ORIGINAL

R-00 973 953

BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

APPLICATION OF PECO ENERGY COMPANY
FOR APPROVAL OF ITS RESTRUCTURING PLAN
UNDER SECTION 2806 OF THE PUBLIC UTILITY CODE

Exhibit 1
VOLUME VII

Contents:

Statement No. 15 - Direct Testimony & Exhibits of Gregory A. Cucchi

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PECO STATEMENT NO. 15

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DIRECT TESTIMONY

OF

GREGORY A. CUCCHI

Regarding Proposed Restructuring Procedures

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ORIGINAL

DIRECT TESTIMONY OF GREGORY A. CUCCHI

I. INTRODUCTION

Q. Please state your name and address.

A. Gregory A. Cucchi, PECO Energy Company ("PECO" or the "Company"), 2301 Market Street, Philadelphia, PA 19103.

Q. By whom are you employed, and in what capacity?

A. As of April 1, 1997, I am Vice President of Power Delivery. I have also recently been appointed acting Senior Vice President, Consumer Energy Services Group, of which Power Delivery is one component.

Q. What is your educational background?

A. I graduated from Villanova University in 1970 with a B. S. in Electrical Engineering. I also attended graduate school at the University of Pennsylvania in a joint program offered by the Wharton School of Business and the Moore College of Engineering.

Q. Please describe your work experience with PECO.

A. Following my graduation from college in 1970, I joined PECO as an Engineer at the Pennsylvania-New Jersey-Maryland Interconnection ("PJM"). I was appointed Supervising Engineer, PJM Operations in 1987. In May of 1991, I was appointed Director of PECO's System Planning Division. In March of 1994, I was elected

Vice President of Corporate Planning & Development. Finally, in February of this year, I was elected Vice President, Power Delivery, and more recently I was appointed acting head of the Consumer Energy Services Group, which positions I have assumed as of April 1, 1997.

Q. Please describe your former responsibilities as Vice President for Corporate Planning & Development, and your new responsibilities as Vice President for Power Delivery.

A. As Vice President for Corporate Planning & Development for the last three years, I was the chief strategy officer for PECO. In this role, I was responsible for the development of PECO's long-term corporate business strategy and the regulatory strategy required for its implementation. I was also responsible for corporate development, new business development, strategic asset management, and the development and implementation of general corporate strategic initiatives. As Vice President for Power Delivery, I am responsible for the construction, operation, and maintenance of the Company's electric transmission, distribution, and substation systems.

Q. Do you hold now and have you held in the past any positions in trade or other electric industry organizations?

A. Yes. I was recently appointed by the Board of Trustees of the North American Electric Reliability Council ("NERC") to chair the Board's Operating Committee, which is responsible for establishing and administering policies and standards to

ensure the reliable operation of the four Interconnections that comprise the North American Electric Network. I am also a member of the NERC Technical Steering Committee. I am also a member of the Executive Advisory Board on Strategic Issues of the Electric Edison Institute, and a member of the Power Delivery Group Committee of the Electric Power Research Institute.

I have previously served as Chair of NERC's Performance Subcommittee, Chair of the NERC Disturbance Analysis Working Group, Chair of NERC's Interconnected Operations Subcommittee, Chair of the Mid-Atlantic Area Council's Engineering Committee, Chair of PJM's Planning and Engineering Committee, and as the Mid-Atlantic Director for the Emergency Electric Power Executive Reserve division of the Federal Emergency Management Agency.

Q. Have you any other experience that is relevant to the substance of your testimony?

A. Yes. I have been a Guest Lecturer on Power Systems at Villanova University, Iowa State University, and the Massachusetts Institute of Technology. I am also a member of the Villanova University Industry Advisory Council for the School of Electrical Engineering and the Temple University Industry Advisory Council for the School of Electrical Engineering.

Q. Have you previously testified before the Commission?

A. No.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide an outline of the procedures and systems that PECO will develop and implement to enable "Direct Access," which is defined in the Electricity Generation Customer Choice and Competition Act (the "Competition Act") to mean "the right of Suppliers and end-use customers to utilize and interconnect with the electric transmission and distribution system on a nondiscriminatory basis." In compliance with §2806(E) of the Competition Act, my testimony will describe the "procedures for ensuring Direct Access to all licensed Suppliers." Accordingly, my testimony will cover the following:

- Eligible Customer Phase-In Implementation
- Standards of Conduct Applicable to PECO and its Competitive Generation Operations to Avoid Conflicts of Interest
- Supplier Licensing
- Metering
- Billing
- Procedures to Provide Transmission Service
- Energy Balancing/Coordination of Wholesale Supply with Retail Loads

- System Planning and Procedures to Ensure Reliability
- Procedures to Enable Offering of Interruptible Service
- Procedures to Enable Self-Generation
- Procedures to Ensure Fulfillment of PECO Obligation to Serve
- Identification of those systems that PECO will need to develop to implement successfully the procedures I propose

Q. What are the primary objectives of PECO's approach to the design and implementation of the procedures that will be necessary to ensure Direct Access?

A. Our approach has three primary objectives. First, we want to ensure that the procedures are fair to all market participants. The design of critical procedures should produce a level playing field in which neither competitive suppliers nor PECO or its affiliates have unfair advantages, and where no customer class is favored over others. Second, we want our procedures to promote a robust, competitive market for electric generation in PECO's service territory. Third, and finally, we want to ensure that procedures preserve existing levels of reliability.

Q. Are any of these areas you will cover the subject of "working groups" organized by the Commission or formal rulemaking proceedings?

A. Yes. For example, the Commission has organized working groups to consider metering and customer information and billing issues, and there are or will be formal rulemaking proceedings regarding reliability, standards for bill content, and

supplier licensing. The working groups include participants from a wide variety of stakeholder groups, including utilities, customer groups, and future competitive Electric Generation Suppliers ("Suppliers").

Q. *Will PECO incorporate the results of these working groups and rulemakings* into the procedures and systems that you propose in your testimony?

A. PECO will modify the procedures I will propose to reflect the requirements of the Commission's Final Orders in relevant formal rulemaking proceedings. PECO will also actively participate in the working groups, and consider whether ideas and approaches proposed by the working groups that are different than those that I propose in my testimony would better serve the interests of all market participants and stakeholders. As the Commission considers the procedures I propose, I expect that ideas and approaches developed by the working groups will be evaluated and in some instances incorporated in the Commission's Final Order on PECO's Restructuring Plan.

Q. In your testimony, you propose procedures to ensure Direct Access, which will require the imposition of many rights and obligations on both customers and Suppliers. What structure will exist to enable the implementation and enforcement of those rights and obligations?

A. As explained in the testimony of Mr. Alfred A. Miller (PECO Statement No. 2), PECO proposes that all rights and obligations over which the Commission has jurisdiction that will apply to the relationship between PECO and customers be set

forth in a Customer Distribution Services Tariff ("Customer Tariff"). Similarly, all rights and obligations over which the Commission has jurisdiction that will apply to the relationship between Suppliers and PECO be set forth in a Supplier Services Tariff ("Supplier Tariff"). Mr. Miller proposes, and I agree, that the rules needed to implement the procedures proposed in my testimony should be included in these two Tariffs.

III. PROCEDURES FOR PHASE-IN

Q. Please discuss how the Company proposes to implement the Phase-In to full Direct Access.

A. As mandated by Section 2806(B) of the Competition Act, the Company would phase in full Direct Access in three steps: (1) as of January 1, 1999, a maximum of 33% of the peak load of each customer class would have the opportunity for Direct Access; (2) as of January 1, 2000 a maximum of 66% of the peak load of each customer class would have that opportunity; and finally (3) as of January 1, 2001 all customers would have the opportunity for Direct Access.

Q. Please discuss the method for selecting which customers within each customer class will be eligible to participate in the first two steps of the Phase-In.

A. The Company proposes to use a "First-Come-First-Served" selection approach for commercial and industrial customers and a random selection approach for residential customers.

Q. Does the Competition Act provide for such an approach?

A. Yes, Section 2804(B)(4) of the Act states that the Commission should establish regulations to implement a "First-Come-First-Served" customer selection process for the Phase-In. To help the Commission establish workable regulations for a fair Phase-In, PECO will participate in the advisory group the Commission has formed to address this issue. Notably, the Competition Act also gives the Commission discretion to select some other protocol so long as similarly situated customers within a customer class are not competitively disadvantaged. As residential customers would not be competitively disadvantaged under any method, we propose to use a neutral third party to select such customers randomly. That neutral third party would ensure that approximately 33% of the total residential peak demand become eligible customers at each step of the Phase-In.

Q. Why is random selection a preferable method for residential customers?

A. Random selection is the method that is the most fair to PECO's approximately 1.3 million residential customers. Although the Company will be providing a

substantial amount of information to residential customers through its consumer education plan, it would be a "leap of faith" to assume that all such customers will receive and process this information with the same degree of refinement. We are concerned that a First-Come-First-Served approach for residential customers fails to recognize this reality, and would therefore provide unreasonably discriminatory advantages to some residential customers. These advantages may result from differences in education, access to information, language, personal issues, or any other lifestyle variations. The impact on residential customers of the changes made necessary by the transition to full Direct Access will be significant. Given the complexity of these changes that are coming, the only way to avoid unreasonable discrimination and to put all of our residential customers on an equal footing is to employ a random selection process.

In addition, random selection will eliminate the inherent unfairness that could otherwise result from facts such as vacation schedules, reliability of mail delivery, and customers' personal schedules on or near the date that a First-Come-First-Served approach would commence. Commercial and industrial customers generally have systems in place to compensate for such contingencies.

Q. Does the Company's proposed method for industrial and commercial customers also promote fairness?

A. Yes, because the "First-Come-First-Served" approach for selecting commercial and industrial customers prevents similarly situated customers within a customer

class from suffering from competitive disadvantage. This protocol makes commercial and industrial customers, who are generally more sophisticated in energy markets than residential customers, responsible for taking timely action if they desire to participate in the Phase-In.

Q. Please discuss the timing for the implementation of the Phase-In.

A. So that customers would be able to make informed choices about Phase-In participation, PECO proposes to inform all of its customers of the Phase-In steps for full Direct Access through a multi-faceted educational program, which would include mass media educational advertising as well as direct mail. An information packet would be mailed to all customers by July 1, 1998. It would explain the effects of Direct Access, the random selection and First-Come-First-Served processes, the maximum participation percentages allowed under the Competition Act, and the procedures PECO would follow if any commercial or industrial class is over-subscribed.

The packet would also contain a pre-addressed registration card as well as a consent card. If a customer also executes and returns the consent card, PECO would provide Suppliers with the eligible customer's name, address and phone number. Such consent, however, is not required for participation in the Phase-In. All randomly selected residential customers would automatically be eligible to participate in the first step of the Phase-In (January 1, 1999). Commercial and industrial customers, however, would have to complete the registration card and

mail it back postmarked on or after October 1, 1998. No pre-registration would be allowed for such customers. To help ensure consistency, accuracy and impartiality, PECO would have centralized processing for all registration cards and registration by phone, fax, e-mail or hand delivery would not be permitted. Under the "First-Come-First-Served" approach for commercial and industrial customers, individual accounts would be treated as such and have an equal chance to participate. PECO would also have a toll-free number in place to enable the Company to process requests for additional information packets and/or registration or consent cards and respond to questions regarding the Phase-In.

Upon processing a commercial or industrial customer's completed registration card, PECO would advise them in writing of either: (1) their enrollment in the Phase-In if their customer class is still open; or (2) their current ineligibility if their customer class is already fully subscribed and the timing for registering for the second step of the Phase-In.

Customers that participate in the Phase-In would receive electric supply from a Supplier the first billing month after which such customers have completed the necessary contractual arrangements and supplied PECO with all required information.

Finally, those customers that participate in PECO's Retail Access Pilot Program (the "Pilot"), which I have included as Exhibit GAC-1, will be included

automatically in the one-third that are eligible to participate in the first step of the Phase-In. In the case of any large commercial or industrial Pilot customer whose load is split between PECO and a competitive Supplier, the portion of the customer's load served by the competitive Supplier would be included automatically in the first third of eligible customers.

Q. *Please explain the timing for implementing the second step of the Phase-In.*

A. The random selection of an additional third of the Company's residential customers would be handled the same as at the first step. By August 1, 1999, PECO would send additional information packets to the PECO customers who were not enrolled in the first step of the Phase-In. All randomly selected residential customers would automatically be eligible to participate in the second step. Commercial and industrial customers, however, would have to complete and return the registration card postmarked on or after October 1, 1999. Registration and enrollment for such customers would be handled as it was for the first step of the Phase-In.

Q. Please describe the Company's procedures for the final step of the Phase-In pursuant to which all customers would have the opportunity for Direct Access.

A. By October 1, 2000, the Company would provide the remaining third of customers with adequate information about full Direct Access to enable them to make informed choices. Customers would not be required to register but would be

required to sign a consent form if they desire PECO to supply their name, address and phone number to Suppliers.

IV. STANDARDS OF CONDUCT GOVERNING PECO'S RELATIONSHIP WITH ITS COMPETITIVE GENERATION OPERATIONS

Q. How will PECO comply with the Commission's direction in its recent Orders regarding restructuring that utilities establish procedures to avoid improper use of customer or proprietary information?

A. PECO proposes that a Code of Conduct be adopted that would govern its relationship with any of its competitive generation operations. The proposed Code of Conduct, which would be included in either the Customer or Supplier Tariff, is attached to my testimony as Exhibit GAC-2.

V. SUPPLIER LICENSING/RECIPROCITY

Q. Does PECO propose that the Commission's already promulgated interim licensing requirements be adopted for general use during the Phase-In and beyond?

A. Yes.

Q. What procedure will PECO employ to ensure that all Suppliers for whose customers PECO is providing unbundled electric delivery service have current licenses?

A. PECO proposes that the Commission inform PECO immediately when a Supplier's license has been revoked. PECO should be informed of the reason for the revocation so that it will be able to notify the Suppliers' customers of the fact of, and the reason for, the revocation. In such circumstances, during the period in which PECO will be recovering its Transition or Stranded Costs, and in accordance with its obligation to serve, PECO will step in as the Supplier for the customers until or unless the customers obtain their supply from another Supplier.

Q. What is the reciprocity requirement in the Competition Act and how will PECO comply with that requirement?

A. The Competition Act provides that "no electric utility regulated by the Commission and no affiliate of such electric utility may use the distribution system of another electric utility regulated by the Commission or make sales to end-use customers in another electric utility's service territory unless the Commission has approved a restructuring plan for the supplying electric utility which provides for direct access comparable to the direct access provided under the approved plan of the electric utility operating the distribution system in the location where the supplying electric utility seeks to sell electricity to an end-use customer." (See §2805). PECO will implement procedures that ensure compliance with this provision of the Competition Act. An affiliate or competitive generation

marketing group or division of a Pennsylvania jurisdictional utility will be able to sell generation to customers in PECO's service territory if any PECO competitive marketing group or generation affiliate has comparable access to customers of that Pennsylvania jurisdictional utility.

VI. METERING

Q. During the Phase-In and when full Direct Access has been implemented, will PECO be responsible for metering?

A. Yes. PECO's proposal is that it would continue to own, maintain and read customers' billing meters. PECO believes that these functions should not be unbundled and transformed into competitive services for several reasons.

First, the Competition Act provides that the Local Distribution Utility ("LDU") will continue to provide meters and meter reading services, and that the LDU should maintain the same level of quality of this and other customer services that exists today. (See §2807(D)). Second, as electric generation competition develops, Suppliers will come and go, but metering will always be required. As with other constants that are integrally related to the operation of the distribution system, metering should therefore continue to be provided by the regulated LDU. Third, efficiency and current technology suggests that metering should remain a regulated distribution function. As customers change Suppliers, the LDU will be in the best position to ensure that their customers' meters are read and that

metering data is provided to their current Suppliers in a timely fashion. Finally, having the LDU perform all metering will eliminate Suppliers' ability to use tying arrangements to limit customers' ability to switch Suppliers.

Q. Will metering and meter reading following the implementation of Direct Access require the amendment or elimination of any of the current Commission regulations governing metering and meter reading?

A. For the most part, PECO does not envision any need to amend or rescind any of the regulations that govern metering and meter reading. The Commission regulations at 52 Pa. Code §§57.20 - 57.25 contain requirements for testing meters, testing conditions, facilities for testing meters, and adjustment of bills for meter error. PECO anticipates that no aspect of Direct Access would prevent its continued compliance with these regulations. PECO would continue to abide by these regulations and therefore continue to perform all of these required functions. PECO will also adapt its procedures to comply with any new metering regulations adopted in any applicable Commission proceedings.

Q. Does PECO Company plan to implement AMR?

A. Yes. In fact, PECO already has obtained waivers from certain Commission regulations to enable the Company to install and use a limited number of AMR devices in its service territory. By querying these meters electronically, these devices allow PECO to read the customers' meters without entering their homes. Accordingly, AMR significantly reduces the problem of access to meters located

inside residential customers' homes and therefore decreases the number of inaccurate reads. PECO will continue to evaluate AMR technologies as they develop and expects eventually to implement proven technologies throughout its service territory.

Q. Are there any Commission regulations that would prevent PECO from installing AMR absent a waiver from the Commission?

A. The regulations at 52 Pa. Code §56.12, which contain rules regarding how often PECO must read a residential customer's meter, require that "a utility shall render bills based on actual meter readings by utility company personnel." In addition, 52 Pa. Code §56.12(5) allows the use of "remote reading devices" provided the utility obtains an actual meter reading every two years . As such, these regulations might preclude use of AMR devices, absent a Commission waiver, if the Commission were to conclude that an electronic reading is not an "actual" meter reading. PECO, however, believes that such meter readings are actual meter readings.

Q. Please describe the kinds of metering equipment that PECO currently uses.

A. Residential customers, who represent more than 1.3 million of PECO's approximately 1.5 million customers, have meters that record total usage in kWh only. PECO reads these meters monthly and the customers are billed according to the applicable rate schedule for the kWh they use. It is not possible to obtain hourly demand readings from these meters.

Most small commercial customers (customers with demands of 300 kW or less) have meters that record total usage and also the monthly peak demand. PECO reads these meters monthly, and uses the total usage and peak demand to bill the customers according to the applicable rate schedule. These meters record only the total usage and peak demand, and store the peak demand only until the meter is read. Once read, the demand reading resets to zero. It is not possible to retrieve hourly demands for any period of time from these meters because they only record the peak demand for each month.

Most small industrial and larger commercial customers with billing demands of between 300 kW and 750 kW have meters that do register hourly demands. When read on a monthly basis, PECO obtains the total monthly usage, and also the customers' peak demand. These two readings are used to bill the customers according to the applicable rate schedule. Although these meters record hourly demands, they can only store six months worth of such demand data. Also, to obtain such hourly data from the meter, a PECO technician must actually query the meter on-site.

Large industrial and commercial customers with billing demands of 750 kW or higher have more sophisticated meters that register total kWh and half-hourly demands. For most such customers, once a month PECO obtains total usage and peak demand readings and uses these readings to bill the customers according to the applicable rate schedules. Assuming availability of sufficient communications

equipment and any necessary AMR devices, such meters may be queried electronically to obtain hourly demand data.

Q. Is there any need to replace any of this existing metering equipment to enable Direct Access?

A. Not initially. It is true that installation of continuous hourly, half-hourly, or even quarter-hourly demand metering equipment, which equipment can record demands at these time intervals and store these registered demand readings for later retrieval, will improve the precision of the energy balancing and the accompanying load reconciliation process that will be required to enable Direct Access, and which I will describe later in my testimony. (See Section IX). Such metering equipment makes it possible to more accurately compare the amount of energy supplied by a customer's Supplier and the amount of energy used by the customer. I believe, however, that it is acceptable - especially in the first few years of Direct Access - to rely on load profile-based estimated demands rather than actual hourly meter readings. It would not be practical or possible to install demand interval metering in advance of the date the Phase-In to Direct Access is scheduled to begin, which is January 1, 1999.

If, however, actual experience suggests that use of load profiles for balancing will adversely affect reliability, or cause financial inequities that are more significant than I currently anticipate, then PECO will consider the phase out of their use.

Q. Please explain in greater detail why it may not be necessary for all customers to have demand metering initially under a regime of full Direct Access.

A. PECO can make up any under-deliveries in each hour, and absorb over-deliveries in any hour without knowing exactly at the time of delivery the actual amount of under or over-delivery. Similarly, in any system of full Direct Access, a system operator - whether it be a successor to the PJM System operator and the current utility system operators that respond to PJM signals and directions, or a future independent system operator ("ISO") - will take whatever actions will be necessary to correct area control errors (imbalances between system load and system demand) when they arise. Thus, use of load profiling in the early years before demand interval metering can be installed should have no material impact on system reliability.

Second, although it is true that to charge an exact amount for under-deliveries, and to pay an exact amount for over-deliveries, it would be necessary to know exactly how much energy PECO supplied during any hour for under-delivery and absorbed in any hour for over-delivery, the use of load profiling, which PECO has proposed for its Pilot, is an adequate short-term substitute. For the Pilot, PECO proposes to use standard customer load curves to develop load profiles showing estimated hourly loads, which loads will be the basis for a Supplier's delivery obligation for such customers. These estimates of hourly loads can be compared to actual, demonstrated supply to determine: (1) estimated amounts of energy that Suppliers did not supply in any hour but should pay for; and (2) estimated amounts of energy

that such Suppliers did not need to supply but should be paid for.

Q. Does this suggest that you do not believe that it will be necessary at this time to replace all monthly metering with continuous hourly metering?

A. Yes, it does. Such a massive program, which would presumably entail replacing every one of the approximately 1.3 million residential and small commercial kilowatt-hour meters with some form of demand metering equipment, would be very expensive. In addition to the cost of the meters and the installation, significant enhancements to PECO's communications system might also be required. Such a program would also require conformance of PECO's billing systems to enable transfer of metering reading data to such systems. My current belief is that the technology for such an endeavor is not yet mature and therefore does not yet warrant a comprehensive installation program at this time.

Q. In the short-run, if PECO does not proceed immediately with a plan to convert all metering to some form of demand interval metering, would customers be able to convert to such equipment if they wished to?

