 1980 (with F.C. Schweppe, J.L. Kirtley, H.R. Outhred, F.H. Pickel and A.J. Cox).

"Rate and Penetration Analysis, the Impact of Distributed Photovoltaic Power Systems within the Utility Grid System," IEEE Transactions, IEEE 14th Photovoltaic Specialists Conference, 1980 (with A. Cox S. Finger, and A. Burns).

"Economic Integration of New Energy Technologies into the Grid Using Homeostatic Control," invited paper, IEA Conference on New Energy Conversion Technologies, April 1981.

"Economic Operation of Distributed Power Systems within an Electric Utility," IEEE Trans. on

Power Apparatus and Systems, Vol. PAS-100, No. 9, September 1981 (with S. Finger and A. Cox).

"Solar Energy/Utility Interface: The Technical Issues," Energy, The International Journal, January 1982 (with D.C. White).

"Homeostatic Control for Electric Power Usage," IEEE Spectrum, Vol. 19, No. 7, 1982 (with F.C. Schweppe and J.L. Kirtley).

"The Introduction of Non-Dispatchable Technologies as Decision Variables in Long-Term Generation Expansion Models," IEEE Trans. Power Apparatus and Systems, Vol. PAS-101, No. 8, August 1982 (with M.C. Caramanis, K.S. Nochur and F.C. Schweppe).

"Homeostatic Control: The Utility Customer Marketplace for Electric Power," in Local Heat and Power Generation: A New Opportunity for British Industry, Interscience Enterprise, U.K., 1983 (with F.C. Schweppe and J.L. Kirtley).

"Deregulating the Electric Utility Industry," The Energy Journal, January 1984 (with F.C. Schweppe and R. Bohn).

"Electricity Spot Prices in Developing Countries," National Development, November 1984.
"Evaluation of Spot Price Based Electricity Rates," IEEE Trans. on PAS, Vol PAS-104, no. 7 July 1985 (with F.C. Schweppe and M.C. Caramanis).

"Natural Gas Fired Combined Cycle Generators: Dominant Solutions in Capacity Planning," IEEE Trans. on PAS, No. 85 SM 492-4 (with D. Flagg).

Review of Munasinghe, Energy Pricing and Demand Management in The Energy Journal, 1987.

"Real World Experience with Real Time Pricing," IEEE Trans on PAS, 1989, (with F.C. Schweppe and M.C. Caramanis).

"Algorithms for a Spot Price Responding Residential Load Controller," IEEE Trans on PAS, 1989, (with B. Daryanian and F.C. Schweppe).

"A Framework for Integrated Resource Planning: The Role of Natural Gas Fired Generation in New England," IEEE Trans on PAS, 1992, (with S.R. Connors, C.G. Bespolka, D.C. White, and C.J. Andrews).

"Optimal Demand-Side Response to Electricity Spot Prices for Storage-Type Customers," IEEE Trans on PAS 1992, (with B. Daryanian and R.E. Bohn).

"Planning for Future Uncertainties in Electric Power Generation: An Analysis of Transitional Strategies for Reduction of Carbon and Sulfur Emissions," IEEE Transactions on PES, 1991 (with Burt L. Monroe, III).

"Real Time Pricing as a Component of Least-Cost Power Strategies," Proceedings of the American Power Conference, 1991 (with Michael C. Caramanis and Bahman Daryanian).

"Real Time Pricing as a Component of Least-Cost Power Strategies," Proceedings of the American Power Conference, 1991 (with Michael C. Caramanis and Bahman Daryanian).

"RTP-Based Energy Management Systems: Monitoring, Communication, and Control Requirements for Buildings under Real Time Pricing," ASHRAE Journal (with B. Daryanian and L.K. Norford).

"An Experiment in Real Time Pricing for Control of Electric Thermal Storage Systems," IEEE Trans. on Power Systems (with B. Daryanian and R.E. Bohn).