A. Yes, they would. As contemplated by the Competition Act (see §2807(A)), if a customer wants to upgrade an existing meter - perhaps to take advantage of a new product such as real time pricing that might only be offered to customers with such metering equipment - then PECO would perform such an upgrade at the customer's expense. The only constraint would be that the proposed metering equipment would have to comply with all applicable metering regulations, and

applicable Commission Orders, if any. PECO would be responsible for determining whether the metering equipment complies with Commission metering regulations and Orders. If use of the equipment would require additional training of PECO employees or contractors, the customer would be responsible for such expense, and would have to pay for such training in advance of the installation. In addition, PECO would own, operate, and maintain all such metering equipment following its installation.

VII. BILLING

Q. Who will be responsible for billing customers for unbundled regulated services and for the energy customers purchase from Suppliers?

A. In accordance with §2807 of the Competition Act, PECO will normally be responsible for billing customers for its unbundled, regulated services, and for Suppliers' charges. As also permitted by §2807, however, PECO will provide customers who choose to be billed separately by their Supplier with bills that contain only PECO's charges for its unbundled, regulated services. Such customers would receive two bills - one from PECO for unbundled regulated delivery services, and one from the customer's Supplier for the energy supplied.

Q. Who will decide whether a customer will get one bill or two bills?

A. Customers will. In accordance with §2807 of the Competition Act, customers may choose to receive two bills if their Supplier offers separate billing services, but will

also always have the right to require their Supplier to use PECO for their energy billing.

Q. Will a Supplier pay for PECO to include its charges on its bill?

A. Yes. PECO will charge an amount per bill that is cost-based. PECO will calculate and include this charge in the Supplier Tariff that it will file following entry of the Commission's Final Order on its Restructuring Filing. PECO has included a charge of $0.90 per bill for its Supplier billing service for its Pilot, which charge is based on an estimate of the per bill cost of providing this service. Through experience in the first few months of the Pilot, PECO hopes to be in a position to include in its Supplier Tariff a charge per bill that is based on actual cost.

Q. What format will PECO use for a bill that will include both its unbundled charges as well as a Supplier's charges?

A. PECO will use a format that is consistent with the Commission's Final Order with respect to its rulemaking regarding Standard Bill Content, and current applicable Commission regulations regarding billing. The bill will likely resemble the bill that customers currently receive, except that the unbundled charges for the delivery and related services that PECO will provide will be separately stated. The bill will also separately state the Competitive Transition Charge and the Intangible Transition Charge, used to recover PECO's Transition or Stranded Costs, and the Supplier's charges.

Q. Will PECO place any limits on the types of Supplier charges it will be willing to include in a PECO bill?

A. Yes, some limits will be necessary because of the significant variety of potential pricing mechanisms that Suppliers may wish to use. PECO cannot accommodate all such possible designs because of the significant costs that it would have to incur to create the complex billing system that would be required. Initially, PECO proposes to use the same three formats PECO will offer to Suppliers participating in its Pilot - dollars per kWh, dollars per kWh and dollars per kW, and fixed dollars per month. As metering technology develops and new types of meters are installed, and as PECO's billing systems evolve in tandem with such developments, PECO fully expects to offer additional billing formats to Suppliers.

This proposal will not in any way limit a Supplier's ability to employ different pricing designs and mechanisms. Should a Supplier wish to use a different design that is incompatible with PECO billing formats, the Supplier will have the option of providing a separate bill to its customers.

Q. How will PECO handle customer disputes regarding their bills when the PECO bill contains both its charges and the Supplier's charges?

A. PECO will be responsible for handling all such disputes, even if the dispute relates solely to the Supplier's charges. PECO proposes that for all high bill complaints, PECO will perform a reasonable investigation at no cost to the customer. To test the meter, conduct an energy audit, or perform a foreign load investigation,

however, PECO would charge a cost-based fee for services rendered. PECO will include a proposed fee for each of these services in its Customer Tariff.

Q. Will PECO handle billing disputes for Suppliers that bill separately for their services?

A. No. The Competition Act does not require PECO to do so, nor does it make sense for PECO to have to handle disputes that arise solely as a result of the separate interaction between Suppliers and their customers. PECO, however, will establish with Suppliers protocols and contract terms to handle misdirected calls that will enable smooth coordination between PECO and Suppliers to ensure timely responses by Suppliers to their customers' questions and complaints.

Q. When PECO bills for a Supplier's energy services, and receives less than the total amount billed to the customer, how will the payment be applied?

A. PECO would be paid first for its unbundled, regulated services, including its CTC and ITC charges. Any remaining amounts would be remitted to the Supplier.

Q. Will PECO still offer some of the special billing arrangements and services that it has traditionally offered?

A. Yes. For example, with respect to PECO's bills, whether they include a Supplier's charges or not, PECO will offer budget billing for its portion of the bill, automatic or direct payment plans, the ability to pay at PECO authorized by-pass locations,

and summarized bills in Braille and large print.

Q. Will the time periods allowed for payments for bills rendered by PECO change?

A. No, the time periods would remain the same. PECO will include the necessary language setting forth those time periods in its Customer Tariff.

VIII. TRANSMISSION SERVICE AND RELATED ANCILLARY SERVICES

Q. Does the Commission have jurisdiction over unbundled, retail transmission service, or the related ancillary services that must be performed to maintain the reliability of the transmission system?

A. No. As explained by Mr. Miller in his testimony (PECO Statement No. 2), FERC has asserted exclusive jurisdiction over the rates and terms and conditions of unbundled retail transmission service.

Q. Will FERC requirements regarding transmission service inhibit the implementation of Direct Access?

A. No, they will not. It will be possible for retail customers that wish to purchase their energy requirements from a Supplier to obtain and pay for transmission service.

Q. Has FERC stated how it expects transmission service to be procured in the context of Direct Access?

A. Yes, it has. FERC's Order 888-A makes clear that customers will procure and pay for their transmission service under a utility's FERC-filed Open Access Transmission Service Tariff ("Open Access Tariff"), which in PECO's case will be the regional PJM pool-wide tariff that has recently replaced PECO's previously filed Open Access Tariff. (the "Regional Tariff").

Q. How does PECO propose that customers obtain their transmission service under the Regional Tariff while PECO's transmission and distribution charges are capped?

A. As Mr. Miller details in his testimony (PECO Statement No. 2), for the 54-month period during which PECO's transmission and distribution charges will be capped (through June 30, 2001), PECO proposes to do as it has proposed for the Pilot, which is to procure network transmission service as Designated Agent for its customers under the "Regional Tariff," and recover the costs it incurs to procure such service through unbundled charges that its customers will pay to PECO. Customers with demand interval metering would have the option of obtaining transmission service for themselves directly under the Regional Tariff. In his testimony, Mr. Miller explains the reasons PECO proposes to act as Designated Agent for most of its customers during the 54-month period, and why its doing so

will serve interests that are important to the Commonwealth of Pennsylvania and the Commission.

Q. Does PECO propose that this method of obtaining and paying for transmission service be the only option that customers will have following the 54-month period?

A. No. Following the 54-month period, PECO expects that other methods for procuring and paying for transmission service could become available.

Q. What other methods for obtaining and paying for transmission could be available following the 54-month period?

A. As the Commission, PECO, PJM (or its successor ISO), and market participants gain experience with retail transmission service, and as the retail energy markets mature, a number of methods may become desired and possible. These include:

1. **Pilot Method**. As described above, PECO as Designated Agent would procure and pay for transmission service under the Regional Tariff, and then impose on its retail customers unbundled charges designed using traditional retail cost allocation and rate design methods;

2. **Pilot Method Using Load Profiles for Retail Rates.** This is the same as method No. 1, except it uses load profiles to design retail rates so that all retail customers could be charged the same demand-based transmission rate. To charge the same rates based on demand, load profiles would be

necessary because most of PECO's 1.5 million customers do not now have demand interval metering;

3. **Generation Supplier Method.** Generation Suppliers would procure and pay for network or point to point transmission service under the Regional Tariff in amounts necessary to provide transmission service to their customers located in PECO's service territory. PECO would not charge the Suppliers' customers for transmission; rather, the Suppliers would have to charge prices to their customers, or otherwise cover, the costs the Suppliers would incur for the necessary transmission service;

4. **End-User Method.** Retail customers with demand interval metering would be able to procure and directly pay for network or point to point transmission service on their own under the Regional Tariff. Groups of customers could aggregate their demands to procure transmission service perhaps at a lower average cost per customer, or on a sharing basis more acceptable to those customers.

Q. Given that PECO will obtain and pay for transmission service as Designated Agent for most of its customers during the 54-month period, who will provide necessary ancillary services?

A. FERC has stated that the following ancillary services must be offered under a utility or pool-wide Open Access Tariff:

- Scheduling, System Control and Dispatch Service;
- Reactive Supply and Voltage Control from Generation Sources Service, to maintain voltages on the transmission system;
- Regulation and Frequency Response Service, to provide for the continuous balancing of generation and interchange with load (as required when the load being served is within the public utility's control area);
- Energy Imbalance Service, to provide for any difference between scheduled and actual deliveries of energy over an hour (as required when the load being served is within the public utility's control area);
- Operating Reserve - Spinning Reserve Service, to serve load immediately in the event of a system emergency (as required when the load being served is within the public utility's control area); and
- Operating Reserve - Supplemental Reserve Service, available in a short period to serve load in the event of a system contingency (as required when the load being served is within the public utility's control area).

During the 54-month period during which PECO's transmission and distribution charges will be capped, PECO expects to arrange for these services, which are offered under the Regional Tariff, as necessary to support the loads of the customers for whom it will act as Designated Agent.

Q. Will PECO's and PJM's evolving procedures regarding operation of the transmission system allow customers to provide any of these ancillary services for themselves following the 54-month transmission and distribution rate cap period?

A. As the alternative options for transmission service outlined above become available, and to the extent that FERC allows markets to develop for providing such of these services that need not be provided by the transmission system operator (PECO or the PJM System Operator or its successor ISO), PECO will alter its procedures and rates to allow these markets to develop.

Q. Is PECO seeking Commission approval of its proposed method for customers to procure and pay for transmission service during the 54-month period?

A. Because FERC has exclusive jurisdiction over such matters, PECO is not seeking Commission approval. As Mr. Miller details in his testimony, however, PECO is asking that the Commission actively support PECO's proposed method at FERC.

IX. SUPPLY OBLIGATIONS AND PROCEDURES, ENERGY BALANCING, AND LOAD RECONCILIATION

Q. How does PECO propose that a Supplier's supply obligations be established?

A. I believe that the method proposed by PECO in its Pilot should be adopted for the Phase-In and beyond. Accordingly, PECO will include in its Supplier Tariff detailed provisions similar to those set forth in the Pilot. For monthly metered customers, Suppliers would have to supply amounts based on load profiles for the

customer types they will serve. For demand interval metered customers, Suppliers would have to supply amounts determined by themselves through daily communications with these customers. Pursuant to evolving PJM requirements and as described in the Pilot, these amounts would be adjusted one day ahead for weather and known customer outages. To the extent that deliveries must be scheduled with the PJM Interconnection Office or a future ISO, either PECO or the Supplier would be responsible for such scheduling, as FERC rules allow.

Q. Can you elaborate on these supply procedures, and describe the necessary energy balancing and load reconciliation procedure that PECO proposes to use to coordinate and account for supply?

A. Yes. Again, PECO proposes to adopt the procedures it has proposed for the Pilot. PECO and PJM system operations and accounting, as well as the current and future requirements of wholesale market scheduling in the PJM region, require that the supply secured by Suppliers for retail customers matches the loads of those customers on an hourly basis. Because customer loads cannot be predicted in advance, the inevitable mismatch must be made up in real time, but accounted for after-the-fact. PECO proposes that this coordination of wholesale supply with retail load be handled as follows in the manner PECO has proposed for its Pilot:

1. For monthly metered customers, using load profiles that PECO will develop, PECO will provide an Aggregated Daily Load Curve ("ADLC") to Suppliers, which ADLC adjusted for weather and known outages one day ahead will constitute Suppliers' supply obligation.

2. PECO or the Supplier, as permitted by law, will schedule the required supply and arrange for any necessary PJM or ISO accounting adjustments.

3. For hourly metered customers, Suppliers will inform PECO one day ahead of the amounts they determine they will supply in each hour, and will be obligated to supply such amounts in each hour.

4. Suppliers will pay penalties for failure to deliver the ADLC or amounts scheduled for hourly metered customers.

5. PECO will cover under-deliveries, which a Supplier will pay for at the prevailing hourly wholesale market price (plus an administrative fee), and PECO will absorb and pay for over-deliveries at the prevailing wholesale hourly market price (less an administrative fee, and only if load for continuous hourly metered customers is within 5% of the amount scheduled by the Supplier). PECO will not pay for any over-deliveries in any hour in which the load is not within 5% of the amount scheduled by the Supplier. To determine the amount of these under-deliveries and over-deliveries with respect to monthly metered customers, PECO will adjust the ADLC using actual monthly usage data, but the resulting hourly loads necessarily will still be estimates. These hourly under-deliveries and over-deliveries will be determined monthly, and payments for such under-deliveries and over-deliveries will also be made monthly.

6. Real time, direct load following will be permitted, as long as the Supplier and customer have installed the necessary telecommunications and metering equipment in conformance with Commission and PECO metering requirements.

PECO proposes that the penalties, charges, and fees PECO has proposed in connection with this process in the Pilot be adopted for the Phase-In. To the extent that the costs PECO actually incurs in connection with this process suggest that PECO's charges need adjustment, PECO will propose changes to them.

Q. Is PECO asking the Commission to approve this balancing method?

A. Yes, except that FERC may assert jurisdiction over the sales and purchases between PECO and Suppliers that are part of the process. If FERC does so,

PECO or the Suppliers will have to file with FERC the required tariffs or service agreements.

X. SYSTEM PLANNING AND PROCEDURES TO ENSURE RELIABILITY

Q. Why are you describing proposed procedures to ensure reliability in your testimony?

A. As I said earlier, the preservation of existing levels of reliability is one of our primary objectives as we begin the transition to full Direct Access. This objective also permeates the language of the Competition Act, in which the General Assembly made clear that the preservation of reliability was of primary importance. For example, the very first of its enumerated interdependent standards that are to govern the regulation of the restructured electric industry provides that "the Commission shall ensure continuation of safe and reliable electric service to all consumers in the Commonwealth" (See §2804(1)).

Q. How is your testimony on reliability organized?

A. I will first describe the role of traditional system planning, which PECO has employed to ensure adequate generation resources to serve its customers' loads. I will then explain the role that I expect existing reliability institutions will play to ensure the adequacy of generation resources and the security of the transmission system. Then I will explain the role that an ISO will play in the future with regard to the operation of the transmission system, scheduling, and real-time balancing of

generation to load. I will explain, however, why it is not necessary for an ISO to be in place as of January 1, 1999, and why Direct Access can begin on that date in the absence of an up-and-running ISO. Finally, I will explain how the adequacy of generation resources can be assured when all customers have Direct Access, and how PECO expects to continue to maintain the reliability of its transmission and distribution systems.

Q. Can you briefly summarize how you believe that current levels of reliability can be preserved during and following the transition to full Direct Access?

A. I believe that existing levels of reliability can be preserved by:

(1) promoting the continued role of existing institutions, such as the North American Electric Reliability Council ("NERC") and regional reliability councils such as the Mid Atlantic Area Council ("MAAC"), in preserving electric system reliability;

(2) encouraging system operators to continue coordinating the real-time operation of the electric transmission system;

(3) relying on individual responsibility and accountability among Suppliers to maintain adequate generation reserves to serve their respective loads reliably and to cover unforeseen system emergency conditions; and

(4) relying on the free market principle of "caveat emptor" by encouraging customers to demand reliability of supply from their potential Suppliers.

1. Traditional System Planning

Q. What was PECO's overall corporate objective for determining the required level of generation resources for meeting customer energy demands when the Company planned its existing generation?

A. In planning its existing generation, PECO's objective was to provide safe, reliable and economic service to its customers.

Q. What factors were considered to achieve this objective?

A. To achieve this objective, the Company balanced a number of important factors, including the expected level of customer demand for service, the degree of service reliability, the relative cost, availability, mix, and economics of different types of supply resources, the Company's ability to finance supply alternatives, and the expected effect on customer rates. The Company also accounted for the possibility of forecasting errors inherent in making some of these projections so as to ensure sufficient lead time to add generating or transmission capacity. Building plants and transmission lines can take from 5 to 10 years.

Q. How has the Company projected customer demand in connection with this planning process?

A. PECO has used a load growth scenario that reflects the Company's most likely assumptions regarding economic variables such as household and employment growth. This scenario has been the base load growth scenario. This base load

growth scenario for years 1997 through 2006 is shown in Exhibit GAC-3 to my testimony. The base load growth forecast incorporates both end-use and econometric forecasts. Assumptions are first developed which affect all classes of service and then specific assumptions are developed to apply to each class. The impacts of load management programs, which include the possible interruption of load at the time of the system peak, are also represented in the load forecasts. The base peak demand less the interruptible load defines the net peak load that we have used in our planning studies.

Q. Please explain in more detail the concept of reliable service.

A. Electric utilities have been required by law to provide adequate and reliable service. From the standpoint of the adequacy of generation resources, reliability means that the probability of the demand exceeding available generating capacity is at an acceptable level. Thus, sufficient generation must be installed to meet forecasted peak demands in a reliable manner. To achieve this goal, generating capacity must be maintained in excess of anticipated peak load to provide a capacity reserve margin. This margin is necessary to allow for the day-to-day variations in the operating condition of installed generation (such as unit maintenance and unexpected forced outages), and for deviations in annual peak demand due to weather and business conditions.

Q. How has PECO determined the level of generation reserve required to provide reliable service?

A. Our customers have expected and depended on highly reliable electric service. The governing reliability criterion for the Mid-Atlantic Area Council (MAAC), of which PECO is a member, states that curtailments in electric service due to inadequate generation supply should not occur, on average, more often than one day every ten years. This criterion has been employed for over 25 years in the MAAC region.

Applying this one day in ten year criterion, PJM has calculated the required reserve level for PJM as a whole on the basis of expected peak load, expected generating capacity, unit forced outage rates, expected maintenance requirements, and expected capacity support from systems adjacent to PJM. This calculation results in an overall PJM reserve requirement. PECO, as a member of PJM, is currently obligated to provide its share of this PJM pool reserve.

Q. How did you determine the 18% reserve requirement used by Mr. Cohn to calculate stranded costs and by PECO's market price witnesses to project the market prices that PECO's generating assets will command?

A. The calculated PJM reserve requirement has shown a decreasing trend over the last ten years, from a value of 24.2% in 1989 to 18.7% in 1998. This downward trend can be attributed to lower generator forced outage rates and a reduced level of generator maintenance. The PJM Management Committee has recognized this

downward trend by lowering the value adopted for the contract reserve requirement in recent years. Similarly, PECO believes that an 18% reserve requirement is a reasonable and conservative assumption given the 1998 calculated value of 18.7% and the likelihood that the downward trend will continue, but will soon level off due to the maximum potential of unit availability being achieved and the increased potential of load forecast inaccuracies due to the current immaturity of the emerging retail market for electric generation.

Q. How has PECO made resource planning decisions before the advent of retail electric generation competition?

A. The primary objective in resource planning has been to ensure a balance between supply and demand as conditions change over time. Resources have been planned and implemented so that electricity is supplied to the ultimate customer in the most economical manner subject to the level of planned reliability of supply. PECO has therefore examined a number of reasonable and viable resource options that can be used to reliably and economically serve forecasted loads.

In conducting its resource analysis, PECO has first developed a list of potential resource options using its judgment and experience. The costs and benefits of each option have been analyzed using the revenue requirement methodology. Under this method, calculations have been made of the capital and operating costs of alternatives to determine the expected cost to the customer on a levelized basis over the expected life of the project. Revenue requirement analysis has allowed

consideration of capital, expense and project timing. The analysis has assumed that rate relief is perfect and that sufficient internal funds or external financing will be available. The preferred plan has then been chosen and generally represents the plan which yields the greatest net benefit of alternative fuel source mixes for the base set of assumptions.

Supply and demand must balance not only at the time of the highest demand but also at all other times. Demand varies based on customer needs and behaviors. PECO has therefore installed a mixture of generation and supply-side options that allow the system to meet this constantly changing need. The Company's present mix of generation therefore contains some units that run continuously to meet base demand, some that run only at certain times to meet peak demands, and some that store energy during off-peak periods for later use during peak periods, and supplements this portfolio with supply contracts when necessary and appropriate.

Q. Have the capacity resources that are included in the Company's total installed capacity, as set forth in Exhibit GAC-3, been selected based on planning decisions made in the manner you have described in your testimony?

A. Yes. The installed capacity resources represented include all existing PECO-owned generation assets. That is, all PECO-owned generation, including 356 MW of uprates made since the last base rate case in 1989-90, are reflected.

Q. How will PECO's overall planning methodologies as previously described be *impacted with the move to competition in electric generation in* Pennsylvania?

A. PECO, as a continued supplier of electric energy, will still be obligated to obtain, either by ownership or by contract, sufficient capacity to supply its forecast load plus an adequate reserve margin. Load forecasting methodologies and planning techniques, however, must be revised to account for variations in load since customers will choose competitive Suppliers. Free market forces will provide adequate supply in a well-conceived marketplace that sends the right economic signals to Suppliers.

2. Existing Reliability Institutions

Q. What regional reliability institutions operate in Pennsylvania?

A. NERC and two regional councils under NERC, which are MAAC, and the East Central Area Reliability Council ("ECAR").

Q. What role should these institutions play in preserving reliability?

A. To date, NERC, primarily through the actions of MAAC and ECAR, has served Pennsylvania well in maintaining the levels of reliability enjoyed by the Commonwealth's citizens. NERC and the regional councils are well-positioned to serve as the reliability watchdogs for the northeastern and mid-Atlantic regions and should continue in that role. In particular, the area councils should continue to

bear primary responsibility to adopt and implement standards of reliability which in turn would be reinforced through industry-wide efforts under the auspices of NERC.

For several reasons, NERC and the area councils are well-suited to address reliability issues that may arise in the transition to full Direct Access. First and foremost, these institutions have amassed substantial expertise on reliability issues and are familiar with Pennsylvania's specific needs. Second, these institutions presently are developing and implementing additional reforms to adapt to competition in electric generation. For example, NERC recently modified its bylaws to mandate its members' conformance and compliance with established NERC policies, standard principles and guides. Third, the councils already include in their membership and governance many of the future competitive Suppliers and other market participants.