"A Computer Design Assistant for Induction Motors, Using Monte-Carlo Design Synthesis to Augment a Design Database," Conference Record of the 1991 IEEE IAS Annual Meeting, 1991 (with J.A. Moses, J.L. Kirtley, J.H. Lang, and F. Cuadra).

"A Simulator of the Manufacturing of Induction Motors," Conference Record of the 1991 IEEE IAS Annual Meeting, 1991 (With C.L. Tucci, J.H. Lang, and J.L. Kirtley).

"Benefit Optimization of Centralized and Decentralized Power systems in a Multi-Utility Environment," IEEE Transactions on Power Systems, 1993 (with F. Nishimura, M.D. Ilic, and J.R. Lacalle-Melero).

"Transmission System Management and Pricing: New Paradigms and International Comparisons," Invited Paper, IEEE Power Systems Winter Meeting, February, 1993. IEEE Transactions of Power Systems, 1993.

"Competitive Electric Market will Tailor Services to Everyone," California Manufacturer, May, 1995, pp 7-10. (with David J. Parquet).

"The Electric Vehicle Unplugged," Technology Review, December, 1995. (with Richard deNeufville, Stephen Connors, Frank Field, David Marks and Donald Sadoway).

"Smart Hardware: Large Power Transformer Monitoring," IEEE Computer Applications in Power November, 1995 (with James Kirtley, Bernard Lesieutre, Wayne Hagman, Paul Warren, Mary Jane Boyd and H.P. Chou).

"Contrasts in Restructuring: The UK and Norway," IEEE Spectrum, 1996.

"Zonal Transmission Pricing: A Methodology and Preliminary Results from the WSCC," Proceedings of the Conference on Innovative Pricing, San Diego, March, 1996.

"A Market-Based Proposal for Transmission Pricing," The Electricity Journal, November, 1996.

"Zonal Transmission Pricing: Preliminary Results from the WSCC," The Electricity Journal, November, 1996 (with Steven Walton).

"The Regulatory Contract and Restructuring: A Modest Proposal," The Electricity Journal, December, 1996 (with Raymond Hartman).

"Optimal Operating Arrangements in a Restructured World: Economic Issues," Energy Policy, (forthcoming 1997 with Raymond Hartman).

Technical Reports

"U.S. Electrical Energy Demand and the Potential for Photovoltaics," Technical Note, Lincoln Laboratory, M.I.T., November 1976 (TN 76-2) (with M. Pope and R. Matlin).

"The Cost of a Cold Winter," The NEEMIS Newsletter, Energy Laboratory, MIT, No. 6, Vol. 1, January 1977 (with S. Raskin).

"Impacts of Dispersed Solar Space and Hot Water Heating on New England Electric Service," MIT Energy Laboratory, June 1978 (with S. Law and A. Burns).

"A Uniform Economic Valuation Methodology for Solar Photovoltaic Applications Competing in a Utility Environment," MIT Energy Laboratory Report No. MIT-EL 78-010, June 1978 (with P.R. Carpenter).

"SERI Venture Analysis," MIT Energy Laboratory Technical Report No. MIT-EL 78-032, July 1978 (with S. Finger).

"Methodology and Definition of Solar Photovoltaic Planning Regions," MIT Energy Laboratory Report No. MIT-EL 78-034, July 1978 (with P.R. Carpenter)

"The Economics of Water Lifting for Small-Scale Irrigation in the Third World: Tradition and Photovoltaic Technologies," MIT Energy Laboratory Technical Report No. MIT-EL 79-011, May 1979.

"Homeostatic Control: Economic Integration of Solar Technologies into Electric Power Operations and Planning," MIT Energy Laboratory Report, No. MIT-EL-81-028, July 1981.

"Boston Harbor Management Study," MIT Sea Grant College Program, Report No. MITSG81-15, November 1981 (with J.T. Kildow, principal investigator).

"Utility Spot Pricing Study: Wisconsin," MIT Energy Laboratory Technical Report No. MIT-EL 82-025, June 1982 (with M.C. Caramanis and R. Stevenson).

"Market and Economic Analysis of Residential Photovoltaic Systems: Final Report," MIT

Energy Laboratory Technical Report No. MIT-EL 82-024, June 1982.

"Industrial Interfuel Substitution Phase I Report: Model Development and Case Study," MIT Energy Laboratory Technical Report No. MIT-EL 82-035, June 1982 (with G. Russo).

"Management Decisions for Cogeneration," MIT Energy Laboratory Technical Report No. MIT-EL 82-084, July 1982 (with R.R. Radcliffe).

"Economic Analysis of the Photovoltaic Technology, Final Report," MIT Energy Laboratory Technical Report Draft, August 1982.

"Utility Spot Pricing: California," prepared for Pacific Gas and Electric and Southern California Edison, MIT Monograph, Cambridge, MA, October 1982 (with F.C. Schweppe and M. Caramanis).

"Deregulating the Electric Utility Industry," MIT Energy Laboratory Technical Report No. MIT-EL 82-003, January 1982 (with R. Bohn, B. Golub and F.C. Schweppe).

"Management Decisions for Cogeneration: A Survey Analysis," MIT Energy Laboratory Report, Report No. MIT-EL 82-025, June 1982 (with R. Radcliffe).

"Management Decisions for Cogeneration: Discriminating Between Users and Non Users," MIT Energy Laboratory Report, Report No. MIT-EL 82-029 (with R. Radcliffe).

"Spot Pricing and Its Relation to Other Load Management Methods," MIT Energy Laboratory Report, MIT-EL 83-001, January 1983 (with M. Caramanis and F.C. Schweppe).

"Utility Spot Pricing: California II," prepared for California Energy Commission, Final Report, January 1984 (with F.C. Schweppe and M. Caramanis).

"An Assessment of Public Infrastructure in Massachusetts," Joint Center for Urban Studies, A Case Study prepared for the use of the Subcommittee on Economic Goals and Intergovernmental Policy of the Joint Economic Committee, Congress of the United States, February 25, 1984.

"Ammonia from Bagasse Gasification: A Study of Ethanol Production Systems in Brazil," M.I.T., Laboratory for Electromagnetic and Electronic Systems, LEES Report No. TR 85-002, April, 1985 (with C. Fernando).

"A Non-LP Prescreening Framework for Integrated Energy Systems," M.I.T., Laboratory for Electromagnetic and Electronic Systems, LEES Report No. TR 86-001, January 1986 (with C. Fernando).

Working Papers and Discussion Papers

"Choice of Technologies for Lifting Water," Lake Chad Polder Project, Meta Systems, Inc., USAID 1972.

"A Framework for Long-Term Economic Planning in Bangladesh," Working Paper, Center for Population Studies, March 1972 (with R. Dorfman, and M. Alamgir).

Population Projections for Bangladesh: 1973-2003, Working Paper, Center for Population Studies, February 1972 (with R. Revelle, H.A. Thomas, and F. Benford).

"The Definition and Identification of Interested Parties and Interested Groups for Pareian Analysis," Discussion Paper #73-3, Environmental Systems Program, Harvard University, December 1973.

"Interceptor Sewers and Suburban Sprawl," Urban Systems Research and Engineering, Inc., Vol. 1, September 10, 1974 (with C.S. Binkley, et al.).

"Photovoltaic Power Systems: Review of Current Market Studies: Methodology for Long-Term Demand Projection," MIT Energy Laboratory Working Paper No. MIT -EL 78-006WP, May 1978.

"Energy in Cities," U.S. Department of Housing and Urban Development, Draft, 1980 (with P. Rogers).

"Economics and Integration of Photovoltaic System into the Utility Grid," to Senate Committee Staff on Science and Technology, September 1981.

"Solar Economics, Whose?" invited paper, International Association of Energy Economists, June 1981.