The Commission should therefore support and reinforce the role of NERC and MAAC (or ECAR or any other legitimate reliability council) by requiring that, as a condition of their being licensed in Pennsylvania, all Suppliers belong to one of these councils and agree to abide by the reliability standards established by them. These reliability standards would apply to all Suppliers, including Pennsylvania utilities and their unregulated affiliates.

I note that in keeping with a generation free market philosophy, NERC has shifted

its focus primarily on how it can foster the reliability and security of utilities' transmission systems. I agree with this change in focus.

Q. How could the Commission monitor and enforce compliance with reliability requirements?

A. Existing complaint proceedings could be used to enforce, monitor or investigate claims of non-compliance with regional reliability standards. The Commission could fine or revoke the license of a Supplier that violates these standards.

3. The Role of the System Operator

Q. Has the Commission stated that an ISO should be created within PJM?

A. Yes. In a recent letter to PECO's President and CEO Corbin A. McNeill, Jr., which is attached as Exhibit GAC-4, the Commission has stated its desire that the existing PJM structure be transformed into an ISO. PECO is actively working with all stakeholders toward the creation of an ISO that will be acceptable to FERC.

Q. Does PECO or an ISO have to dispatch generation in addition to the Supplier's generation to ensure that the loads of Suppliers' customers are reliably served?

A. Yes. To maintain system integrity, PECO or a system operator must have the ability to control generation to ensure the stability and reliability of the

transmission and distribution system. This is because power generated and delivered by multiple Suppliers, which the laws of physics tells us will not follow the path that the Supplier's contract with its customer establishes, could adversely affect voltages and line loadings throughout the system, unless generation at various locations throughout the interconnected PJM system runs, or is shut down, to ensure that overall system voltages and line loadings are maintained at acceptable levels. This necessary coordination of the operation of the transmission and generation systems of PECO and other interconnected utilities is currently provided to PECO by the PJM Interconnection Office. In ECAR, each operating utility individually performs the corresponding function.

Q. What other system operations functions must PECO or a system operator perform to ensure reliability, and who will be the system operator of the future?

A. With respect to PJM, PECO expects that the PJM ISO will continue to perform these essential system reliability functions, and others such as scheduling transactions and real-time balancing of generation to load. In balancing, the ISO will rely on both the resources that Suppliers schedule to cover load as well as those resources that Suppliers and LDUs offer pursuant to "call contracts" with the ISO. In general, PECO expects that an ISO will be able to acquire the resources it needs to ensure the safe and reliable operation of the system.

An ISO will also continue in its vital role during periods of system emergencies, when it will be responsible for monitoring the operation of the control area, for declaring the existence of an emergency, and for directing the operations of market participants to manage, alleviate or end such emergencies. During such emergencies, the ISO must take whatever steps will be necessary to avoid the onset of widespread or cascading outages. The ISO's ability to control such events will depend, however, on market participants' quick response in following emergency procedures such as those that exist today. Such procedures would require them to suspend normal commercial activities and join in concerted actions such as connecting or removing generation or loads from the grid or dispatching specific resources.

Q. Is the creation of some type of ISO to replace the PJM IO moving forward at the Federal level?

A. Yes. As I noted earlier, FERC has ordered the implementation of a pool-wide, Open Access Transmission Tariff for PJM. Moreover, all PJM companies are presently participating in a collaborative process open to all interested market participants covering all issues pertaining to PJM Restructuring, including the creation of an ISO. These participants include the affected LDUs, large industrial and commercial retail customer groups, consumer advocates, and competitive Suppliers. These stakeholders have differing views on some issues concerning the restructuring the PJM pool, but all support the concept of an ISO and are working toward that goal. I note, however, that the legislatures of the States of New Jersey

and Maryland have not yet passed laws mandating retail competition. This may add complexity to the stakeholders' negotiations.

Q. How will PECO customers receive the benefits of an ISO?

A. Customers will benefit in three important ways. First, as discussed earlier, an ISO will provide non-discriminatory, pool-wide transmission service either: (1) directly to customers with demand metering that wish to procure transmission service on their own, or (2) indirectly to them through their Designated Agent, which might be PECO as the LDU, or a competitive Supplier. Second, as I also explained earlier, customers will benefit from the reliability of service that results from the system operation functions that the ISO will carry out. Third, the ISO will coordinate the dispatch and transmission of power transactions, take steps necessary to ensure transmission congestion relief, and provide ancillary services.

Q. Is it necessary that an ISO be in place as of the beginning of the Phase-In to Direct Access, which is scheduled for January 1, 1999?

A. No. As Mr. Miller explains in his testimony and as I also explained earlier, as of January 1, 1999, PECO will ensure that unbundled network transmission service is available to its customers by acting as their Designated Agent and procuring such service from PJM if a successor ISO has not yet been established. In addition, PJM and its member LDUs are capable of operating the transmission system and providing necessary ancillary services until an ISO is established.

4. Supplier Responsibility

Q. What is the best means of ensuring the adequacy of generation resources necessary to supply Pennsylvania loads?

A. In a competitive environment, the Commission can best ensure sufficient generation resources to meet load by relying on Supplier responsibility and accountability, and depending on the buying preferences of customers. The Commission can ensure reliability in the long-run by ensuring that the design of the retail market for electric generation works - a properly functioning market will send appropriate economic signals, which will mean that Suppliers will build or otherwise acquire sufficient generation resources to serve the needs of their customers and their customers' desired level of generation reliability. Before the emerging market matures, however, each Supplier should be required to obtain, either by ownership or by contract, sufficient capacity to supply its forecast load plus an adequate reserve margin. The Commission should rely on market mechanisms, including the loss of licensing, to enforce compliance.

Consistent with this principle of Supplier responsibility, a competitive market environment in electric generation should reflect the following premises: (1) all Suppliers would have a reliability requirement, based on their local council standards; (2) all Suppliers would arrange transactions or generation to meet their loads; (3) all Suppliers would be responsible for supplying their own loads economically through dispatchable resources and continuous monitoring of their

particular load requirements; and (4) all customers will hold their Suppliers accountable.

In a retail access environment, moreover, there are several methods for monitoring reliability. First, NERC and MAAC would be able to enforce compliance with their requirements and guidelines. In fact, NERC and MAAC are developing additional disciplinary measures for members for noncompliance. Second, the existing Commission complaint process provides a means for addressing non-compliance with reliability rules. Licenses should be revoked for material non-compliance. Third, system operators will forecast regional loads and capacity, which will provide important market information for those considering the construction of new generation. Fourth, specific information on scheduled transactions will be provided to the system operator via the proposed NERC energy transaction tagging system. Finally, development of information and trading capability, as embodied in futures contracts and other risk management tools, will provide meaningful criteria to encourage construction and satisfy market needs.

5. Transmission and Distribution Reliability

Q. Does PECO anticipate that retail competition may adversely impact the electric transmission and distribution infrastructures?

A. No, assuming that generation resources will continue to exist at different locations throughout PECO's service territory and the PJM region. The reliability of the transmission and distribution network is heavily dependent on the location of generation resources. If the evolving wholesale market in the PJM region develops such that it sends proper signals, PECO expects that generation resources will continue to be properly distributed throughout the transmission network, and that neither retail nor wholesale competition will adversely impact the transmission and distribution infrastructure. In such circumstances, we would not anticipate any appreciable change in the use of the transmission and distribution systems that would compromise reliability or otherwise require an increase in the need for maintenance activity. To be able to adequately maintain or upgrade its system, however, the Commission and FERC will have to allow PECO to recover all of its prudently incurred maintenance costs and the opportunity to earn reasonable rates of return on investments in distribution and transmission upgrades.

6. Physical Flow of Electricity in a Competitive Market for Electric Generation

Q. Please describe how electricity will physically flow in a competitive market.

Electricity is a flow of electrons that travel through multiple paths of least resistance in accordance with a principle that electrical engineers and physicists know as Ohm's Law. Ohm's Law provides that current is the ratio of voltage to resistance. Thus, when power generated by a Supplier arrives at a point of delivery on PECO's transmission network, it flows to the path of least resistance in accordance with Ohm's Law - that is, the power will flow through PECO wires that have impedances that are lower than the impedances of wires comprising alternative theoretical paths. Thus, power generated or supplied by competitive Suppliers will flow across PECO's transmission and distribution lines in accordance with Ohm's Law, and therefore physically occupy space on those lines that PECO could otherwise utilize.

Q. Are these facts about the physical flow of electricity used by any other witness in this proceeding?

A. Yes. In his testimony (PECO Statement No. 10), Mr. J. Gregory Sidak concludes that as a result of the physical occupation of PECO's transmission and distribution lines of power delivered by Suppliers, a physical taking of PECO's property has occurred.

XI. PROCEDURES TO ENABLE OFFERING OF INTERRUPTIBLE SERVICE

Q. Will PECO establish procedures that will accommodate offerings of non-firm electric supply service by Suppliers?

A. Yes, consistent with PECO's obligation to do so as provided in §2804 (2) of the Competition Act.

Q. Does PECO expect Suppliers to offer interruptible service?

A. Yes. Interruptible service offered by utilities has become increasingly popular in recent years, and PECO expects that a segment of the market may still find interruptible service offerings attractive. In particular, larger industrial and commercial customers that are able to interrupt their loads without significant impact on their businesses may continue to shop for cheaper interruptible energy.

Q. What procedures will PECO adopt to facilitate these kinds of interruptible service offerings?

A. To the extent that PECO, as the LDU, will have load management responsibility in the future industry structure, PECO will implement the required telecommunications and scheduling systems. When a Supplier wishes to interrupt its supply in accordance with its arrangement with its customer, it would have to inform both the customer and PECO. To the extent that PECO is responsible for scheduling the delivery that would otherwise have been made to serve the

customer's load, PECO would have to be able to adjust the delivery schedule accordingly. Following the end of the billing period during which such interruptions occur, PECO would have to make any necessary adjustments to ensure that the after-the-fact load reconciliation process associated with its energy balancing procedures appropriately reflected changes to the delivery schedule and the customer's load.

Q. What technological and other limits will there be on interruptible service?

A. I believe that PECO can only accommodate interruptible generation service for customers with automatically controlled, two-way demand interval metering. Without such metering, it would be impossible to determine whether customers have complied with interruption requests. In addition, if large numbers of customers do obtain such metering and obtain interruptible service, PECO would also need potentially complex and sophisticated systems to manage interruption requests and to monitor and enforce compliance. The absence of these systems in the short-run will limit the expansion of interruptible service offerings.

XII. PROCEDURES TO ENABLE SELF-GENERATION

Q. What procedures will PECO implement to ensure that customers may self-generate and operate in parallel with PECO's system?

A. PECO will follow the procedures that it already follows, and which are set forth in PECO's "Requirements for Parallel Operation of Non-Utility Generation," which

PECO refers to as its "Gray Book." I have attached the Gray Book to my testimony as Exhibit GAC-5. The Gray Book contains all of the requirements that a self-generator must meet to operate in parallel with PECO. There is probably no need to change them as a result of Direct Access, except to the extent that rules contained in the Gray Book assume that PECO will be the purchaser of all excess energy produced by a customer's generation facility. To the extent that self-generators wish to sell excess energy to other retail customers instead of to PECO, it may be necessary to change or add new rules with regard to the metering that will be required. To the extent that this and other comparable changes are required, PECO will modify its Gray Book.

In addition, as explained by Mr. William F. Sundermeir in his testimony (PECO Statement No. 13), PECO will unbundle its Auxiliary Service Rider, which contains the current terms and conditions under which PECO offers firm and interruptible back-up and maintenance power to customers that operation generation in parallel with PECO's transmission and distribution system. This means that to the extent that self-generating customers wish to obtain back-up or maintenance power from PECO, they will still be able to do so.

XIII. PROCEDURES TO ENSURE FULFILLMENT OF PECO'S OBLIGATION TO SERVE

Q. What will be the nature of PECO's obligation to serve in the foreseeable future?

A. During the period in which PECO will charge customers a CTC and/or ITC to recover its Transition or Stranded Costs, PECO's obligation to serve will remain unchanged. To the extent that during that period, customers are unable to obtain, or do not wish to obtain, their electric supply requirements from a competitive Supplier, PECO will be the Supplier of last resort. The Competition Act provides that following that CTC/ITC recovery period, the Commission must establish regulations to govern PECO's obligation to "connect and deliver and acquire electricity."

Q. Does your testimony address the nature and scope of the obligation to connect and deliver that will exist following the CTC/ITC recovery period?

A. No, it does not. PECO, however, will participate in the Commission rulemaking that will define the scope of that obligation to connect and deliver. My testimony concerns only how PECO would satisfy the obligation to serve during the CTC/ITC recovery period.

Q. How will PECO ensure fulfillment of its obligation to serve during the CTC/TTC recovery period?

A. As explained in the testimony of Mr. William F. Sundermeir (PECO Statement No. 13), PECO will offer and charge for unbundled generation service at a price that will ensure that the customer's total charges do not exceed the rate caps the Competition Act imposes. That is, PECO will charge an amount equal to the difference between the sum of the unbundled components, including the CTC, and the former total bundled rate (less any reduction associated with the securitization of some of PECO's Transition or Stranded Costs). To prevent "gaming" of its rates, PECO will require any customer that remains with PECO, voluntarily switches to PECO, or defaults back to PECO, to remain under contract for at least one consecutive twelve (12) month period.

Q. How will PECO secure supply to be able to serve customers that do not receive service from a Supplier?

A. PECO will procure supply for such customers based on cost, reliability of supply, and the nature of other terms and conditions of supply. This might mean use of its own generating assets or those of its affiliates, pool purchases, energy purchased in response to a Request for Proposals from potential wholesale suppliers, or any other method of procurement that is permitted by Federal and applicable Pennsylvania and other States' laws.

XIV. SYSTEMS THAT PECO WILL NEED TO IMPLEMENT PROCEDURES

Q. What systems will PECO need to upgrade or acquire to be able to implement the procedures you have outlined above?

A. PECO will need to enhance or create many systems to be able to implement the above procedures. The first that comes to mind is our customer service system. PECO will need to enhance or expand its existing customer service capabilities. Customers will have a whole new set of questions and concerns in addition to those that require them to communicate with PECO today. PECO will need to upgrade its existing telephone and related systems to be able to handle the increased call volume that will likely result. PECO will also have to train its customer service representatives to enable them to answer customers' questions. In addition, PECO will need to have in place systems that will enable PECO to direct inquiries, when appropriate, to the appropriate Supplier.

Q. What other systems need to be enhanced or created?

A. Another need is a new customer billing system. The system must be able to calculate and generate bills that contain unbundled charges for PECO's regulated delivery services, and for the CTC and ITC. It must also include Supplier charges in the formats that I have outlined above. With respect to those charges, the system would also have to accommodate different prices charged by the same Supplier to different customers. Because PECO's current billing system is not

capable of performing these tasks, PECO will have to acquire an entirely new billing system.

We will also need to acquire another billing system that would enable PECO to bill Suppliers for the services that PECO provides them, and that would allow PECO to remit to Suppliers amounts it owes them. At a minimum, PECO would need to bill Suppliers for the Company's billing services as well as for any energy supplies made up as part of the balancing process. In addition, pursuant to the balancing process PECO will need to pay Suppliers for many (but not all) over-deliveries. PECO does not yet have systems in place to perform these functions. This Supplier billing system, or perhaps yet another separate and distinct system, must be able to transfer metering data and other billing determinants to Suppliers that wish to bill for their services separately. The Company will also need additional employees and computer capabilities to handle the increased number of entries associated not only with providing energy balancing services, but also with other ancillary and related services required for full Direct Access.

PECO will also need new computer systems, and additional employees, to handle the development and management of the load profiling process that, given current metering technology, will be necessary initially to accommodate Direct Access. People and computer systems will have to: (1) develop and adjust standard load curves; (2) calculate Supplier delivery amounts using those load curves; and (3)

inform Suppliers of the resulting supply obligations.

Finally, PECO will eventually need the required computer and telecommunications systems for querying AMR metering equipment, and for performing other functions relating to the operation of a system with AMR metering.

Q. Has PECO taken steps to develop or acquire these and other necessary systems?

A. Yes, it has. PECO will have the necessary systems and corresponding organization in place before the beginning of the Phase-In on January 1, 1999.

XV. CONCLUSION

Q. Do you have any concluding thoughts?

A. Yes. My testimony has covered many important procedures that PECO will have to deploy to successfully enable Direct Access. It is our objective that the transition to full Direct Access be a smooth one that will be fair to all stakeholders, produce benefits for all customers, and preserve existing levels of reliability. In developing and implementing the procedures that I have described above in my testimony, PECO will work diligently to ensure that that these goals are achieved.

Q. Does that conclude your direct testimony?

A. Yes, it does.

Exhibit GAC-1

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PROPOSED RETAIL ACCESS PILOT PROGRAM
AND PETITION OF PECO ENERGY COMPANY FOR
APPROVAL THEREOF, SUBMITTED IN ACCORDANCE WITH
SECTION 2806(G) OF THE PENNSYLVANIA PUBLIC UTILITY CODE

DOCKET NO. P-00971170

February 27, 1997

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February 27, 1997

Mr. John G. Alford, Secretary
Pennsylvania Public Utility Commission
North Office Building - P.O. Box 3265
Harrisburg, PA 17105-3265

RE: PECO Energy Company Petition For Approval Of Retail Access Pilot Program, Docket No. P-00971170

Dear Mr. Alford:

In conformance with Section 2806(g) of the Pennsylvania Public Utility Code, PECO Energy Company ("PECO Energy") hereby submits an original and fifteen (15) copies of the following:

1. Petition for Approval of PECO Energy Company's Retail Access Pilot Program under Section 2806(g) of the Public Utility Code (the "Petition").

2. Exhibit "A" to the Petition with Appendices A-G - Proposed Retail Access Pilot Program.

3. Exhibit "B" to the Petition - Proposed Service Agreement between PECO Energy and Itself for Network Transmission Service for filing with the Federal Energy Regulatory Commission.

4. Exhibit "C" to the Petition - Notice of PECO Energy's Petition which was placed in newspapers of general publication within PECO Energy's service territory.

In conformance with the Commission's Order entered January 16, 1997, at Docket No. M-00960890 regarding Retail Access Pilot Programs - Guidelines, and its Order entered January 24, 1997, at Docket No. M-00960890F0005 regarding Restructuring Filings and Retail Access Pilot Program Filings, PECO Energy has served a copy of the above or notice thereof as follows:

1. The Notice attached as Exhibit "C" to the Petition has been published in the *Philadelphia Inquirer* and other daily and weekly newspapers of general circulation within PECO Energy's service territory.

2. The entire filing is available on the Internet at PECO Energy Company's home page at http://www.libertynet.org/peco/.

3. Copies have been served on the Office of Consumer Advocate and Office of Small Business Advocate.

4. Copies have been served on all active parties in PECO Energy's last base rate case and on those that have already requested copies in writing.

5. Copies have been served on each Commissioner and the Office of Chief Administrative Law Judge.

6. Notice of Filing, including the address to which all written requests for copies of the filing should be directed, has been served on all persons on the Commission's stakeholder list.

7. A copy of the entire filing is available for examination at PECO Energy's Customer Service Center located at 2301 Market Street, Philadelphia.

8. Copies of the filing have been provided to the State Library of Pennsylvania in Harrisburg, the main branch libraries in Bucks, Chester, Delaware, Montgomery, and York counties, and the main branch and regional branch libraries in Philadelphia County.

Also, attached to this letter is a Certificate of Service which contains a list of the parties that have been served on this date by first class mail with copies of the filing or notice thereof, and a diskette containing the entire filing in Microsoft Word and Microsoft Excel format.

Would you please acknowledge receipt of the above on the enclosed copy of this letter.

Sincerely,

Noel H. Trask

NHT/rlk

Enclosures

cc: Certificate of Service

Certificate of Service

I hereby certify that I am serving the foregoing, PECO Energy Company's Petition For Approval Of Retail Access Pilot Program, dated February 27, 1997, by hand delivery or by first class, upon the persons addressed below:

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I hereby certify that I am serving Notice of PECO Energy Company's Petition For Approval of Retail Access Pilot Program dated February 27, 1997, by first class U.S. mail upon the persons addressed below:

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Dated: February 27, 1997

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition for Approval of -	:	
PECO Energy Company's	:	Docket No. P-00971170
Retail Access Pilot Program	:	

PETITION OF PECO ENERGY COMPANY FOR APPROVAL OF ITS RETAIL ACCESS PILOT PROGRAM

Pursuant to 52 Pa. Code § 5.41, and § 2806(g) of the Electric Generation Competition and Customer Choice Act, 66 Pa.C.S. § 2801 et seq. (the "Act"), PECO Energy Company ("PECO Energy" or the "Company"), hereby petitions the Pennsylvania Public Utility Commission (the "Commission" or "PA PUC") to review and approve for implementation PECO Energy's proposed retail access pilot program, (attached hereto as Exhibit "A," and hereinafter referred to as the "Pilot"). Under the Pilot, a significant number of businesses located in Enterprise Zones, all residential customers in one borough or township in the suburban counties that PECO Energy serves, all residential customers in one political subdivision in the City of Philadelphia, as well as approximately five percent of the remainder of the peak load of each of PECO Energy's principal customer rate classes will be eligible to obtain their electric supply requirements from third party suppliers ("Electric Generation Suppliers"). This is the critical first stage in the transition to full Direct Access (as defined in the Act), under which all PECO Energy customers will be able to obtain their electric energy requirements from Electric Generation Suppliers.

PECO Energy has designed the Pilot to promote the development of an efficient, robust competitive market for generation in which Electric Generation Suppliers will not face unnecessary barriers to entry. In fact, PECO Energy has gone to great lengths to ensure that Electric Generation Suppliers will be able to serve customers in the Pilot. For example, the design ensures that Electric Generation Suppliers will not be hampered by either existing rules and regulations that govern the wholesale market or existing technological limitations, which in some instances would render Electric Generation Suppliers unable to obtain certain services that are essential to Direct Access. The rules in the Pilot provide that PECO Energy will provide all such services to Electric Generation Suppliers. PECO Energy believes that without such support from utilities, pilots cannot be successful, and therefore PECO Energy has tried to design all aspects of the Pilot to facilitate Electric Generation Suppliers' access to customers.

As part of this effort to design its pilot "in a spirit which seeks to facilitate competition" (Statement of Commissioner David W. Rolka, January 16, 1997 concerning the Commission's Retail Pilot Guidelines), PECO Energy held a series of meetings for interested parties including marketers, customer groups, and representatives of customer groups. Through these meetings, the participants provided PECO Energy valuable insights and suggestions, many of which are incorporated in the Pilot.

Power delivery under the Pilot is scheduled to begin in the October, 1997 billing month. If by that date, however, the requisite support systems are not yet operational, or if all necessary regulatory approvals have not been obtained, PECO Energy

reserves the right to delay power delivery until all required systems are in place. In the event of any such delay, PECO Energy will notify the Commission, marketers, suppliers and customers as soon as the Company has a firm start date. Under no circumstance, save a prohibition under the law, will power delivery begin later than January 1, 1998.

In support of its Petition, PECO Energy states as follows:

1. PECO Energy is a public utility furnishing electric service to over 1,500,000 customers in all or parts of Bucks, Chester, Delaware, Montgomery, Philadelphia, and York Counties.

2. Because the Pilot contains rates, terms and conditions of service pertaining to electric energy transmission and the dispatch, control and coordination of bulk power supplies that will be resold to retail customers, the Pilot will also be subject to Federal Energy Regulatory Commission ("FERC") approval. The approval PECO Energy seeks from the Commission, therefore, is necessarily conditional in nature, and therefore PECO Energy will not commence power delivery under the Pilot until and unless it obtains both Commission and FERC approval.

3. With regard to transmission service and related FERC jurisdictional services, PECO Energy's proposed Pilot design assumes that PECO Energy will procure network transmission service from itself under its currently filed FERC Open Access Transmission Service Tariff as agent for the retail customers that obtain their energy supply from Electric Generation Suppliers. PECO Energy also will obtain all necessary ancillary services described in the Pilot under its Open Access Transmission Service Tariff. The proposed service agreement that PECO Energy would enter into with itself to obtain such network transmission service, and which PECO Energy would

file with the FERC following conditional Commission Approval of the Pilot, is attached hereto as Exhibit "B."[1] As the Pilot and the attachments to the proposed service agreement make clear, PECO Energy would recover the costs it incurs to procure such network transmission service through unbundled charges that Pilot customers obtaining their supply from Electric Generation Suppliers would pay to PECO Energy. Appendix B to the Pilot explains in more detail how PECO Energy has designed these charges using allocation and rate design methods that it typically uses to design rates at the retail level.

PECO Energy's reasons for this proposed method of procuring transmission service for Pilot customers, and recovering the cost of such service, are as follows:

(1) The proposed method satisfies the FERC's requirement of comparable access. PECO Energy will be obtaining transmission service on the same terms and conditions and in the same way any other customer can under PECO Energy's Open Access Transmission Service Tariff.

(2) The proposed method allows the broadest possible access to Electric Generation Suppliers because the nature of the transmission service is network service. Thus, any supplier that can deliver power to a point of receipt available to PECO Energy under its Open Access Transmission Service Tariff will be able to serve eligible Pilot customers.

[1] If, during the term of the Pilot, the FERC approves a new regional transmission service tariff in the context of the currently pending FERC proceeding regarding the restructuring of the Pennsylvania-New Jersey-Maryland Interconnection ("PJM"), then PECO Energy would file a new service agreement between PECO Energy and the restructured power pool for the required network service. PECO Energy also notes that FERC may require PECO Energy to file a Power Purchase and Sales Agreement that would govern the sales and purchases of energy PECO Energy will make as part of the energy balancing process described in the "Electric Generation Supplier/PECO Energy Required Payments and Schedule of Rates" Section of the Pilot (§ VII (D-4)).

(3) The proposed method is consistent with the Commission's stated objective of ensuring that the charges customers pay are based on rate designs that "maintain consistency with the allocation methodology for utility production plant accepted by the Commission in the electric utility's most recent base rate proceeding" (February 13, 1997 Order re Restructuring Filing Requirements, Appendix A, p. 22). The charges customers will pay to PECO Energy are designed in accordance with this requirement, and therefore avoid any inter-class or intra-class subsidization.

(4) The method avoids the need for all customers to have installed demand metering, which virtually none of PECO Energy's approximately 1.2 million residential customers have, and which many of PECO Energy's small commercial customers also do not have. Such metering would be required if retail customers were to have to obtain network transmission service directly from PECO Energy on a comparable basis under its Open Access Transmission Service Tariff. The reason is that the allocator for network service costs is contribution to peak system demand, which cannot be determined for customers that do not have demand metering.

4. The Pilot is designed to simulate actual conditions of a competitive energy market in which PECO Energy will be, at least in part, a local distribution utility that will transmit and distribute to retail customers electric energy generated and/or supplied by Electric Generation Suppliers. The proposed Pilot, therefore, contains a comprehensive blue print for set-up, operation, evaluation, customer education and protection. As such, the Pilot establishes mechanisms to ensure fair access to

wholesale related services and to enhance the Company's technical and operational systems. In addition, to promote reliable service, the Pilot requires PECO Energy to act as the back-stop for Electric Generation Suppliers through energy balancing, and includes reasonable penalties that Electric Generation Suppliers will pay for failing to comply with their supply obligations.

So that customers can make informed choices regarding their energy supply options, the Pilot contains a comprehensive customer education plan (See Appendix "D"). To further customer protection goals, the Pilot also retains and makes applicable to all Electric Generation Suppliers existing Chapter 56 requirements associated with residential customers. Finally, to enable the Company to assess the potential effects of full Direct Access, the Pilot incorporates extensive procedures for evaluating assumptions and hypotheses about electric generation competition. The Company will file quarterly reports of its findings with the Commission.

5. The Pilot also incorporates the majority of the substance of the Commission's Final Order on Retail Access Pilot Programs-Guidelines entered January 16, 1997 (the "Guidelines"). In her statement accompanying the Guidelines, Vice Chairman Crutchfield expressed the hope "that the guidance contained in this document will assist the industry in implementing retail access pilot programs in an expeditious manner." Indeed, the Guidelines were extremely helpful to PECO Energy in designing the Pilot. With a few exceptions, the Company's Pilot follows the Guideline's recommended parameters.

The principal exceptions are: (1) for customer selection, the Pilot will not require that customers whose total load represents approximately five percent of the peak load

of each rate class actually choose an Electric Generation Supplier; and (2) paragraph three of the Commission's Sample Code of Conduct (Appendix C of the Guidelines) has been omitted.

With regard to customer selection, PECO Energy proposes to select customers in three ways. First, to accommodate the demographics of its customer base and facilitate effective aggregation for residential and small commercial class customers as the Guidelines recommend, (Guidelines at p. 8, Appendix B at p. 2) the Pilot will provide that all residential customers located within one township or borough in PECO Energy's suburban counties, and within one political subdivision in the City of Philadelphia, will be eligible to participate. The township or borough and political subdivision will be selected randomly by a neutral third party from a pool of townships and boroughs in the suburbs, and of political subdivisions in the City, that fit certain size criteria. Second, PECO Energy will engage a neutral third party to randomly select, from across the Enterprise Zones located in PECO Energy's territory, commercial and industrial customers whose total loads will equal approximately 75 MW. Third, the neutral third party will also randomly select, from across PECO Energy's entire service territory, additional customers whose total loads will represent approximately five percent (5%) of the total 1995 annual peak load of each of the Company's principal customer rate classes.

PECO Energy will not conduct additional rounds of random selection to ensure that at least 5% of the peak load of each rate class enters into contracts with Electric Generation Suppliers. The reason for this variance from the Guidelines is that a true random sample will enable PECO Energy and the Commission to gather information

not only to evaluate the success of the Pilot but also to make inferences about customer behavior on which they can legitimately rely to generalize about what may happen in the future fully competitive market. Using this information, PECO Energy and the Commission should then be able to make appropriate adjustments to improve processes or to otherwise encourage broader participation. For example, PECO Energy could conduct research regarding the effect educational materials have on customers' decisions and modify its educational materials accordingly.

PECO Energy also observes that its proposed random selection method follows Commissioner Rolka's recommendation to provide eligible customers with "a genuine opportunity to exercise a choice" (Statement of Commissioner David W. Rolka, January 16, 1997). The Pilot's method for customer selection enables more than five percent to choose an Electric Generation Supplier, but does not compel them to do so. Thus, PECO Energy's method better approximates conditions that will prevail with full Direct Access in which choosing to stay or do nothing will in fact be a choice customers will have.

To preclude unfair business practices, the Pilot contains standards of conduct applicable to PECO Energy's relationship to its unregulated affiliates.[2] The Pilot standards of conduct (§ IV (E)) vary materially from the Commission's Sample Code of

[2] The Pilot provides that PECO Energy will participate in the Pilot as an Electric Generation Supplier only through an unregulated affiliate. The affiliate is Horizon Energy Company. PECO Energy notes, however, that the Affiliated Interest Agreement between Horizon Energy Company and PECO Energy, which was filed originally on November 18, 1996 (Docket No. G-00960526), has still not received Commission approval. Without such approval, Horizon will be legally unable to participate. Therefore, absent timely approval of the Affiliated Interest Agreement, and as permitted by the Commission's Guidelines on pilot programs, PECO Energy will participate through a functionally separate marketing division or group rather than through a separate, unregulated affiliate. The standards of conduct contained in the Pilot would then be applicable to such division or group rather than to an unregulated affiliate.

Conduct in only one pertinent part. PECO Energy omitted the third provision of the Commission's sample, which would require that power be offered simultaneously to competitive affiliates and the open market.

The Company's first reason for eliminating this provision is that it covers wholesale power transactions over which the FERC, and not the Commission, has exclusive jurisdiction. Federal Power Commission v. Southern Cal. Edison Co., 376 U.S. 205 (1964); Arkansas Power & Light Co. v. Federal Power Commission, 368 F.2d 376, (Ark. 1966). Second, any wholesale power transaction between PECO and any retail marketing affiliate would already be regulated by FERC, and would have to be made pursuant to a FERC-filed Tariff. Third, such a provision is unnecessary to prevent discriminatory pricing, since PECO Energy does not own or control the majority of generation capacity located in the PJM region. Finally, the provision is too indefinite as it is unclear for how long, at what price, and for how many marketers PECO Energy or its affiliate would be required to stand ready to offer power. If interpreted liberally, rather than leveling the playing field, such a requirement could seriously disadvantage any PECO Energy affiliate that attempts to participate in the Pilot, in contravention of the Commission's stated goal to "establish fair business practice requirements." (Guidelines at p. 3).

6. With regard to rates, the Pilot contains charges for transmission designed in the manner described above in paragraph 3, and unbundled distribution rates that participating Pilot customers will pay to PECO Energy for distribution service. The Pilot also contains charges through either a Competitive Transition Charge ("CTC") or Intangible Transition Charge ("ITC") for Transition or Stranded Costs (as defined in the

Act), which, for purposes of the Pilot are primarily generation-related. For a detailed explanation of the method and process the Company used to develop the CTC and unbundled rates for transmission and distribution, PECO Energy refers the Commission to Appendix B to the Pilot.

As Appendix B describes in detail, PECO Energy unbundled energy from its other charges using all hours average marginal energy price forecasts for each rate class that are as representative as possible of actual market conditions during the term of the Pilot, and that are not artificially low. This means that Electric Generation Suppliers should be able to offer prices that will allow customers to achieve some savings.

To provide for securitization of some or all of its Transition or Stranded Costs pursuant to § 2812 of the Act, the unbundled rates in the Pilot also contain a place holder for the ITC. The initial portion of such costs PECO Energy is allowed to securitize through the issuance of bonds and the corresponding impact on PECO Energy's rates will be determined in the pending securitization filing (Application of PECO Energy for Issuance of A Qualified Rate Order Under Sections 2808 and 2812 of the Public Utility Code; Docket No. R-00973877). As soon as the Commission establishes that amount, the Company will propose an ITC for the Pilot rate classes, and corresponding reductions to the CTC for each such class. The result of these adjustments will be that participating Pilot customers will receive the same net rate reduction as all other PECO Energy customers.

In addition, because the CTC contained in the Pilot's unbundled Pilot rates is not based upon a specific claim for Transition or Stranded Costs, the Company is not

asking the Commission to approve the Pilot's CTC for use when full Direct Access begins. Rather, the total transition and stranded cost amount to which PECO Energy is entitled will be determined in the Commission's proceeding on PECO Energy's Restructuring Plan, which PECO Energy will file on or about April 1, 1997. To reflect the Restructuring Plan Order the Commission issues (pending appeals by PECO Energy of that Order, if any), the Pilot's CTC rates, as adjusted following the securitization filing, will be replaced with the then newly approved CTC rates.

7. With regard to service and notice, PECO Energy has complied with the Commission's Order at Docket No. M-00960890 regarding Retail Access Pilot Programs (entered January 16, 1997), and its Order at Docket No. M-00960890F0005 regarding Restructuring Filings and Retail Access Pilot Program Filings (entered January 16, 1997 as follows:

- The original and fifteen (15) copies of this Petition, and the Exhibits attached hereto, have been filed with the Commission, and a diskette containing the entire filing has also been provided;
- This Petition, and the Exhibits attached hereto, is available on the Internet at PECO Energy's home page at http://www.libertynet.org/peco/;
- This Petition, and the Exhibits attached hereto, have been served on the Office of Consumer Advocate, the Office of Small Business Advocate, each Commissioner, the Office of the Chief Administrative Law Judge, all active participants in PECO Energy's last base rate case, and on all parties that have already requested copies in writing;

- A notice of this filing, which includes the address to which all written requests for copies of the filing should be directed, has been served by first class mail on all those on the Commission's Stakeholder list;
- A copy of the Petition has been made available for inspection at PECO Energy's main office located at 2301 Market Street, Philadelphia, PA;
- This Petition, and the Exhibits attached hereto, have been provided to the main branch of local libraries located within PECO Energy's service territory, and the State Library of Pennsylvania located in Harrisburg; and
- PECO Energy has published notice of the filing, in the form attached hereto as Exhibit "C," in the *Philadelphia Inquirer* and other daily and weekly newspapers of general circulation within PECO Energy's service territory.

PECO ENERGY CONTACTS

To facilitate informal resolution of all questions and concerns regarding the Pilot, PECO Energy provides the following list of contacts:

General	Brian Crowe Telephone: (215) 841-5316 Fax: (215) 841-4430
Rates	Alan Cohn Telephone: (215) 841-5769 Fax: (215) 841-6447
Legal	Noel Trask Telephone: (215) 841-4256 Fax: (215) 568-3389

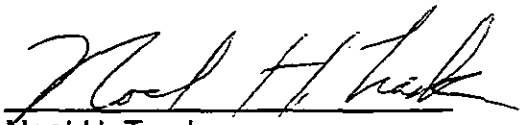
CONCLUSION

The Pilot will provide a realistic test of the effects of electric generation competition and affords customers a genuine opportunity to choose. The Pilot has been designed to promote a strong competitive market that may produce lower energy prices for customers. It has also been designed to preserve current reliability and ensure that neither Electric Generation Suppliers nor participating customers will be unfairly disadvantaged. As such, the Company's fair and workable Pilot is a crucial first step in the transition to Direct Access.

WHEREFORE, the Pilot should be approved for implementation and become effective following its approval by the FERC.

Respectfully Submitted,

PECO ENERGY COMPANY



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February 27, 1997

VERIFICATION

I, T. P. Hill, Jr., hereby declare that I am Vice President and Controller of PECO Energy Company; that as such I am authorized to make this verification on its behalf; that the facts set forth in the foregoing Petition are true to the best of my knowledge, information and belief, and that I make this verification subject to the penalties of 18 Pa. C.S. §4904 pertaining to false statements to authorities.

Date: February 27, 1997

T. P. Hill, Jr.

Sworn to and subscribed before me
this 18th day of Feb. 1997

NOTARIAL SEAL
KEITH R. WILKERSON, Notary Public
City of Philadelphia, Phila. County
My Commission Expires Jan. 31, 2000

Keith Wilkerson

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PECO Energy Retail Access Pilot Program - Docket No. P-00971170

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PECO ENERGY RETAIL ACCESS PILOT PROGRAM
(Docket No. P-00971170)

I. DEFINITIONS

The following terms shall have the meaning stated below when used herein:

The *"Act"* shall mean the Electricity Generation Customer Choice and Competition Act, 66 Pa.C.S. §2801, et seq.

"Aggregator" shall mean an entity, licensed by the Commission, that purchases electric energy and takes title to electric energy as intermediary for sale to Participating Customers (as defined below).

"Broker" or "Marketer" shall mean an entity, licensed by the Commission, that acts as an agent or intermediary in the sale and purchase of electric energy, but which does not take title to electric energy.

"Bundled Rates" shall mean the base Rates and available riders contained in PECO Energy's Tariff - Electric Pa. P.U.C. No. 2 or any successor Tariff.

"Commission" shall mean the Pennsylvania Public Utility Commission.

"Competitive Transition Charge" or "CTC" shall mean a nonbypassable charge applied to the bill of every Participating Customer (as defined below) that chooses an Electric Generation Supplier (as defined below) under the Pilot, which charge is designed to recover PECO Energy's Pilot Transition or Stranded Costs (as defined below).

"Customer" shall mean a PECO Energy customer at a single point of delivery under Rate Schedule R, R-H, GS, PD, HT, EP, SL-S, or SL-E.

"Direct Access" shall have the meaning set forth in the Act.

"Electric Delivery Service" shall mean unbundled transmission and distribution service.

"*Charges for Electric Delivery Service"* shall mean all unbundled charges for Electric Delivery Service, and for Pilot Transition or Stranded Costs (as defined below) through either a Competitive Transition Charge or an Intangible Transition Charge.

"Electric Generation Supplier" shall mean a supplier of electric energy other than PECO Energy (but not excluding a PECO Energy unregulated affiliate) that has been licensed with the Commission and that has satisfied PECO Energy's pre-qualification screening process and is therefore granted the right to enter into contracts with Participating Customers for the supply of the Participating Customer's electric energy requirements. Aggregators, Brokers, and Marketers may be Electric Generation Suppliers.

"Eligible Customer" shall mean a Customer that is selected in accordance with the eligible customer selection process described herein.

"Enterprise Zone" shall mean an Enterprise Zone, as described in 16 Pa.C.S. § 23.1, *et* seq., of the Pennsylvania Code.

"FERC" shall mean the Federal Energy Regulatory Commission.

"Intangible Transition Charge" or *"ITC"* shall have the meaning set forth in the Act.

"Local Distribution Utility" or *"LDU"* shall mean the public utility providing facilities for the jurisdictional transmission and distribution of electricity to Customers, except building or facility owners/operators that manage the internal distribution system serving such building or facility and that supply electric power and other related electric power services to occupants of the building or facility.

"Participating Customer" shall mean a Customer that is an Eligible Customer and that enters into a contract with an Electric Generation Supplier.

"The Pilot" shall mean this retail access pilot program under which PECO Energy will provide unbundled transmission and distribution service to Participating Customers.

"PJM" shall mean the Pennsylvania-New Jersey-Maryland Interconnection.

"PJM System" shall mean the transmission facilities located in the Mid-Atlantic Region that are owned and controlled by the member companies of the Pennsylvania-New Jersey-Maryland Interconnection.

"Pilot Transition or Stranded Costs" shall mean PECO Energy's known and measurable net electric generation-related costs, determined for purposes of the Pilot using current dollars, which traditionally would be recoverable under a regulated environment but which would not be recoverable in a competitive electric generation market.

II. INTRODUCTION

The Pilot is a plan for Direct Access by current PECO Energy Customers to Electric Generation Suppliers. It contains comprehensive rules and procedures regarding Pilot set-up, operation and evaluation, and therefore covers customer selection, customer education, Electric Generation Supplier pre-qualification, contractual requirements for both Participating Customers and Electric Generation Suppliers, and energy balancing. Though many technical questions will arise from any plan for Direct Access to competitive power generation, the chief objectives of all involved should be as follows:

- To give Customers choice and control over the energy services they receive and over the providers of those services;
- To foster a functioning competitive market for the supply of retail energy services;
- To design systems so that the market will generate efficiencies that will produce lower energy prices for Customers, and
- To ensure that the development of a functioning competitive market does not compromise the reliability of the electric system.

Achieving these objectives, and the objectives set forth in the Commission's Final Order on Retail Access Pilot Programs - Guidelines, entered January 16, 1997, in a manner that is satisfactory to buyers, sellers, and market intermediaries presumably will take years. Pilot programs will be the first major steps in this transition. Indeed, the results of this Pilot and of all of the others across the Commonwealth will serve as important guides to the eventual implementation of full Direct Access.

Accordingly, the Pilot's design emphasizes equally: the reliable supply and delivery of electricity; the education of Customers, Electric Generation Suppliers, and employees of PECO Energy; an orderly process to integrate the operation of PJM with the entrance of many Electric Generation Suppliers at the retail level; and the substantial enhancement of PECO Energy's existing infrastructure – i.e., the nuts and bolts of delivery of third party competitive supply such as billing, metering, and energy balancing – and its conformance to a competitive marketplace.

PECO Energy also begins this transition to full Direct Access with a set of hypotheses that PECO Energy will test during the Pilot. Will selling electric generation in a competitive marketplace be about the same as selling any other consumer product, complete with the gimmicks and giveaways that are by now familiar to long-distance telephone customers? What is the magnitude of achievable savings in the energy marketplace? How will Customers respond to product offerings that may entail more risk than that to which they have been accustomed?

Many more questions will emerge as we move closer to the first day energy flows under the Pilot and as the program gathers momentum. The defining feature of a pilot is the willingness to retain what works, discard what does not, and move ahead with

something that is both bigger and better. PECO Energy respectfully submits the Pilot in that spirit.

III. DESIGN PRINCIPLES

To design an effective system of Direct Access that will result in a functioning competitive market for electric generation that can yield savings for Customers requires resolution of an enormous number of technical and operational issues. Success also depends on the development of a significant number of new sophisticated systems and mechanisms. PECO Energy and all other Pennsylvania electric utilities will need these new systems and mechanisms to enable successful coordination of supply and reliable operation of their transmission and distribution systems. To provide a frame of reference for use in resolving these issues and designing these systems, PECO Energy developed and followed the following design principles:

1. The Pilot should be designed to maximize the likelihood that Customers will understand the choices they will have, the nature of the services they will receive from Electric Generation Suppliers, the nature of the services they will continue to receive from PECO Energy, and the potential costs and benefits should they choose to receive their electric energy requirements from an Electric Generation Supplier. Accordingly, the Pilot contains a comprehensive plan for customer education, and unbundled rates for services. Both of these features will enable customers to maximize the potential benefits to them of Direct Access.