"Economic Integration of New Energy Technologies into the Grid using Homeostatic Control," Invited Paper, IEA Conference on New Energy Conversion Technologies, April 1981.

"Solar Energy/Utility Interface: The Technical Issues," Energy, The International Journal, January 1982 (with D.C. White).

"Information Technology and Optimization of Electricity Generation Consumption and Distribution: The Case of Homeostatic Control," presented at the International Workshop on Informatics for Energy Savings: Opportunities and Challenges, Rome, Italy, June 21, 1982 (with M. Caramanis and F.C. Schweppe).

"Advanced Generation Application for the HTGR," presented to Gas-Cooled Reactor Associates meeting, San Diego, CA, September 1983 (with T. Lee, C. Ciarletti and J. Tobin).

"Production Costing Load Management and Tariffs," (APESC VI Meetings), Honolulu, Hawaii, May 1983 (with M. Castillo Bonet).

"Homeostatic Control: The Utility Customer Marketplace for Electric Power," in Local Heat and Power Generation: A New Opportunity for British Industry, Interscience Enterprise, U.K., 1983. "New Telecommunications Opportunities for Non-Telephone Utilities," prepared from the proceedings of the Management Conference, in Public Utilities Reports, Inc., June 1984.

"Utility Customer Communications: New Directions for the Marriage of Telephone, Cable, and Electric Power," presented at the Commonwealth Club of California, San Francisco, CA, January 30, 1984.

"Advantages of Central Plant vs. Distributed Boiler Design," Harbor Point: A Case Study, for Presentation and Publication 76th Annual Tech. Conf., International District Heating & Cooling Association (IDHCA), Minneapolis, MN, June 2-6, 1985 (with R. Toland and W. Mahlum).

"Competition and Deregulation: The Shape of the Future," Keynote Address to MAPP Executives, Minneapolis, MN, September 1985.

"Comments on Organizational and Pricing Issues: 2000 and Beyond," prepared for discussion at the NSF Workshop on Power Systems 2000 and Beyond, August, 1989.

"Optimal Operating Arrangements in the Restructured World: Economic Issues," with Raymond S. Hartman, LEES Working Paper WP95-001, December, 1995 (Submitted to Energy Policy).

"The *Independent System Operator*," LEES Working Paper WP 96-002, February, 1996. (Submitted to The Electricity Journal).

"The Regulatory Contract and its relevance to Stranded Assets under Restructuring: A Modest Proposal," with Raymond S. Hartman, LEES Working Paper WP 96-003, February, 1996 (Submitted to The Electricity Journal).

REGULATORY COMMENT AND TESTIMONY:

"Economics and Integration of Photovoltaic System into the Utility Grid," to Senate Committee Staff on Science and Technology, September 1981.

Comment on "Regulation of Electricity Sales - For Resale and Transmission Service," (FERC docket 85-17-000 Phase II) October 1, 1985 (with F.C. Schweppe, R.E. Bohn, M.C. Caramanis).

"Real Time Pricing: Central Maine Power Corporation," before the State of Maine Regulatory Commission, March, 1991, sponsored by Central Maine Power.

"Discussion of FERC Docket No. RM 93-19-000, Transmission Pricing Issues," November, 1993 (with Michael Caramanis).

Testimony before the California Public Utility Commission en banc hearings on industry restructuring, September, 1994, sponsored by Enron Capital and Trade Resources.

Testimony before the Massachusetts Public Utility Commission hearings on industry restructuring, April, 1995, sponsored by Enron Capital and Trade Resources.

Testimony before the New York Public Service Commission Collaborative on Industry Restructuring, May, 1995 sponsored by the Independent Power Producers of New York.

Testimony before the New York Public Service Commission on Buyback Rates sponsored by Independent Power Producers of New York and Sithe Energies, August, 1995.

Testimony submitted by the Commonwealth of Massachusetts, Department of Public Utilities on Electric Industry Restructuring and Market Power sponsored by the Office of the Attorney General, April, 1996.