2. The Pilot should be designed so that access to the supplies of Electric Generation Suppliers will not be limited by the inability of such suppliers to obtain certain wholesale-related services from PJM that must be performed to coordinate supply, balance the system, and ensure reliable operation of the PJM system. To achieve this design objective, PECO Energy has designed the Pilot to require PECO Energy, which is a member of PJM, to provide these types of services for Electric Generation Suppliers for a reasonable charge.

3. The Pilot should be designed to mirror, as much as possible, conditions that will prevail when full Direct Access for all Customers occurs. Accordingly, consistent with the requirements of the Act, the Pilot contains a mechanism for the recovery of Pilot Transition or Stranded Costs from Customers that choose to obtain supply from Electric Generation Suppliers. In addition, it requires the provision of services by PECO Energy or Electric Generation Suppliers (as appropriate) that will be necessary to enable full Direct Access, including scheduling, energy balancing, and reconciliation of customer load with supply.

4. The Pilot should be designed to promote a robust competitive market without sacrificing safe and reliable service. The inclusion of reasonable penalties for failure to comply with supply obligations as part of the energy balancing system contained in the Pilot is an example of an important feature of the Pilot that adheres to this design principle.

5. The Pilot should be designed to prevent any Electric Generation Supplier from having unfair advantages. Accordingly, the Pilot contains standards of conduct applicable to PECO Energy's relationship to its affiliates and all other Electric Generation Suppliers.

6. The Pilot should be designed so that Customers will continue to benefit by certain important consumer protection measures that currently exist. The Pilot, therefore, requires Electric Generation Suppliers to comply with the provisions of Chapter 56 before being allowed to request that PECO Energy shut off a residential Participating Customer for non-payment.

7. The Pilot should be designed to enable a reasonable evaluation of the systems necessary to enable Direct Access. The Pilot, therefore, contains a comprehensive monitoring and evaluation plan.

IV. PILOT SET-UP

A. Eligible Customer Selection

Eligible Customers will be selected as follows:

1. A neutral third party will randomly select one (1) township or borough located in the suburban counties served by PECO Energy, and all residential Customers (Rate R and R-H) in such township or borough will be Eligible Customers. For a township or borough to be eligible to be randomly selected, the total number of Rate R and R-H Customers located within it must be 7,000 or less.

2. A neutral third party will randomly select one (1) political subdivision located in Philadelphia County, and all residential Customers (Rate R and R-H) in such political subdivision will be Eligible Customers. For a political subdivision to be eligible to be randomly selected, the total number of Rate R and R-H Customers located in it must be 7,000 or less.

3. Except for Customers under contract with PECO Energy and served under PECO Energy's Tariff Rule 4.6, Incremental Process Rider ("IPR"), or Economic Efficiency Rider ("EER") as of April 1, 1997, a

neutral third party will randomly select commercial and industrial Customers (Rates GS, PD, HT, SL-S, and SL-E) located within the Enterprise Zones in PECO Energy's service territory. The sum of such Customers' loads will be no greater than 75 MW. PECO Energy reserves the right to increase this 75 MW limit, at its discretion, during the term of the Pilot.

4. PECO Energy will engage a neutral third party to randomly select additional Eligible Customers from a pool that excludes those Rate R and R-H Customers located within the selected suburban township or borough and the City of Philadelphia political subdivision as well as those Rate GS, PD, or HT Customers that are under contract with PECO Energy and served under PECO Energy's Tariff Rule 4.6, Incremental Process Rider ("IPR"), or Economic Efficiency Rider ("EER") as of April 1, 1997. The neutral third party will ensure that approximately five percent (5%) of the total peak demand in calendar year 1995 (the year in which PECO Energy's all-time system peak occurred) of the suburban counties, and five percent (5%) of the total peak demand in calendar year 1995 of the City of Philadelphia, of each of the following rate classes will become Eligible Customers: Rates R, R-H, GS, PD, HT, EP, SL-S, and SL-E. To promote economic development, the Rate HT class will be divided into two segments: Rate HT - Large Customer (Customers with registered peak demands of one (1) MW or greater), and Rate HT - Standard (Customers with registered peak demands of less than one (1) MW). In addition, in determining whether the 5% threshold has been reached, the neutral third party will account for the requirement set forth below that a Rate HT, PD, or GS Participating Customer may only contract with an Electric Generation Supplier for the supply of an amount of energy that is equal to or less than 10% of the eligible class load in any hour.

   PECO Energy estimates that the number of randomly selected Eligible Customers in each rate class will be as follows:

Rate Class	Approximate Number of Customers
Rate R (including RT, RM, RS)	58,702
Rate R-H	7,852
Rate GS	7,172
Rate PD	63
Rate HT - Large Customer	33
Rate HT - Standard Customer	80
Rate EP	1
Rate SL-E	16
Rate SL-S	22

PECO Energy will complete this selection process on or shortly after May 1, 1997 (assuming Commission approval on or about April 1, 1997).

PECO Energy will notify in writing all Eligible Customers that they are Eligible Customers. PECO Energy will provide with such notification the Eligible Customer Information Fact Sheet, a copy of which is attached as Appendix A and which describes the Pilot. Such notice will include a stamped, self-addressed postcard that Eligible Customers should return to PECO Energy to indicate whether they consent to disclosure of their names, addresses, and telephone numbers to Electric Generation Suppliers. If PECO Energy does not receive an Eligible Customer's postcard, PECO Energy will not disclose this information or otherwise reveal the Eligible Customer's identity to Electric Generation Suppliers.

B. Eligible Customer Status at end of Pilot Term

All Eligible Customers will be included in the first one-third (33%) of all of PECO Energy's Customers that will be eligible for Direct Access as of January 1, 1999, when the Phase-In of full Direct Access begins pursuant to the Act. If the Eligible Customer was a Rate HT, PD, or GS Participating Customer whose load was split between PECO Energy and an Electric Generation Supplier due to the 10% of class maximum load requirement (See Section VI.C.1, below), then only the portion of the Eligible Customer's load that was eligible to obtain supply from an Electric Generation Supplier will be automatically eligible for Direct Access as of January 1, 1999.

C. Electric Generation Supplier Pre-Qualification

Any potential Electric Generation Supplier may apply to PECO Energy for selection as a qualified Electric Generation Supplier. To be selected, an Electric Generation Supplier must demonstrate the following:

1. The potential Electric Generation Supplier is legally qualified to do business in the Commonwealth of Pennsylvania.

2. The potential Electric Generation Supplier agrees to post a bond naming PECO Energy as a beneficiary in an amount sufficient to secure its obligations to supply electric energy to Participating Customers, in accordance with the Commission's requirements set forth in its Final Order approving interim licensing requirements for Electric Generation Suppliers.

3. The potential Electric Generation Supplier has obtained from the Commission any necessary license to participate as an Electric Generation Supplier in accordance with the interim licensing requirements, and has agreed to pay all taxes imposed by Articles II and XI of the Act of March 4, 1971 (P.L. 6, No. 2), known as the Tax Reform Code of 1971, and any tax imposed by the Act.

4. The potential Electric Generation Supplier must agree to enter into an Electric Generation Supplier Agreement, as required by the Pilot and described below, and in the exact form described below (See Section VII.C.1, below).

D. Electric Generation Supplier Notification/Process for Challenging Unfavorable Determination

PECO Energy will advertise the start of the Pilot and solicit applications for pre-qualification in such advertisements as soon as is reasonably practicable following approval of the Pilot by the Commission and FERC. To apply, an Electric Generation Supplier need only notify PECO Energy in writing of its desire to participate in the Pilot. In its written notification, an interested Electric Generation Supplier should provide information sufficient for PECO Energy to determine whether the Electric Generation Supplier satisfies the criteria set forth in the preceding section. Within two (2) weeks of receipt of the Electric Generation Supplier's written application, PECO Energy will notify a potential Electric Generation Supplier regarding whether the Electric Generation Supplier has satisfied the pre-qualification criteria and will be an eligible Electric Generation Supplier. Once an Electric Generation Supplier has been pre-qualified and notified of its pre-qualification by PECO Energy, the Electric Generation Supplier should execute and provide to PECO Energy an Electric Generation Supplier Agreement Form, as required by the provisions of the "Electric Generation Supplier Rights and Obligations" section below, as soon as is reasonably practicable.

An Electric Generation Supplier's recourse if it does not satisfy the pre-qualification criteria will be to appeal to the Commission.

E. PECO Energy Participation as an Electric Generation Supplier

If PECO Energy chooses to participate in the Pilot as an Electric Generation Supplier, it will participate through an unregulated affiliate and PECO Energy as the LDU will abide by the following standards of conduct:

1. PECO Energy shall not give an affiliate preference over a non-affiliate in processing a request by a Participating Customer for service.

2. PECO Energy shall supply services and apply the rules and other provisions of the Pilot to non-affiliates in the same manner it applies them to an affiliate and shall uniformly enforce the rules and other provisions of the Pilot.

3. PECO Energy shall not sell non-power goods or services to an affiliate at a price below the cost or market price, whichever is higher, for said goods or services. PECO Energy will not purchase non-power goods or services from an affiliate at a price above the market

price for said goods or services.

4. PECO Energy shall simultaneously make available to all Electric Generation Suppliers any information it provides to an affiliate Electric Generation Supplier regarding the Pilot.

5. Employees of PECO Energy who have responsibility for operation of the distribution system, such as receiving requests for power, purchasing power, or scheduling delivery, shall not be shared with an affiliate Electric Generation Supplier, and their offices shall be physically separated from the office(s) of the affiliate Electric Generation Supplier. Any shared facilities shall be fully and transparently allocated between the two entities. Separate books of account and records shall be maintained for each such affiliate.

6. PECO Energy shall not condition the provision of any distribution services on the purchase of power from an affiliate or from PECO Energy itself.

7. PECO Energy shall not allow its affiliate(s) to utilize its name in a manner such that Eligible Customers can reasonably imply from that use:

   - that the distribution services provided by PECO Energy are of a superior quality when power is purchased from an affiliate; or
   - that the merchant services (for power) are being provided by PECO Energy rather than the affiliate; or
   - that the power purchased from an Electric Generation Supplier that is not a PECO Energy affiliate may not be reliably delivered.

8. PECO Energy shall establish and file with the Commission a dispute resolution procedure to address complaints alleging violations of these rules.

Any PECO Energy affiliate that wishes to participate in the Pilot will be subject to the same pre-qualification process that non-affiliated Electric Generation Suppliers must follow, as described above.

F. Eligible Customer Selection of Electric Generation Suppliers

PECO Energy will make available to all Eligible Customers a list of the pre-qualified Electric Generation Suppliers and such Electric Generation Suppliers with a list of Eligible Customers that have consented to disclosure of their identities as soon as is reasonably practicable following completion of the Eligible Customer Selection process. PECO Energy will provide updated lists of new Electric Generation Suppliers, and of any additional Customers that become Eligible Customers pursuant to the Pilot, on a regular basis. In addition, PECO Energy will provide all pre-qualified Electric

Generation Suppliers with a list of PECO Energy account numbers that cross-references every Eligible Customer's pilot number, which is a number that will be used by the new billing and computer systems that PECO Energy will be using to bill Participating Customers upon commencement of Electric Delivery Service under the Pilot.

Following the initial distribution of these lists, Eligible Customers and Electric Generation Suppliers will have until August 15, 1997 to complete the necessary contractual arrangements and supply PECO Energy with all required information, as set forth below, for unbundled electric energy supply if the Participating Customers wish to begin receiving such supply in the first billing month in which energy will flow under the Pilot, which may be as early as the October, 1997 billing month; otherwise, such Eligible Customers will not be able to obtain their electric supply from an Electric Generation Supplier until the first billing month after which they have completed the necessary contractual arrangements and supplied PECO Energy with all required information.

G. Contractual Arrangements to Obtain Supply and Required Unbundled PECO Energy Electric Delivery Service

To be entitled to obtain Electric Delivery Service from PECO Energy, an Eligible Customer must complete a Participating Customer Consent Form, which will state that the Eligible Customer agrees to the applicable terms and conditions of the Pilot. The Participating Customer Consent Form will also state that the Eligible Customer has become a Participating Customer by entering into a contract for electric supply with an Electric Generation Supplier that has entered into an Electric Generation Supplier Agreement with PECO Energy. Electric Generation Suppliers will have the responsibility to obtain signed Participating Customer Consent Forms from those Eligible Customers with whom or which they enter into contracts for electric energy supply, and must forward those Participating Customer Consent Forms and a signed Electric Generation Supplier Agreement Form to PECO Energy before PECO Energy can commence Electric Delivery Service for Participating Customers.

If an Eligible Customer does nothing - i.e., the Eligible Customer does not enter into a contract with an Electric Generation Supplier and PECO Energy therefore receives no Participating Customer Consent Form from the Eligible Customer - then the Eligible Customer will continue to receive service from PECO Energy pursuant to PECO Energy's Bundled Rates during the term of the Pilot.

H. Timeline of Key Events in Pilot Set-Up Process

Attached as part of Appendix C is a timeline that shows key activities and actions that PECO Energy, Customers, and Electric Generation Suppliers will undertake, and when they will undertake them, which timeline is consistent with the provisions of this "Pilot Set-Up" section of the Pilot. Also attached as part of Appendix C is a flow chart that depicts graphically the same process.

I. Public Education Plan

The goal of the Pilot public education plan will be to create a campaign to inform and educate the public, and in particular, all PECO Energy Customers, including Eligible Customers, about competition in electric generation and what it will mean for them. A detailed summary of the public education plan is attached hereto as Appendix D.

V. PILOT OPERATION

A. Term

The term of the Pilot will be a maximum of fifteen (15) months and a minimum of twelve (12) months depending on when PECO Energy begins Electric Delivery Service. PECO Energy Electric Delivery Service and Electric Generation Supplier deliveries of energy may begin as early as the October, 1997 billing month, but in no event will begin later than the January, 1998 billing month, save a prohibition under the law. PECO Energy will inform the Commission, Participating Customers, and Electric Generation Suppliers at least thirty (30) days in advance of the actual beginning of Electric Delivery Service. Eligible Customers that have not entered into any contract with an Electric Generation Supplier within four months of the end of the term of the Pilot may not enter into a contract for supply thereafter.

B. Energy Balancing/Load Reconciliation

PECO Energy will be responsible for balancing and load reconciliation whenever there is any imbalance between (1) the amount of electric energy flowing into the PJM System and generated within the PJM System by Electric Generation Suppliers, and (2) the amount of electric energy consumed by the Electric Generation Suppliers' Participating Customers. PECO Energy will be responsible for correcting the imbalance by supplying any shortfall to Participating Customers (Electric Generation Suppliers will pay for such underdeliveries), and by absorbing (and in most instances, paying for), any excess energy that is delivered but not used by Participating Customers. Electric Generation Suppliers will pay for this energy balancing service. The energy balancing and load reconciliation process, and its attendant obligations and associated charges, is more fully described below in the "Electric Generation Supplier Rights and Obligations" section of the Pilot.

C. Billing and Collection

PECO Energy will bill Participating Customers for all Charges for Electric Delivery Service on a monthly basis. PECO Energy will also, for a fee, include an Electric Generation Supplier's charges in one of three specified formats on PECO Energy's bill for its services. The formats and charges are set forth in Appendix E. An Electric Generation Supplier may bill separately for its electric energy supply services, and must

comply with applicable provisions of 52 Pa. Code Chapter 56 regarding billing with respect to its residential Participating Customers. An Electric Generation Supplier, however, shall not be entitled to undertake the obligation to bill Participating Customers for PECO Energy 's Electric Delivery Service. If PECO Energy is billing for an Electric Generation Supplier, PECO Energy will remit to the Electric Generation Supplier all charges collected from Participating Customers for the Electric Generation Supplier's services net of any amounts owed PECO Energy by the Electric Generation Supplier. If the payment made by a Participating Customer for whom PECO Energy is providing billing for the Participating Customer's Electric Generation Supplier is less than the total owed, PECO Energy will be paid first for its Charges for Electric Delivery Service, and then the Electric Generation Supplier will be paid. If the Participating Customer's load is split between PECO Energy and an Electric Generation Supplier, then PECO Energy will be paid first for all of the charges associated with its portion of the load.

PECO Energy will perform collection functions for Electric Generation Suppliers only for those Participating Customers for whom or which PECO Energy is including the Electric Generation Supplier's charges on PECO Energy's Electric Delivery Service Bill. If a Participating Customer switches to another Electric Generation Supplier, PECO Energy will not perform any collection functions with respect to any balance owed to the previous Electric Generation Supplier.

PECO Energy will not perform collection functions for Electric Generation Suppliers that are separately billing Participating Customers, except that PECO Energy will under appropriate circumstances, physically terminate a Participating Customer, in accordance with the provisions of the "Participating Customer Rights and Obligations" and "Electric Generation Supplier Rights and Obligations" Sections below.

D. Metering

PECO Energy will be responsible for all metering of Participating Customers' energy usage, and where applicable, of Participating Customers' demands and power factors. In the event a Participating Customer wishes to replace its billing metering equipment with continuous hourly metering, to the extent technically possible, PECO Energy will perform such installation within a reasonable amount of time and at the expense of the Participating Customer or the Participating Customer's Electric Generation Supplier. PECO Energy will own and maintain all such new metering equipment. If obtaining meter readings from the new metering equipment will entail any expense in excess of that PECO Energy normally incurs to obtain meter readings, such additional expense will be borne by the Participating Customer and must be paid in advance.

E. Commission Reporting Obligation

During the Pilot, PECO Energy will collect information and data from Participating Customers and Electric Generation Suppliers, which information and data PECO Energy will use to test assumptions about the operation of the Pilot and about the behavior of Customers and Electric Generation Suppliers. PECO Energy will file with the Commission on a quarterly basis reports that update the Commission on the

operation of the Pilot, and on whether PECO Energy's assumptions and hypotheses, as set forth in the following Section of the Pilot, are correct. Electric Generation Suppliers will be obligated to provide PECO Energy with the following: (1) contracts with Participating Customers or information regarding such contracts that PECO Energy, with Commission input; determines is sufficient to enable PECO Energy to satisfy its reporting obligation; (2) marketing literature; and (3) any other information that the Commission may require to enable PECO Energy to provide information to the Commission regarding the hypotheses that PECO Energy will test, as described in the next Section of the Pilot. PECO Energy will not share any of the information contained in such materials with any employees or agents of any PECO Energy unregulated affiliate that participates as an Electric Generation Supplier in the Pilot.

1. **Pilot Monitoring and Evaluation Plan**

PECO Energy has designed the Pilot to test several assumptions about electric generation competition as follows:

a. **Customer Education**

To be able to test the effectiveness of customer education efforts, PECO Energy has proposed that the principal method for selection of Eligible Customers be random selection across rate classes. Random selection will allow PECO Energy and the Commission to identify the reasons some Eligible Customers will have an interest in competition while some will not, and to analyze whether public education has had any impact on Eligible Customers' decisions. One goal of the Pilot will be to develop public education programs that PECO Energy and others will be able to use to foster a level of understanding that will enable all Customers to make informed choices regarding their energy supply options. This would not be possible if PECO Energy used a self-selection process rather than one that is random. Customers that volunteer would be more receptive to education and therefore PECO Energy and the Commission will not learn what may be necessary to educate all Customers as full Direct Access approaches.

b. **Customer Load Shapes**

Several assumptions will be tested and their impact on deregulation studied in the area of customer load shapes. First, PECO Energy assumes that different Participating Customers with different load curves or hourly usage will receive different benefits from competition. Second, some Participating Customers, because of their more favorable load shapes, will be the focus of Electric Generation Suppliers' marketing efforts. Lastly, PECO Energy hypothesizes that the differing offers of Electric Generation Suppliers will impact Participating Customers' behavior regarding usage and load shape.

c. **Load Aggregation**

The potential exists for Participating Customers to realize savings because of load aggregation. Electric Generation Suppliers including Marketers and Brokers will attempt to aggregate Participating Customers to reduce the cost to serve, and thereby produce savings that can be passed on to such Participating Customers. PECO Energy's hypothesis, however, is that aggregation may result in relatively higher prices for Participating Customers with load shapes that will not be attractive to Aggregators.

d. **Customer Savings**

PECO Energy will gather and organize information regarding the level of customer savings that is achieved by Participating Customers. This information will be used to evaluate the many differing views on the potential level of customer savings that is achievable.

e. **System Reliability**

PECO Energy is confident that system reliability will not suffer during the term of the Pilot because of the structure for PJM interaction and energy imbalance correction and support that PECO Energy has proposed. PECO Energy will gather information to test this hypothesis.

2. **Testing of Assumptions**

To test the assumptions that are outlined above PECO Energy will perform various market research tests. These will include surveys and interviews with Eligible Customers that participate and those that do not. PECO Energy will compare the data it collects to data gathered from a second group of randomly selected non-Eligible Customers, which group will act as a control to the pilot group for statistical analysis purposes. The results of these comparisons will be documented and provided to the Commission on a quarterly basis. It is hoped that this data will help in connection with the development of education programs and open access rules that will make the transition to choice a smooth and successful undertaking.

In its evaluation of the Pilot, PECO Energy will also use information obtained from Electric Generation Suppliers. At a minimum, Electric Generation Suppliers must provide PECO Energy with copies of their marketing literature, and all contracts they enter into with Eligible Customers, or with information regarding such contracts that PECO Energy, with Commission input (whether formal or informal), determines is sufficient to prepare and provide reports to the Commission regarding the hypotheses PECO Energy hopes to test in the Pilot.

VI. PARTICIPATING CUSTOMER RIGHTS AND OBLIGATIONS

A. *Availability of Electric Delivery Service*

PECO Energy Electric Delivery Service is available to Participating Customers from the October, 1997 billing month through the December, 1998 billing month, subject to the following:

B. PECO Energy Electric Delivery Service

PECO Energy will transmit and distribute to Participating Customers electric energy purchased by Participating Customers from Electric Generation Suppliers from any point of receipt on the PJM System available to PECO Energy under PECO Energy's Open Access Transmission Tariff FERC Volume 5, or any successor regional Tariff. Participating Customers or their Electric Generation 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 PJM System available to PECO Energy under PECO Energy's Open Access Transmission Tariff FERC Volume 5, or any successor regional Tariff, in accordance with the provisions contained in this "Electric Generation Supplier Rights and Obligations" section of the Pilot and PJM rules and regulations.

Electric Delivery Service also includes transmission and distribution-related customer service, metering, and billing services to Participating Customers, in accordance with the provisions contained in this "Participating Customer Rights and Obligations" section of the Pilot.

C. Conditions

1. Maximum Permissible Customer Load

A Rate HT, PD, or GS Participating Customer may only contract with an Electric Generation Supplier for the supply of an amount of energy that is equal to or less than 10% of the class load eligible for the Pilot in any hour. A Participating Customer that will continue to receive some electrical energy supply from PECO Energy while obtaining some from an Electric Generation Supplier must have continuous hourly metering equipment. When arranging a supply contract, the Participating Customer must designate a fixed percentage of load as that portion of the Participating Customer's total load that is to be supplied by an Electric Generation Supplier. The fixed percentage shall be applied in all hours and the designated portion may not exceed the 10% of class load maximum in any hour. In determining the fixed percentage, it may not exceed the quotient of the value that equals 10% of the class load eligible for the Pilot divided by the Participating Customer's maximum registered peak demand over the previous 12-month period.

2. **Limitation on Splitting Load/Nature of Split Load PECO Energy Supply Service**

A Participating Customer may only split its load between one Electric Generation Supplier and PECO Energy, and may only do so if its peak load is 10% of the eligible class load or more and it has continuous hourly metering. A Participating Customer that splits its load in accordance with this paragraph will receive unbundled Electric Delivery Service from PECO Energy for the Participating Customer's entire load, and, with respect to the portion of the Participating Customer's electric supply service for which PECO Energy is responsible, the Participating Customer will receive and pay for electric energy at an unbundled rate that is equal to the market price for the Participating Customer's Rate Class used to identify the unbundled charges for Electric Delivery Service, which market prices are set forth in Attachment 4 to Appendix B (explaining the derivation of PECO Energy's unbundled Pilot rates).

3. **Character of Supply Service**

PECO Energy will provide Electric Delivery Service for firm, non-interruptible electric supply service only, unless the Participating Customer and the Electric Generation Supplier take advantage of the provision in the "Electric Generation Supplier Rights and Obligations" section below (Section VII.D.2.d.) permitting actual real time load following, in which case interruptible service will be permitted.

4. **Execution of Participating Customer Consent Form**

The Participating Customer must execute and the Company must receive from the Participating Customer's Electric Generation Supplier, a Participating Customer Consent Form, in the form attached hereto as Appendix F, which indicates: (1) that the Participating Customer has read and understood the Eligible Customer Information Fact Sheet, (2) the Participating Customer's agreement to abide by the provisions contained in this "Participating Customer Rights and Obligations" section of the Pilot, and (3) that the Participating Customer has executed a written contract with an Electric Generation Supplier for electric supply in conjunction with electric delivery service from PECO Energy under the Pilot.

5. **Electric Generation Supplier Agreement**

The Participating Customer's Electric Generation Supplier must have entered into an Electric Generation Supplier Agreement, pursuant to the "Electric Generation Supplier Rights and Obligations" section of the Pilot.

D. **Rules/Other Obligations**

1. **Customer Status if Customer Moves**

If a residential Participating Customer moves to another location in PECO Energy's service territory, the Participating Customer may continue to receive Electric Delivery Service from PECO Energy and electric supply pursuant to its contract with its Electric Generation Supplier if PECO Energy receives a new Participating Customer Consent Form at the time of applying for PECO Energy service at the Participating Customer's new address. If any such residential Participating Customer does not provide, or have his or her Electric Generation Supplier or another Electric Generation Supplier provide, a new Participating Customer Consent Form, the Participating Customer shall revert to Eligible Customer status and begin to receive PECO Energy electric supply service under PECO Energy's Bundled Rates.

A non-residential Participating Customer that ceases to be the PECO Energy Customer of record at the service location at which the Participating Customer initially became an Eligible Customer (e.g., due to the sale, lease, or shut-down of the facility at the service location) shall not be an Eligible Customer at any new service location; rather, the Eligible Customer status will remain with the service location, and the new PECO Energy Customer of Record at that service location will become an Eligible Customer.

2. **Term of Agreement**

Contracts between Electric Generation Suppliers and Participating Customers will be for a term of at least one (1) month. Participating Customers may switch Electric Generation Suppliers during the Pilot, and may return to PECO Energy for supply under PECO Energy's Bundled Rates, and shall pay a switching fee of $12.00 if they do so. A Participating Customer that returns to PECO Energy may not thereafter obtain supply again from an Electric Generation Supplier during the term of the Pilot. PECO Energy will not switch a Participating Customer to another Electric Generation Supplier unless and until it receives a new Participating Customer Consent Form from the new Electric Generation Supplier and unless and until it receives the switching fee. The effective date of any switch to a new Electric Generation Supplier will be the start of the Participating Customer's first PECO Energy billing month thirty (30) days following PECO Energy's receipt of the new Participating Customer Consent Form. The effective date of any return to PECO Energy shall be the first PECO Energy billing month following receipt of notice from the Participating Customer of its decision to return to PECO Energy for its electric supply. The Participating Customer's previous Electric Generation Supplier shall be obligated to continue supplying the Participating Customer until the effective date of the switch or return.

In the event of disqualification of an Electric Generation Supplier as permitted under the Pilot, all Participating Customers of such Electric Generation Supplier shall switch to a new Electric Generation Supplier, or, if PECO Energy does not

receive a Participating Customer Consent Form identifying a new Electric Generation Supplier, shall return to PECO Energy under PECO Energy's Bundled Rates in the next billing month following such disqualification.

3. Termination of Residential Participating Customers

The provisions of 52 Pa. Code Chapter 56 will continue to apply to any termination of service to a residential Participating Customer by PECO Energy, and will also apply to any termination of service to a residential Participating Customer by an Electric Generation Supplier for non-payment to the Electric Generation Supplier.

With respect to Participating Customers that are being billed for their electric supply directly by the Electric Generation Supplier, upon the provision of a sworn affidavit that the Electric Generation Supplier has complied with all of the required actions called for by Chapter 56 and that the Participating Customer is still being served by the Electric Generation Supplier, PECO Energy will shut off a residential Participating Customer's service by the date required by Chapter 56. If a Participating Customer switches to another Electric Generation Supplier or returns to PECO Energy before the proposed termination date, PECO Energy will not shut off the Participating Customer's service, and PECO Energy will not perform any collection functions with respect to any balance owed to the original Electric Generation Supplier. When taking those physical actions that are required to shut off service, PECO Energy will inform the Participating Customer that the reason for termination is non-payment to the Electric Generation Supplier. PECO Energy will reconnect the Participating Customer when requested by the Participating Customer's Electric Generation Supplier to do so and only after receipt by PECO Energy of a reconnection fee, determined in accordance with Rule 18.6 of PECO Energy's Tariff for Electric Service, unless the Participating Customer still owes money to PECO Energy for Electric Delivery Service and PECO Energy has also complied with all applicable provisions of Chapter 56 and the Pennsylvania Public Utility Code.

With respect to Participating Customers that are not being billed for their electric supply directly by the Electric Generation Supplier, but rather by PECO Energy, upon request by the Electric Generation Supplier, PECO Energy will be responsible for shutting off the Participating Customer and complying with all applicable provisions of Chapter 56. Upon receipt of all amounts due and owing and notice to PECO Energy of same, and assuming that PECO Energy has not also shut off the Participating Customer for non-payment and remains unpaid, PECO Energy will reconnect the Participating Customer but only after receipt by PECO Energy of the reconnection fee.

4. Termination of Non-Residential Participating Customers for Non-Payment

With respect to Participating Customers that are being billed for their electric supply directly by the Electric Generation Supplier, upon the provision of a sworn affidavit by an Electric Generation Supplier that the Electric Generation

Supplier has complied with all applicable Commission regulations and rules and that the Participating Customer is still being served by the Electric Generation Supplier, PECO Energy will shut off a non-residential Participating Customer's service as soon as is practicable. If a Participating Customer switches to another Electric Generation Supplier or returns to PECO Energy before the proposed termination date, PECO Energy will not shut off the Participating Customer's service, and PECO Energy will not perform any collection functions with respect to any balance owed to the original Electric Generation Supplier. If a Participating Customer switches to another Electric Generation Supplier or returns to PECO Energy before the proposed termination date, PECO Energy will not shut off the Participating Customer's service, and PECO Energy will not perform any collection functions with respect to any balance owed to the original Electric Generation Supplier. When taking those physical actions that are required to shut off service, PECO Energy will inform the Participating Customer that the reason for termination is non-payment to the Electric Generation Supplier. PECO Energy will reconnect the Participating Customer when requested by the Participating Customer's Electric Generation Supplier to do so and only after receipt by PECO Energy of the reconnection fee, unless the Participating Customer still owes money to PECO Energy for Electric Delivery Service and PECO Energy has also complied with all applicable provisions of the Pennsylvania Public Utility Code and Commission regulations and rules.

With respect to Participating Customers that are not being billed for their electric supply directly by the Electric Generation Supplier, but rather by PECO Energy, upon request by the Electric Generation Supplier, PECO Energy will be responsible for shutting off the Participating Customer and complying with all applicable provisions of the Pennsylvania Public Utility Code and Commission regulations and rules. Upon receipt of all amounts due and owing, PECO Energy will reconnect the Participating Customer but only after receipt by PECO Energy of a reconnection fee, determined in accordance with Rule 18.6 of PECO Energy's Tariff for Electric Service.

5. **Additional Termination Rules Applicable In Residential Landlord/Tenant Situations**

When, in accordance with the rules contained herein, an Electric Generation Supplier requests that PECO Energy terminate a Participating Customer that is a landlord, the Electric Generation Supplier's sworn affidavit must also state that the Electric Generation Supplier has complied with all of the provisions of 66 Pa.C.S. §1521, et. seq.

6. **Limitation on Liability**

PECO Energy shall have no duty or liability to a Participating Customer arising out of or related to a contract or other relationship between a Participating Customer and an Electric Generation Supplier, and no liability or obligation to a Participating Customer arising out of an Electric Generation Supplier's request to initiate termination procedures in accordance with the terms and conditions of the Pilot, or arising out of PECO Energy's response to such request.

E. Provision of Load Data to Customers With Hourly Metering

Prior to commencement of deliveries of electric energy under the Pilot, and only once, PECO Energy will provide 12 months of historic load data to Participating Customers that have had continuous hourly metering (or to their Electric Generation Suppliers assuming written confirmation of the Participating Customers' consent). Participating Customers shall pay PECO Energy $24.00 for this service.

F. Billing and Metering

PECO Energy will bill Participating Customers for Electric Delivery Service on a monthly basis. Electric Generation Suppliers may bill separately for their services, and must comply with applicable provisions of 52 Pa. Code Chapter 56 with respect to their residential Participating Customers. PECO Energy will also, for a fee, include an Electric Generation Supplier's charges to a Participating Customer in one of three specified formats on PECO Energy's bill for its services, in accordance with the terms and conditions contained in the "Electric Generation Supplier Rights and Obligations" section of the Pilot. PECO Energy will be responsible for all metering of Participating Customers' energy usage, and where applicable, of Participating Customers' demands and power factors. PECO Energy will provide energy usage and demand data to Electric Generation Suppliers that will bill directly for their services on a monthly basis.

In the event a Participating Customer wishes to replace its billing metering equipment with continuous hourly metering, to the extent technically possible, PECO Energy will perform such installation within a reasonable amount of time and at the expense of the Participating Customer or the Participating Customer's Electric Generation Supplier. PECO Energy will own and maintain all such new metering equipment. If obtaining meter readings from the new metering equipment will entail any expense in excess of that PECO Energy normally incurs to obtain meter readings, such additional expense will be borne by the Participating Customer and must be paid in advance.

G. Payment Obligations

The standard payment and credit terms, as set forth in Rules 5 and 17 of the Company's Tariff for Electric Service, shall apply.

H. Applicable Tariff Provisions

Unless the context clearly indicates otherwise, all Rules and Regulations of PECO Energy's Tariff for Electric Service (Tariff Electric - PA P.U.C. No. 2) apply to Participating Customers in the Pilot. The State Tax Adjustment Clause applies to service under the Pilot.

I. Charges for Electric Delivery Service

PECO Energy will charge the following each billing month for the Electric Delivery Service that it will provide to Participating Customers under the Pilot, and will apply to the bill for all such services the State Tax Adjustment Clause contained in PECO Energy's current Tariff for Electric Service (Tariff Electric - PA P.U.C NO. 2)(See Appendix B for a detailed discussion of how the unbundled rates were developed, and for sample bill calculations by rate class):

Rate R

Transmission Service Charge:	0.6319 ¢ per kWh
Distribution Service Charges:	
Fixed Charge:	$5.10
Variable Charges:	4.5868¢ per kWh
Competitive Transition Charge:	5.2698¢ per kWh for the first 500 kWh 5.2698¢ per kWh for additional kWh (October through May) 7.1296¢ per kWh for additional kWh (June through September)
Intangible Transition Charge:	tbd

Rate RH

Transmission Service Charge:	0.3579¢ per kWh
Distribution Service Charges:	
Fixed Charge:	$5.10
Variable Charges:	2.8518¢ per kWh
Competitive Transition Charge:	7.2392¢ per kWh for the first 500 kWh 9.0992¢ per kWh for additional kWh (June through September) 7.2392¢ per kWh for the second 100 kWh (October through May) .55920¢ per kWh for additional kWh (October through May)
Intangible Transition Charge:	tbd

Rate GS

Transmission Service Charge:	0.6282¢ per kWh
Distribution Service Charges:	
Fixed Charge:	$6.63 (Single Phase, no demand measurement) $8.67 (Single Phase, demand measurement)

	$23.45 (Polyphase)
Variable Charge:	1.5448¢ per kWh
Competitive Transition Charge:	13.8734¢ per kWh for the first 80 hours' use of billing demand 6.6176¢ per kWh for the second 80 hours' use of billing demand* 4.2453¢ per kWh for additional use except, 1.9700¢ per kWh over both 400 hours' use of billing demand and 2000 kWh 3.3851¢ per kWh for separately metered heating load
Intangible Transition Charge:	tbd

*During October through May this block is eliminated

Rate PD

Transmission Service Charge:	$1.836 per kW
Distribution Service Charges:	
Fixed Charge:	$275.28
Variable Charge:	0.6952¢ per kWh
Competitive Transition Charge:	$6.533126 per kW 5.9878¢ per kWh for the first 150 hours' use of billing demand 3.6346¢ per kWh for the next 150 hours' use of billing demand 1.3113¢ per kWh for additional use
Intangible Transition Charge:	tbd

Rate HT

Transmission Service Charge:	$2.322 per kW
Distribution Service Charges:	
Fixed Charge:	$286.86
Variable Charge:	0.3253¢ per kWh
Competitive Transition Charge:	$8.89394 per kW 4.8491¢ per kWh for the first 150 hours' use of billing demand 2.9192¢ per kWh for the next 150 hours' use of billing demand 1.0086¢ per kWh for additional use
Intangible Transition Charge:	tbd

Rate EP

Transmission Service Charge:	$1.43 per kW

Distribution Service Charges:	
Fixed Charge:	$1,243.85
Variable Charge:	0.95¢ per kWh
Competitive Transition Charge:	$9.21 per kW
	0.81¢ per kWh

Rate SL-E

Transmission and Distribution Service Variable Charge:	0.160¢ per kWh
Distribution Service Fixed Charge:	$10.01

Rate SL-S

Transmission and Distribution Service Fixed Charges:

Lamp Type/Lumens	Fixed Monthly Charge
Incandescent	
320 Lumens	$8.07
600 Lumens	$11.16
1000 Lumens	$15.51
2500 Lumens	$20.95
6000 Lumens	$22.48
10000 Lumens	$25.90
Mercury Vapor	
4000 Lumens	$18.30
8000 Lumens	$18.87
12000 Lumens	$19.65
20000 Lumens	$22.39
42000 Lumens	$30.86
59000 Lumens	$33.31
Sodium Vapor	
5800 Lumens	$18.29
9500 Lumens	$19.70
16000 Lumens	$21.83
25000 Lumens	$24.30
50000 Lumens	$28.30

VII. ELECTRIC GENERATION SUPPLIER RIGHTS AND OBLIGATIONS

A. Availability

To Electric Generation Suppliers from the October, 1997 billing month through the December, 1998 billing month, subject to the following:

B. PECO Energy Electric Delivery Service

PECO Energy will transmit and distribute to Participating Customers electric energy purchased by Participating Customers from Electric Generation Suppliers from any point of receipt on the PJM System available to PECO Energy under PECO Energy's Open Access Transmission Tariff FERC Volume 5, or any successor regional Tariff. Participating Customers or their Electric Generation 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 PJM System available to PECO Energy under PECO Energy's Open Access Transmission Tariff FERC Volume 5, or any successor regional Tariff, in accordance with the provisions contained in this "Electric Generation Supplier Rights and Obligations" section of the Pilot and PJM rules and regulations.

PECO Energy will also provide optional billing services for Electric Generation Suppliers that wish to have their charges billed through PECO Energy's bill for Electric Delivery Service, and metering information to Electric Generation Suppliers, in accordance with the provisions contained in this "Electric Generation Supplier Rights and Obligations" section of the Pilot. Information regarding the three billing formats and the fees PECO Energy will charge for this service, is attached hereto as Appendix E.

C. Conditions

1. Execution of Electric Generation Supplier Agreement Form

The Electric Generation Supplier must execute an Electric Generation Supplier Agreement Form with PECO Energy, which indicates the Electric Generation Supplier's agreement to abide by the provisions contained in this "Electric Generation Supplier Rights and Obligations" section of the Pilot. A copy of this form is attached as Appendix G. Once an Electric Generation Supplier has been pre-qualified by PECO Energy, the Electric Generation Supplier should execute and provide to PECO Energy an Electric Generation Supplier Agreement Form as soon as is reasonably practicable. Approval of the Pilot by the Commission shall constitute approval of any Electric Generation Supplier Agreement between PECO Energy and an unregulated affiliate of PECO Energy that is licensed by the Commission and pre-qualified by PECO Energy to participate in the Pilot, in accordance with the affiliated interest provisions of the Pennsylvania Public Utility Code, 66 Pa.C.S. §2101, et seq.

2. **Electric Generation Supplier License**

The Electric Generation Supplier must have obtained a license from the Commission to participate as an Electric Generation Supplier in the Pilot, and has agreed to pay all taxes imposed by Articles II and XI of the act of March 4, 1971 (P.L. 6, No. 2), known as the Tax Reform Code of 1971 and any tax imposed by the Act.

3. ***Provision of Participating Customer Consent Forms/ Information to be Provided to Participating Customers***

The Electric Generation Supplier will be obligated to provide to PECO Energy all of the Participating Customer Consent Forms for its Participating Customers at least thirty (30) days before delivery to those Participating Customers may commence. An Electric Generation Supplier will also be obligated to provide to *Eligible Customers that wish to become Participating Customers the following:* (1) the Electric Generation Supplier's customer service address and telephone number; (2) a statement describing the dispute resolution procedure used by the Electric Generation Supplier, which dispute resolution procedure must comply with 52 Pa. Code Chapter 56 for residential Participating Customers; (3) a statement that PECO Energy Electric Delivery Service cannot be interrupted as a result of any dispute between the Electric Generation Supplier and the *Participating Customer; (4) a statement that the Participating Customer's* contract with the Electric Generation Supplier is not subject currently to regulation by the Commission; (5) a statement that PECO Energy will not shut off a Participating Customer's service for non-payment to the Electric Generation Supplier unless and until the Electric Generation Supplier has fully complied with the regulations in 52 Pa. Code Chapter 56 for residential Participating Customers or applicable Commission rules and regulations for non-residential Participating Customers; (6) a statement of the length (term) of the contract between the Electric Generation Supplier and the Participating Customer, and the price and billing terms; and (7) the Eligible Customer Information Fact Sheet.

4. **Transmission Rights Outside PJM and PECO Energy Systems**

The Electric Generation Supplier must document and demonstrate that the Electric Generation Supplier has obtained the right to use any necessary non-PJM transmission facilities to move to a point of delivery on the PJM System any power secured for Participating Customers to the extent such power originates from any point of generation outside of the PJM System.

If the Electric Generation Supplier either: (1) delivers power that originates from a point of generation outside of the PJM System to a point of receipt on the PJM System not available to PECO Energy under PECO Energy's Open Access Transmission Tariff FERC Volume 5; or (2) the Electric Generation Supplier's source of supply is a point of generation within the PJM System, then the Electric Generation Supplier will also be responsible for procuring and paying for transmission service, if any, that may be necessary to move power to a point of

receipt on the PJM System available to PECO Energy under PECO Energy's Open Access Transmission Tariff FERC Volume 5, or any successor regional Tariff.

D. **Rules/Other Obligations**

1. **Duty to Cooperate**

The successful implementation of the Pilot depends on the cooperation of Electric Generation Suppliers with PECO Energy. Each Electric Generation Supplier shall therefore be obligated to cooperate with PECO Energy in its management of the Pilot, and to fully adhere to any emergency directives that PECO Energy may issue to ensure and preserve system integrity. Failure to cooperate following a single warning by PECO Energy may, at the option of PECO Energy, result in disqualification of the Electric Generation Supplier from the Pilot.

2. **Supply Procedures and Obligations**

The following procedure, with its attendant obligations, will be followed with respect to the supply provided by Electric Generation Suppliers and the transmission, distribution, and coordination of that supply by PECO Energy:

a. **Provision of Aggregated Daily Load Curve**

Each Electric Generation Supplier will be provided on a monthly basis an aggregated daily load curve ("ADLC") for its Participating Customers. The ADLC will specify the amount of energy the Electric Generation Supplier will be obligated to supply in each hour of the month. PECO Energy will develop the ADLC as follows:

(1) For Participating Customers with monthly billing metering, PECO Energy will use standard load curves (which PECO Energy will supply to the Electric Generation Supplier upon request), together with the total monthly usage from the applicable billing month in the previous calendar year, to develop load profiles. PECO Energy 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 Participating Customer belongs. Attachment 4 to Appendix B contains those standard line loss percentages. In accordance with PJM requirements, which require the scheduling and delivery of power only in whole MW, PECO Energy will round upward the sum of the resulting hourly totals to the nearest whole MW.