Testimony before the state of Rhode Island and Providence Plantations Public Utility Commission on Electric Industry Restructuring and Market Power sponsored by the Attorney General, State of Rhode Island, April, 1996.

Testimony before the Commonwealth of Massachusetts, Department of Public Utilities in Panel Format on The Independent System Operator/NEPOOL/FERC Order 888 and on the Power Exchange sponsored by Enron Capital and Trade Resources, July, 1996.

Testimony before the State of New Hampshire Public Service Commission on Utility Restructuring sponsored by Enron Capital and Trade Resources, October, 1996.

Testimony before FERC Technical Panel on Transmission Pricing: October, 1996, and May, 1997.

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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

DOCKETED
AUG 26 1997

Docket No. R-00973954

SURREBUTTAL TESTIMONY OF

RICHARD D. TABORS

ON BEHALF OF
ENRON POWER MARKETING INC.

AUGUST 15, 1997

PA.P.U.C.
PROTHONOTARY'S OFFICE

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

2 A. My name is Richard D Tabors. My business address is 30 Brattle Street,
3 Cambridge, Massachusetts 02138.

4 **Q. Have you previously submitted testimony in the docket?**

5 A. Yes, on July 2, 1997.

6 **Q. What is the purpose of your testimony?**

7 A. The purpose of my testimony is to reiterate our earlier position that the Capacity
8 Benefit Margins (CBMs) as defined by the PJM companies, including PPL,
9 unreasonably withhold from the market 3500 of a maximum 4000 MW of tie
10 benefits. Further my testimony will rebut that of Mr. William Whitehead
11 concerning the importance of the changes that occurred in the PJM Supporting
12 Companies' amendments to their tariff.

13 **Q. What is your understanding of the availability of access to the tie lines that**
14 **connect PJM with the surrounding control areas?**

15 A. It is my understanding that, at present, the ties between PJM and the surrounding
16 control areas have a maximum total transfer capability of approximately 4000MW.
17 Of this total, approximately 3500MW is reserved as Capacity Benefit Margin,
18 effectively as a substitute for capacity that would otherwise have to be installed
19 within the PJM control area. This is held for reliability purposes.

20 **Q. What are the residual rights and how are they allocated?**

1 A. There are approximately 500 MW of residual capacity on the interfaces that can be
2 acquired on a firm basis.

3 **Q. Did the July 14 filing change the proposed allocation of this residual capacity?**

4 A. Yes. The July 14, 1997, filing changed the allocation procedure from one based
5 on load ratio share, to one in which the maximum use of the ties is based on the
6 absolute size of the applicant's load.

7 **Q. Is this change significant?**

8 A. Yes. The change is important to all users in that it increases the absolute level of
9 potential use of the residual capacity. The effect of the change is relatively
10 insignificant since the number of MWs of capacity are so small relative to the
11 actual transfer capability.

12 **Q. How do you propose to deal with the restrictions on access to the tie lines?**

13 A. The highly restricted access to these tie lines is a function of how reliability is
14 defined within the PJM control area. These reliability requirements need to be
15 reevaluated in the context of a competitive electric market, particularly one in
16 which there exists retail access.

17 **Q. What action do you recommend this commission take?**

18 A. As I stated in my initial testimony, I believe that the Commission should require
19 PP&L and the other PJM Transmission Owners to work with the new market
20 entrants to increase the availability of the ties for firm transactions. The current
21 incumbents are receiving the benefits of these ties through capacity credits while

1 continuing to use the ties for non-firm transactions. It is unclear at this time how
2 new entrants into the market will be able to secure any of the capacity benefit from
3 these ties. Notwithstanding the change introduced in the July 14, 1997 filing, the
4 fact remains that new entrants will not be able to acquire any significant quantity
5 of firm capacity – it simply will not be there.

6 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

7 **A. Yes.**