(2) If a Participating Customer with monthly billing metering installs or already has installed continuous hourly metering on the Participating Customer's side of the billing meter at a Participating Customer's facility, then the Electric Generation Supplier may propose a substitute to PECO Energy's load curve for that facility that is based on the load data obtained from such non-billing, continuous hourly metering. If the non-billing, continuous hourly metering equipment meets or exceeds PECO Energy and Commission standards, at PECO Energy's sole discretion, PECO Energy will substitute the alternative load curve for the standard curve for the Electric Generation Supplier's applicable Participating Customers.

(3) The Electric Generation Supplier's monthly ADLC will contain a placeholder for the hourly delivery obligation for the Electric Generation Supplier's Participating Customers with continuous hourly billing metering. The Electric Generation Supplier will be obligated to provide to PECO Energy at least one day ahead by 10:00 am a nominated load curve for such Participating Customers. Such nomination should account for line losses using standard line loss percentages for the customer class to which each Participating Customer belongs, and shall be rounded up to the nearest whole MW in accordance with PJM requirements.

b. **Day-Ahead Weather Correction and other Adjustment of ADLC**

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

c. **Daily Supplier Identification of Source of Supply/PECO Energy Scheduling, System Control and Dispatch Service**

The Electric Generation Supplier will inform PECO Energy at least one day ahead by 10:00 am of the amount and point of generation of its electric energy supply that will originate from outside of the PJM System, and of the amount and point of generation of its electric energy supply that will originate within the PJM System. These amounts must be in whole MW in accordance with current PJM requirements. PECO Energy will schedule with PJM any deliveries that will come from outside of the PJM System, and will coordinate and handle the accounting for deliveries within the PJM System with PJM and with the affected PJM member companies ("Scheduling, System Control and Dispatch Service"). Electric Generation Suppliers will pay PECO Energy for these services, in accordance with the section entitled, "Electric Generation Supplier/PECO Energy Required Payments and Schedule of Rates" set forth below.

d. **Electric Generation Supplier Supply Obligation**

The Electric Generation Supplier will supply in each hour the amount of electric energy specified by its adjusted ADLC, and will be obligated to provide to PECO Energy on a monthly basis (or on a more frequent basis in accordance with, and only to the extent necessary to comply with, current PJM interchange requirements) hourly metering data or other proof sufficient for PECO Energy to verify title to and generation and/or delivery of the amount of electric energy specified by the Electric Generation Supplier's adjusted ADLC.

To the extent an Electric Generation Supplier has installed and pays for the necessary metering and telecommunications equipment for actual load following, an Electric Generation Supplier may follow such Participating Customers' loads. To the extent that the Electric Generation Supplier's total supply is for such Participating Customers, the Electric Generation Supplier shall be obligated to follow such Participating Customers' loads on a real-time basis.

e. **Energy Imbalance Service**

PECO Energy 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 an Electric Generation Supplier and the amounts consumed by the Electric Generation Supplier's Participating Customers ("Energy Imbalance Service"). PECO Energy will also absorb any amounts of energy that constitute oversupply by an Electric Generation Supplier. An Electric Generation Supplier will pay for undersupply, and PECO Energy will pay for oversupply, in accordance with the section entitled "Electric Generation Supplier/PECO Energy Required Payments and Schedule of

Rates," set forth below. An Electric Generation Supplier shall also pay PECO Energy for this service, in accordance with the section entitled, "Electric Generation Supplier/PECO Energy Required Payments and Schedule of Rates" set forth below.

f. **Other Ancillary Services**

In addition to the Energy Imbalance Service and the Scheduling, System Control and Dispatch Service described above, PECO Energy will provide to all Electric Generation Suppliers all necessary ancillary services, including: a) Reactive Supply and Voltage Control from Generation Sources; b) Regulation and Frequency Response; c) Operating Reserves-Spinning; and d) Operating Reserves-Supplemental, as defined in PECO Energy's Open-Access Transmission Tariff FERC Volume 5.

3. **Independent Reserve Obligation**

Each Electric Generation Supplier shall be required to demonstrate that it has the ability at any time to call upon reserve, firm capacity in an amount equal to the percentage of reserve firm capacity that PJM requires PECO Energy to maintain to be able to serve its Customers.

4. **Electric Generation Supplier/PECO Energy Required Payments and Schedule of Rates**

a. **Penalty for Failure to Supply ADLC**

To the extent that an Electric Generation Supplier's total hourly deliveries in any hour do not match the Electric Generation Supplier's adjusted ADLC, the Electric Generation Supplier shall pay to PECO Energy a penalty per kWh of 1.5 times the prevailing Wholesale Hourly Market Clearing Price or 10¢ per kWh, whichever is higher. If any such discrepancy occurs during an hour in a PJM declared maximum generation emergency, then the Electric Generation Supplier will pay PECO Energy a penalty per kWh of 2.0 times the prevailing Wholesale Hourly Market Clearing Price, or 14¢ per kWh, whichever is higher.

b. **Payments for Energy Imbalance Service**

(1) <u>For Participating Customers with Monthly Billing Metering</u>. On a monthly basis, PECO Energy will, after-the-fact, pro-rate the estimated hourly loads of Participating Customers based on their monthly total usage. To pro-rate, PECO Energy will multiply each Participating Customer's hourly load by the ratio of the estimated total monthly usage used to develop the Participating Customers' standard load curve and the Participating Customer's actual total monthly usage, and add together all of the pro-rated hourly loads for an

Electric Generation Supplier's Participating Customers. For any hour in which an Electric Generation Supplier delivered or supplied less than the total estimated actual usage, the Electric Generation Supplier shall pay to PECO Energy per kWh of undersupply an amount equal to the prevailing Wholesale Hourly Market Clearing Price for that hour, plus $0.0001983/kWh for this PECO Energy-provided Energy Imbalance Service. For any hour in which an Electric Generation Supplier delivered or supplied more than the estimated actual usage, PECO Energy shall pay to the Electric Generation Supplier per kWh of oversupply an amount equal to the prevailing Wholesale Hourly Market Clearing Price for that hour, minus $0.0001983/kWh for this PECO Energy-provided Energy Imbalance Service.

(2) For Participating Customers with Continuous Hourly Metering.

Underdelivery:

If the Electric Generation Supplier delivered or supplied less than the Participating Customers' usage for any hour, and the amount by which the Electric Generation Supplier under-supplied is within 5% of the Participating Customers' usage for such hour, then the Electric Generation Supplier shall pay to PECO Energy per kWh of undersupply an amount equal to the prevailing Wholesale Hourly Market Clearing Price for that hour, plus $0.0001983/kWh for this PECO Energy-provided Energy Imbalance Service. If the amount by which the Electric Generation Supplier under-supplied is not within 5% of the Participating Customers' usage for such hour, then the Electric Generation Supplier shall pay to PECO Energy per kWh of undersupply an amount per kWh equal to 1.5 times the prevailing Wholesale Hourly Market Clearing Price (or 2.0 times such price for any hour in a PJM declared maximum generation emergency) or 10¢ per kWh, whichever is higher, plus $0.0001983/kWh for this PECO Energy-provided Energy Imbalance Service.

Oversupply:

If the Electric Generation Supplier delivered or supplied more than the Participating Customers used for any hour, and the amount by which the Electric Generation Supplier oversupplied is within 5% of the Participating Customers' usage for such hour rounded up to the nearest whole MW, then PECO Energy shall pay to the Electric Generation Supplier per kWh of oversupply an amount equal to the prevailing Wholesale Hourly Market Clearing Price for that

hour, minus $0.0001983/kWh for this PECO Energy-provided Energy Imbalance Service If the amount by which the Electric Generation Supplier over-supplied is not within 5% of the Participating Customers' usage for such hour rounded up to the nearest whole MW, then PECO Energy will not pay for any of the excess energy and the Electric Generation Supplier will pay $0.0001983/kWh for this PECO Energy-provided Energy Imbalance Service.

Adjustments due to Outages:

If any oversupply occurs in an hour in which any of an Electric Generation Supplier's Participating Customers have experienced a service outage not caused by the Electric Generation Supplier or such Participating Customers, then the charge for overdelivery per kWh shall be the prevailing Wholesale Hourly Market Clearing Price for that hour, less $0.0001983/kWh for this PECO Energy-provided Energy Imbalance Service, even if the amount by which the Electric Generation Supplier oversupplied is not within 5% of the Participating Customers' usage for such hour rounded up to the nearest whole MW.

c. **Definition of Wholesale Hourly Market Clearing Price**

The Wholesale Hourly Market Clearing Price shall mean PECO Energy's PJM Billing Rate in any hour, or whatever rate or market clearing price replaces the PJM Billing Rate.

d. **Payments for other Ancillary Services**

On a monthly basis, to the extent such services are not paid for by Participating Customers through their charges for transmission service, PECO Energy will charge the Electric Generation Supplier for ancillary services at rates consistent with PECO Energy's Open Access Transmission Tariff FERC Volume 5, or any successor regional Tariff. Such ancillary services will include: a) Scheduling, System Control and Dispatch Service; b) Reactive Supply and Voltage Control from Generation Sources; c) Regulation and Frequency Response; d) Operating Reserves-Spinning; and e) Operating Reserves-Supplemental.

5. **Participating Customer Change of Address**

If a residential Participating Customer moves to another location in PECO Energy's service territory, the Participating Customer may continue to receive Electric Delivery Service from PECO Energy and electric supply pursuant to its contract with its Electric Generation Supplier if PECO Energy receives a new Participating Customer Consent Form at the time of applying for PECO Energy

service at the Participating Customer's new address. If any such residential Participating Customer does not provide, or have his or her Electric Generation Supplier or a new Electric Generation Supplier provide, a new Participating Customer Consent Form, the Participating Customer shall revert to Eligible Customer status and begin to receive PECO Energy electric supply service under PECO Energy's Bundled Rates.

A non-residential Participating Customer that ceases to be the PECO Energy Customer of record at the service location at which the Participating Customer initially became an Eligible Customer (e.g., due to the sale, lease, or shut-down of the facility at the service location) shall not be an Eligible Customer at any new service location; rather, the Eligible Customer status will remain with the service location, and the new PECO Energy Customer of Record at that service location will become an Eligible Customer.

6. **Billing, Metering, and Collection**

An Electric Generation Supplier may provide its own, separate bill to Participating Customers. PECO Energy will, however, for a monthly fee, act as agent for an Electric Generation Supplier, and include an Electric Generation Supplier's charges to a Participating Customer, in one of three specified formats on PECO Energy's bill for its services. The formats and charges are set forth in Appendix E. An Electric Generation Supplier may bill separately for its electric energy supply services, and must comply with applicable provisions of 52 Pa. Code Chapter 56 regarding billing with respect to its residential Participating Customers. An Electric Generation Supplier, however, shall not be entitled to undertake the obligation to bill Participating Customers for PECO Energy's Electric Delivery Service. If PECO Energy is billing for an Electric Generation Supplier, then PECO Energy will remit to the Electric Generation Supplier all charges collected from Participating Customers for the Electric Generation Suppliers' services net of any amounts owed PECO Energy by the Electric Generation Supplier. If the payment made by a Participating Customer for whom PECO Energy is providing billing for the Participating Customer's Electric Generation Supplier is less than the total owed, PECO Energy will be paid first for its Charges for Electric Delivery Service, and then the Electric Generation Supplier will be paid. If the Participating Customer's load is split between PECO Energy and an Electric Generation Supplier, then PECO Energy will be paid first for all of the charges associated with its portion of the load.

PECO Energy will perform collection functions for Electric Generation Suppliers with respect to those Participating Customers for whom or which PECO Energy is including the Electric Generation Supplier's charges on PECO Energy's Electric Delivery Service Bill. If a Participating Customer switches to another Electric Generation Supplier, then PECO Energy will not perform any collection functions with respect to any balance owed to the previous Electric Generation Supplier.

PECO Energy will not perform collection functions for Electric Generation Suppliers that are separately billing Participating Customers, except that PECO

Energy will, in appropriate circumstances, physically terminate a Participating Customer, in accordance with the provisions set forth below.

PECO Energy will be responsible for all metering of Participating Customers' energy usage, and where applicable, of Participating Customers' demands.

7. **Termination of Residential Participating Customers**

The provisions of 52 Pa. Code Chapter 56 will continue to apply to any termination of service to a residential Participating Customer by PECO Energy, and will also apply to any termination of service to a residential Participating Customer by an Electric Generation Supplier for non-payment to the Electric Generation Supplier.

With respect to Participating Customers that are being billed for their electric supply directly by the Electric Generation Supplier, upon the provision of a sworn affidavit that the Electric Generation Supplier has complied with all of the required actions called for by Chapter 56 and that the Participating Customer is still being served by the Electric Generation Supplier, PECO Energy will shut off a residential Participating Customer's service by the date required by Chapter 56. If a Participating Customer switches to another Electric Generation Supplier or returns to PECO Energy before the proposed termination date, PECO Energy will not shut off the Participating Customer's service, and PECO Energy will not perform any collection functions with respect to any balance owed to the original Electric Generation Supplier. When taking those physical actions that are required to shut off service, PECO Energy will inform the Participating Customer that the reason for termination is non-payment to the Electric Generation Supplier. PECO Energy will reconnect the Participating Customer when requested by the Participating Customer's Electric Generation Supplier to do so and only after receipt by PECO Energy of a reconnection fee, determined in accordance with Rule 18.6 of PECO Energy's Tariff for Electric Service, unless the Participating Customer still owes money to PECO Energy for Electric Delivery Service and PECO Energy has also complied with all applicable provisions of Chapter 56 and the Pennsylvania Public Utility Code.

With respect to Participating Customers that are not being billed for their electric supply directly by the Electric Generation Supplier, but rather by PECO Energy, upon request by the Electric Generation Supplier, PECO Energy will be responsible for shutting off the Participating Customer and complying with all applicable provisions of Chapter 56. Upon receipt of all amounts due and owing and notice to PECO Energy of same, and assuming that PECO Energy has not also shut off the Participating Customer for non-payment and remains unpaid, PECO Energy will reconnect the Participating Customer but only after receipt by PECO Energy of the reconnection fee.

8. Termination of Non-Residential Participating Customers for Non-Payment

With respect to Participating Customers that are being billed for their electric supply directly by the Electric Generation Supplier, upon the provision of a sworn affidavit by an Electric Generation Supplier that the Electric Generation Supplier has complied with all applicable Commission regulations and rules and that the Participating Customer is still being served by the Electric Generation Supplier, PECO Energy will shut off a non-residential Participating Customer's service as soon as is practicable. When taking those physical actions that are required to shut off service, PECO Energy will inform the Participating Customer that the reason for termination is non-payment to the Electric Generation Supplier. PECO Energy will reconnect the Participating Customer when requested by the Participating Customer's Electric Generation Supplier to do so and only after receipt by PECO Energy of a reconnection fee, determined in accordance with Rule 18.6 of PECO Energy's Tariff for Electric Service, unless *the Participating Customer still owes money to PECO Energy for Electric* Delivery Service and PECO Energy has also complied with all applicable provisions of the Pennsylvania Public Utility Code and Commission regulations and rules.

With respect to Participating Customers that are not being billed for their electric supply directly by the Electric Generation Supplier, but rather by PECO Energy, upon request by the Electric Generation Supplier, PECO Energy will be responsible for shutting off the Participating Customer and complying with all applicable provisions of the Pennsylvania Public Utility Code and Commission regulations and rules. Upon receipt of all amounts due and owing, PECO Energy will reconnect the Participating Customer but only after receipt by PECO Energy of the reconnection fee.

9. Additional Termination Rules Applicable In Residential Landlord/Tenant Situations

When, in accordance with the rules contained herein, an Electric Generation Supplier requests that PECO Energy terminate a Participating Customer that is a landlord for residential tenants, the Electric Generation Supplier's sworn affidavit must also state that the Electric Generation Supplier has complied with all of the provisions of 66 Pa.C.S. §1521, et seq.

10. Limitations on Liability

PECO Energy shall not be liable for any loss, cost, damage, or expense, whether direct or consequential, caused by PECO Energy's calculation of the ADLC. PECO Energy shall have no liability with respect to any electric energy before it is delivered by an Electric Generation Supplier to a point of delivery on the PJM System available to PECO Energy under PECO Energy's Open Access Transmission Tariff FERC Volume 5, or any successor regional Tariff, or after its delivery to Participating Customers.

In addition, PECO Energy shall have no liability or duty to an Electric Generation Supplier arising out of an agreement or relationship between an Electric Generation Supplier and a Participating Customer, and no liability or obligation arising out of: (1) an Electric Generation Supplier's request to initiate termination procedures in accordance with the terms and conditions of the Pilot; or (2) PECO Energy's response or failure to respond to such request. An Electric Generation Supplier shall indemnify, defend and hold harmless PECO Energy, its directors, officers, agents and employees from and against any and all liabilities, claims, damages, costs and expenses (including, without limitation, reasonable attorneys' fees and Commission-imposed fines) whether at law or in equity, or in contract or in tort, arising out of: (1) an Electric Generation Supplier's request to PECO Energy to terminate a Participating Customer for non-payment, or (2) PECO Energy's response to an Electric Generation Supplier's request to terminate a Participating Customer for non-payment, unless any such liability, claim, damage, cost, or expense is solely the result of PECO Energy's negligence.

11. Payment Terms

The standard payment and credit terms applicable to Rate HT Customers, as set forth in Rules 5 and 17 of the Company's Tariff for Electric Service, shall apply to Electric Generation Suppliers. Failure to pay bills supplied by PECO Energy to an Electric Generation Supplier when due may, in the discretion of PECO Energy, result in disqualification of the Electric Generation Supplier from the Pilot.

Appendix A

Eligible Customer Information Fact Sheet

Choice of Electricity Supplier is Now Available to You

You will soon be able to purchase your electricity from a company other than PECO Energy. That is because you have been selected to participate in a pilot program that allows you to get your electric supply from another company. The pilot program is the first step towards full access to competitive electric suppliers in Pennsylvania. *To participate, you have to sign up with a supplier.* If you do sign up, PECO Energy will still deliver to you the power you buy from another supplier. That is because PECO Energy will still own the wires that the power you buy will flow through. That means if you buy your power from another company, you will still pay PECO Energy to deliver that power through its wires to you.

Whether to Participate

The pilot runs from October, 1997 through December 31, 1998. You can sign up with a supplier until October of 1998. *You do not have to choose a new supplier if you do not want to.* If you do nothing - if you do not choose to sign a contract with a new supplier - you will remain a PECO Energy customer just as you are today.

Attached to this information sheet is another sheet that shows what a typical customer like you pays currently, and what the typical customer would pay to PECO Energy just for electric delivery service. The sheet also shows the energy price a supplier would have to charge so that the total bill would be the same as it is today. This information will help you decide whether a supplier can give you a better price.

How to Participate If You Want To

PECO Energy requests that you sign the enclosed stamped, self-addressed postcard and return it to PECO Energy. Your signature will indicate your willingness to allow PECO Energy to provide your name, telephone number, and address to companies that may be interested in supplying your electricity. If you sign and return the postcard, you *will not have to* sign up with a new supplier. Returning the postcard signed just makes it easier for possible suppliers to

contact you. Also, if you do not wish to sign and return the postcard, you may still obtain supply from a supplier. PECO Energy will be sending you a list of suppliers soon. All of the suppliers on the list will have been licensed by the Pennsylvania Public Utility Commission to sell electricity in Pennsylvania.

If you decide to obtain supply from a new supplier, you will have to enter into a written contract with that supplier. The contract you sign with the supplier constitutes your binding agreement with the supplier. It will contain the price you will pay, and possibly other important obligations that you will agree to. Be sure to ask your supplier about all of the important aspects of your contract.

If you sign up with a supplier, the supplier will also give you a form to sign for PECO Energy. This form is your contract with PECO Energy. Under this contract, PECO Energy promises that it will deliver the power you buy from the supplier to your house or location, and you promise to pay for that delivery service. The contract also states that you agree to all of the rules that the Pennsylvania Public Utility Commission has approved for the Pilot. The contract form also contains blanks for some information PECO Energy needs. Your new supplier can help you fill out the blanks in the contract form.

You may switch suppliers during the pilot, or return to PECO Energy under your current PECO Energy rate. Remember, however, that you have to honor any contract you sign with your first supplier. Also, if you return to PECO Energy, you cannot sign up again with another supplier during the Pilot. If your new supplier does not follow the rules of the Pilot and is disqualified as a supplier - or if the Public Utility Commission revokes your supplier's license - you can find a new supplier or return to PECO Energy under your current PECO Energy rate.

To sign up with a supplier other than PECO Energy, all you have to do is the following:

1. Sign a contract for supply with a licensed supplier.

2. Sign the Participating Customer Consent Form that your supplier should give you, and make sure your supplier sends it to PECO Energy promptly.

The Pilot that you are a part of will run through January 1,1999. At that time, all utilities in Pennsylvania must provide electric generation choice to one-third of their customers. At the conclusion of the pilot, you will continue to have the opportunity to continue buying your electricity from a supplier other than PECO Energy.

Meter Reading and Billing

If you choose to sign up with a new supplier, PECO Energy will continue to read your meter. If you wish to have a new meter installed to be able to take advantage of a particular type of service offered by a competitive supplier, PECO Energy will perform the installation within a reasonable time at your expense. PECO Energy will own and maintain the meter. If there are additional expenses involved in obtaining meter readings, you will be responsible for those costs.

PECO Energy will also bill you monthly for delivering the power you get from your supplier. PECO Energy will also include your new supplier's charges on your PECO Energy bill if your supplier asks PECO Energy to do their billing. If your supplier does not choose to bill you using PECO Energy's bill, the supplier will send you a separate bill for their service.

Dispute Resolution

You should handle billing disputes with your supplier first by contacting the supplier and attempting to resolve the dispute. Before signing up with a supplier, the supplier must inform you of its dispute resolution process. If you cannot work out a dispute using that process, there are other resources available to assist you. These include the Pennsylvania Office of Consumer Advocate at 717-783-5048 and the Public Utility Commission's Bureau of Consumer Services at 800-782-1110.

Because the delivery of power by PECO Energy to your meter will continue to be regulated by the Commission, the bill for that portion of your service will continue to be subject to traditional procedures regarding billing disputes. If you have a problem with your bill from PECO Energy, contact PECO Energy first to settle the dispute. If you are not satisfied, contact the Office of Consumer Advocate at 717-783-5048 or the Public Utility Commission's Bureau of Consumer Services at 800-782-1110.

Termination of Service

Your supplier can request that PECO Energy shut off electric service to your premises if the supplier can satisfy the same requirements that PECO Energy currently must satisfy to shut off service. Your contract with your supplier obligates you to purchase and pay for your electric supply during the term of the contract. Failure to pay for your electric supply could result in termination of

service by PECO Energy on behalf of your chosen supplier. Please be certain that you understand your obligations to your chosen supplier before you sign a contract.

Questions

If you have questions regarding this program you may call PECO Energy at 1-800-TAP-PECO regarding the program.

This message is very important. If you do not understand, please call the telephone number that shows on this document.

Este es un mensaje muy importante, Si usted no lo entiende, favor de llamar al número de teléfono que aparace en este documento.

Appendix A (Attached Sheet)

[NOTE: THIS SHEET WILL BE A COMPARISON OF THE BUNDLED BILL TO THE UNBUNDLED BILL FOR THE CUSTOMER'S RATE CLASS. AS INDICATED IN THE MAIN BODY OF APPENDIX A, THE COMPARISON WILL SHOW THE PRICE AN ELECTRIC GENERATION SUPPLIER WILL HAVE TO CHARGE SO THAT THE TOTAL BILL WOULD BE THE SAME]

Appendix B

DERIVATION OF CHARGES FOR ELECTRIC DELIVERY SERVICE

Rates R, RH, GS, PD, HT, and EP

To unbundle Rates R, RH, GS, PD, HT, and EP into separate charges for transmission, distribution, and the competitive transition charge (CTC), PECO Energy followed a seven-step process:

1. Obtain target revenues for each rate class from PECO Energy's last electric base rate case (Docket No. R-891364, 1989-90 – "Limerick 2 base rate case").
2. Adjust target revenues with Commission-approved rate roll-ins that have occurred since the base rate case. These roll-ins include changes to the State Tax Adjustment Clause (STAC); the Commission-approved rate increase caused by the accounting changes required by the Financial Accounting Standards Board Statement No. 106 (SFAS 106); and the roll-in of the Energy Cost Adjustment (ECA) into base rates. **Attachment 1** shows the derivation of the Pilot Revenue Requirements from the Limerick 2 base rate case values adjusted for the STAC, SFAS 106, and ECA roll-ins.
3. Isolate the costs that are contained in the adjusted target revenues into generation-related, transmission, and distribution components.
4. Adjust rates of return for transmission and distribution costs associated with each rate class to exclude the impact of the generation-related excess capacity disallowance made in the Limerick 2 base rate case. This results in a total adjusted rate of return for all rate classes of 10.96%, rather than the 10.61% ROR used to develop Rates in the Company's Compliance Filing in the Limerick 2 base rate case.
5. Identify the unit costs associated with transmission and distribution costs for each rate class to derive unbundled rates for transmission and distribution.
6. Determine the estimated market price of generation for each rate class.
7. Determine the CTC for each rate class. **Attachment 2** shows the unbundled Revenue Requirements, by cost functions, that result of steps 3 through 7.

Steps 3 through 7 involved numerous tasks. What follows is a description, by cost function, of the data source and method used to identify separate total costs and unit charges for each rate class:

Generation-related costs

Using the Limerick 2 base rate case cost allocation study, for each rate class PECO Energy identified and separated all generation production costs, which

include fuel, non-fuel expenses, rate base associated with generation, and associated taxes. As explained below, a portion of this total is stranded or transition costs that will be recovered from pilot customers through the CTC.

Transmission-related costs

The total transmission system revenue requirement that PECO Energy used to develop unbundled transmission rates is the same revenue requirement used to support the rates contained in PECO Energy's Open Access Transmission Service Tariff, which PECO Energy filed with the FERC in July, 1996. PECO Energy adjusted this revenue requirement by the Pennsylvania Gross Receipts tax of 4.4%. To allocate the adjusted total revenue requirement to the rate classes, PECO Energy used the four-coincident peak system demand allocators used to allocate transmission costs for the Limerick 2 base rate case.

To arrive at unbundled transmission rates for Rates R, R-H, and GS, which are not demand metered, PECO Energy divided the transmission cost allocated to each rate class by the total sales in kWh used for each class in the Limerick 2 base rate case to arrive at unit values. These unit values are the unbundled transmission rates for the rate classes. For example, for Rate R, the class of service revenue requirement for transmission is approximately $43 million and the total sales in kWh from the Limerick 2 base rate case is approximately 6.8 billion kWh. Dividing these two values results in a transmission rate of approximately $0.0063/kWh.

For Rates PD, HT, and EP, which are demand-metered, PECO Energy divided the allocated transmission cost by the sample kW billing demand units from the Limerick 2 base rate case and adjusted this amount by the rate of the total applicable class of service revenue divided by the applicable sample class of service revenue from the Limerick 2 base rate case.

For example, for Rate HT, the portion of the FERC transmission revenue requirement is equal to approximately $65 million and the total sample kW billing demand units is approximately 26.7 million kW. Dividing these two values and then adjusting for the class to sample revenues ($1.075 billion/$1.127 billion) results in a transmission rate of $2.32/kW

Attachment 3, Sheets 1-8, Calculation of Revenue, shows allocated transmission costs and pricing for each rate class. This attachment also shows the allocated distribution related and CTC costs.

Distribution-related costs

PECO Energy used the distribution-related revenue requirement from the cost allocation in the Limerick 2 base rate case compliance filing, and, as described

above, adjusted it using a rate of return not reflecting the generation related disallowances made in the Limerick 2 base rate case as well as the previously described STAC and SFAS roll-ins. PECO Energy also used the allocations of the revenue requirement by rate class found in the Limerick 2 base rate case compliance filing. For example, for Rate R, the class of service revenue requirement for distribution related costs is approximately $315 million incorporating the above adjustments.

To derive unbundled distribution rates for each rate class, PECO Energy divided the class allocation of distribution related revenue requirements, after adjustments, by the class sales found in the Limerick 2 base rate case. The result of these calculations are the "variable distribution charges" in the unbundled distribution rates set forth in the "Charges for Electric Delivery Service" section of the Pilot. By way of example, PECO Energy divided the Rate R allocation of $315 million by approximately 6.8 billion kWh to arrive at a distribution unit rate, and therefore an unbundled variable distribution charge, of 4.59 ¢/kWh.

The unbundled distribution rates also contain a fixed charge, which is associated with metering, billing, and other customer-related costs, and is equal to (or based on) the class of service values for customer charges that are contained in PECO Energy's Tariff Electric-PA PUC No. 2. For example, for Rate R, the fixed delivery charge is equal to $5.10 per month.

Market-priced energy

Customers that participate in the Pilot can expect to be offered contracts by Electric Generation Suppliers that reflect the suppliers' estimates of the market price for energy, and therefore it was necessary to unbundle the energy component of PECO Energy's rates using forecasted market prices rather than the actual averages embedded in the current base rates. Had PECO Energy unbundled energy using the actual average cost of fuel, the total of the charges that pilot customers would pay to PECO Energy and to an Electric Generation Supplier would exceed the total charges under the base rates. That is because PECO Energy's average fuel cost is approximately 1.2¢/kWh, and is therefore far below forecasted market prices for energy.

Put differently, the practical effect of unbundling at the average cost of fuel is that it would be virtually certain that Customers would have no opportunity to save money on electric bills. Instead, customers would see *increases* equal to the difference between 1.2¢/kWh and the price an Electric Generation Supplier would have to charge just to break even.

PECO Energy therefore needed an estimate, or forecast, of the marginal price of generation to unbundle energy costs. PECO Energy selected ICF Resources, of

Fairfax, Virginia, to do the forecasting work. ICF has extensive experience modeling the PJM System and has performed numerous projects for PJM member companies and other Electric Generation Suppliers.

ICF forecasted the market for 1997. PECO Energy used the forecast of the all-hours marginal price, along with rate class load and loss factors, to develop class-specific forecasts. **Attachment 4** shows the market price and the factors used to adjust it for each rate class.

PECO Energy then multiplied the class-specific market prices by class sales to arrive at total energy costs for each rate class. For example, the adjusted market price forecast for Rate HT is 2.45¢/kWh. PECO Energy multiplied this value by total class sales found in the Limerick 2 base rate case compliance filing, which is approximately 14 billion kWh, for a forecast total of market generation of approximately $344 million. These total dollar values were not necessary to develop unbundled energy rates, since PECO Energy started with an unbundled market rate to arrive at them. Rather, PECO Energy needed these total values to design a CTC, in the manner described in the following section.

Competitive Transition Charge

The derivation of the revenue requirement used to design the CTC to be used in the pilot for each rate class is described by the following expression:

$$RCTC = CR - (T + D + E)$$

where

RCTC = revenue requirement for competitive transition charge
CR = total revenue requirement for current bundled rate
T = class allocation of total revenue requirement for network transmission
D = class allocation of total revenue requirement for distribution
E = class energy revenue, which is equal to class sales multiplied by forecast market-energy price for rate class

For example, the total revenue requirement for Rate HT, taken directly from the Limerick 2 base rate case compliance filing and adjusted by the STAC, SFAS, and ECA roll-ins, was approximately $1.1 billion. The sum of transmission, distribution related, and market generation for Rate HT determined in the manner described above, is approximately $464 million. The difference is approximately $623 million. That amount is the total revenue requirement used to develop a CTC for Rate HT customers in the Pilot.

Once PECO Energy calculated a CTC revenue requirement for each rate class in this manner, PECO Energy then designed rates using traditional allocation methods. That is, PECO Energy used the rate blocking structure that is contained in the current Electric Tariff.

The CTC charges for Rates R and RH are energy consumption-based. For example, the CTC charges for Rates R and RH will be higher in the summer for all consumption above 500 kWh per month. For Rate RH, the CTC charge will be lower in the winter for all kWh consumption below 600 kWh per month. The CTC charges maintain the same cents per kWh difference, exclusive of fuel, as in the current tariff. For example, for Rate R, the pricing for energy blocks in PECO Energy's bundled tariff is 11.77 cents per kWh, exclusive of fuel, for the first 500 kWh and 13.63 cents per kWh, exclusive of fuel, for all additional kWh. The price difference between these two blocks is 1.86 cents. The price difference for the CTC charges for Rate R in the unbundled rates reflects this same price differential 7.13 cents minus 5.27 cents are the two CTC rates, and the difference between them is 1.86 cents.

The CTC charge for Rate GS is also energy consumption based. The blocking for the CTC mirrors the current blocking in that the percentage difference from block to block is identical to the current tariff, exclusive of fuel.

The CTC charges for Rates PD , HT, and EP contain both demand and energy components. To derive rates, the first step was to determine the fraction of the *total CTC requirement for each rate class that is associated with demand and* the fraction associated with energy. Based on the Limerick 2 base rate case compliance filing the energy-related revenue requirement associated with Rate HT is approximately 60 percent of the total (60% of $623 million, which is $374 million).

Second, PECO Energy used the demand-related fraction of the total to determine the total requirement for demand-related CTC (40% times $623 million or $249 million) . PECO Energy then divided this value by the class of service sample billing demand from the compliance filing (2.67 billion kWh), and then adjusted (multiplied) the result by the ratio of total sample of service revenues to total class of service revenues ($1.075 billion divide by $1.127 billion) to adjust the rate from the sample revenue to the universe revenue. For Rate HT, for example, this procedure yielded a CTC demand charge of $8.89/kW-month.

The energy-related portion of the CTC will be blocked according to the current energy blocking for Rates HT, PD, and EP excluding fuel. In other words, PECO Energy maintained the same percentage differentials among the energy blocks, excluding fuel, that exist in the current rates. For Rate HT, for example, the percentage differentials between the first and second blocks is 39.8% and

between the second and third blocks is 79.2%. Applying these differentials yielded CTC energy charges of 4.85 cents per kWh for the first 150 hours' use, 2.92 cents per kWh for the next 150 hours' use, and 1.01 cents per kWh for all additional use over 300 hours.

Rates SL-S and SL-E

For the Pilot only, PECO Energy's preliminary unbundling is different than for the base rates described above. To unbundle these rates, PECO Energy removed the energy and capacity embedded in them. What remains are charges for costs that include transmission, distribution, and other miscellaneous fixed and operating costs.

This method of preliminary unbundling is necessary at this time because of the way costs were allocated to these two rates in the Limerick 2 base rate case. The energy and capacity allocated to these two rates is less than any reasonable projection of the market price for energy, and therefore it is not now possible to follow the unbundling procedure described above for PECO Energy's primary base Rates. Had PECO Energy followed that procedure, the result would have been a negative CTC. That is, since the unbundled energy price would have been greater than that embedded in the base Rate, PECO Energy would have had to actually refund money through the CTC charge in order to comply with the generation-related Rate Cap that the Act imposes (66 Pa.C.S. §2804(4)(ii)).

When PECO Energy files its Restructuring Plan on or about April 1, 1997, it hopes to address this anamoly more fully, and propose unbundled street lighting rates that contain reasonable allocations of transmission, distribution, and CTC-related costs.

RATE CLASSES NOT UNBUNDLED FOR NAME PLACEHOLDER

PECO Energy will not include in the Pilot some current PECO Energy rate classes. The particular rates, and the reason for the exclusion from the Pilot, are as follows:

Rate BLI - Borderline Interchange Service, is a mechanism PECO Energy and a neighboring utility use when residential customers who are located along a service territory border in a neighboring utility's service territory are served physically by PECO Energy but billed by the neighboring utility in whose service territory they are located. A BLI contract sets forth the rates PECO Energy

charges the neighboring utility for supplying capacity and distribution services in such cases. The customers that are the subject of the BLI contract are therefore not PECO Energy Customers; they are customers of the neighboring utility. There is therefore no reason to unbundle this "mechanism of convenience."

Any PECO Energy residential Customer that is served under a neighboring utility's equivalent of PECO Energy's Rate BLI (approximately 20 Customers) is a Rate R or R-H Customer, and therefore, if randomly selected to be an Eligible Customer, will be able to obtain supply from an Electric Generation Supplier as such.

CAP Rate and CAP Program - The CAP Rate is a pilot program within the Customer Assistance Program and therefore will not be unbundled. Customers that wish to have the opportunity to participate in the Pilot may do so by switching from the CAP Rate to Rate R or RH or out of the CAP Program to Rate R or RH before the Eligible Customer selection process takes place. PECO Energy observes that Customers served pursuant to the non-cost-based Cap Rate currently receive discounts ranging from 25 to 50% based on low-income qualifications, and that Customers in the original CAP Program receive an even larger discount.

Rate RT - This residential time-of-use rate should not be unbundled since the difference between the rates it contains and the rates contained in Rate R are the result only of time-of-use based generating cost differentials. Transmission and distribution costs for Rate RT Customers are no different than those applicable to Rate R Customers. As such, and since there are only 12 customers currently on Rate RT, the prudent course is to allow Rate RT Customers to participate by switching to Rate R or RH, if their current contracts permit such a switch, before the Eligible Customer selection process begins.

Rate OP - PECO Energy has not unbundled Rate OP since the rate is an interruptible service. Customers served under Rate OP have special meters that allow PECO Energy to interrupt them in certain hours. Unbundling would require PECO Energy to determine a market price for this unique type of interruptible service (a market price is required for unbundling), which would take a significant amount of effort that is not warranted at this time. In addition, Rate OP Customers must also be Rate R or RH Customers for the portion of their loads that are not connected to their special OP meter, and will therefore also have the opportunity to be selected as Eligible Customers in their capacities as Rate R or RH Customers.

Rate POL - PECO Energy has not unbundled this Private Outdoor Lighting rate since it is really a unique "end-use" rate under which PECO Energy owns all of the lighting equipment, rather than an "electric sales" rate. Customers taking service under this rate already have other outdoor lighting options, and pay for

electricity for those lighting options pursuant to PECO Energy rates that will be unbundled (i.e., Rate GS, Rate R).

Rate TL - PECO Energy proposes to exclude Rate TL (the Traffic Lighting rate) from the Pilot for practical reasons. Currently, PECO Energy's accounting records will not permit PECO Energy to unbundle the rate in the manner PECO Energy used to unbundle other Rates. PECO Energy will work to correcting these deficiencies to enable unbundling of Rate TL in advance of January 1, 1999, which is the date the phase-in of full Direct Access is scheduled to begin.

Rate SL-P - PECO Energy has not unbundled Rate SL-P (Street Lighting Philadelphia) for the Pilot since all SL-P accounts are subject to a special contract between PECO Energy and the City entered into pursuant to Rule 4.6 of PECO Energy's Tariff for Electric Service and approved in 1996 by the Commission. The rules of the Pilot, as well as the terms and conditions of the special contract itself, preclude eligibility of those accounts for the Pilot.

Appendix B - Attachment 1
Derivation of Pilot Revenue Requirements (a)

	R	RH	GS	PD	HT	EP	SLE	SLS	Other	Total
R-891364 Compliance Revenues	$ 992,500	$ 250,196	$ 591,929	$ 159,212	$ 1,126,829	$ 56,625	$ 3,614	$ 15,945	$ 89,891	$ 3,286,741
Post 4/90 STAC Roll-ins, FASB	$ 19,476	$ 4,910	$ 11,616	$ 3,124	$ 22,112	$ 1,111	$ 71	$ 313	$ 970	$ 63,703
ECA Roll-in	$ (30,422)	$ (10,723)	$ (21,348)	$ (6,841)	$ (62,303)	$ (3,274)	$ (83)	$ (208)	$ (2,329)	$ (137,531)
Total Including Market Production	$ 981,554	$ 244,383	$ 582,197	$ 155,495	$ 1,086,638	$ 54,462	$ 3,602	$ 16,050	$ 88,532	$ 3,212,913

(a) Reflects all STAC, ECA, and FASB base rate roll-ins from 4/21/90 through 12/31/96.

Appendix B - Attachment 2
Unbundled Revenue Requirements ($1000)

Function	Rate R	RH	GS	PD	HT	EP	SLE (b)	SLS (b)
Transmission	$ 43,455	$ 8,674	$ 30,315	$ 7,917	$ 64,979	$ 2,946		
Distribution & Other (a)	$ 315,416	$ 69,120	$ 74,545	$ 10,750	$ 45,813	$ 7,032		
Customer	$ 70,158	$ 8,458	$ 19,532	$ 5,963	$ 8,540	$ 597		
CTC-Demand	-	-	-	$ 28,171	$ 248,866	$ 18,991		
CTC-Energy	$ 376,917	$ 96,462	$ 332,927	$ 63,117	$ 374,077	$ 5,824		
Total	$ 805,946	$ 182,714	$ 457,319	$ 115,918	$ 742,275	$ 35,390	$ 3,255	$ 15,147
Market Production	$ 175,608	$ 61,669	$ 124,878	$ 39,577	$ 344,363	$ 19,072	$ 347	$ 903
Total including Market	$ 981,554	$ 244,383	$ 582,197	$ 155,495	$ 1,086,638	$ 54,462	$ 3,602	$ 16,050

(a) Includes distribution and sales costs less customer charge revenues.
(b) Market Production for SLE and SLS reflects PECO Energy's production costs and fuel costs.

Appendix B - Attachment 3, Sheet 1
Calculation of Revenue - Rate R

	Sample (1)		Pricing (2)		Revenue (3)=(1)x(2)
1. Number of Bills	7530804	$	5.10	$	38,407,100
2. Transmission Charge	4112905410	$	0.006319	$	25,989,449
3. Distribution Charge	4112905410	$	0.045868	$	188,650,745
4. CTC Surcharge					
Up To 500 kWh	2867377415	$	0.052698	$	151,105,055
kWh Over 500-Winter	552462310	$	0.052698	$	29,113,659
kWh Over 500-Summer	693065685	$	0.071296	$	49,412,811
5. Total				$	482,678,819
6. Proforma Base Revenue				$	805,946,000
Sample Revenue After Increase		$	594,405,202		
Universal Revenue After Increase		$	992,500,000		

Appendix B - Attachment 3, Sheet 2
Calculation of Revenue - Rate RH

	Sample (1)		Pricing (2)		Revenue (3)=(1)x(2)
1. Number of Bills	585228	$	5.10	$	2,984,663
2. Transmission Charge	900817283	$	0.003579	$	3,224,025
3. Distribution Charge	900817283	$	0.028518	$	25,689,507
4. CTC Surcharge					
Up To 500 kWh	277447242	$	0.072392	$	20,084,961
Summer-kWh Over 500	133324769	$	0.090992	$	12,131,487
Winter-kWh 500 To 600	34126338	$	0.072392	$	2,470,474
Winter-kWh Over 600	455918934	$	0.005592	$	2,549,499
5. Total				$	69,134,616
6. Proforma Base Revenue				$	182,714,000
Sample Revenue After Increase		$	94,668,088		
Universal Revenue After Increase		$	250,196,000		

Appendix B - Attachment 3, Sheet 3
Calculation of Revenue - Rate GS (and space heating)

	Sample (1)	Pricing (2)		Revenue (3)=(1)x(2)
1. Customer Chg				
Single Phase Cust, No Demand	340716	6.63	$	2,258,947
Single Phase Cust, With Demand	436416	8.67	$	3,783,727
Poly Phase Cust	291492	23.45	$	6,835,487
2. Transmission Charge	2902312639	0.006282	$	18,232,328
3. Distribution Charge	2902312639	0.015448	$	44,834,926
4. CTC Surcharge				
First 80 Hours Use	790467824	0.138734	$	109,664,763
Next 80 Hours Use-Summer	288945712	0.066176	$	19,121,271
Additional Use Except	1509290780	0.042453	$	64,073,921
Over 400 Hrs. and 2000 kWh	99799835	0.019700	$	1,966,057
Space Heating Use	213808488	0.033851	$	7,237,631
5. Total			$	278,009,058
6. Proforma Base Revenue			$	457,319,000
Sample Revenue After Increase		$ 359,839,818		
Universal Revenue After Increase		$ 591,929,000		

Appendix B, Attachment 3, Sheet 4
Calculation of Revenue - Rate PD

	Sample (1)		Pricing (2)		Revenue (3)=(1)x(2)
1. Number of Bills	21203	$	275.28	$	5,836,762
2. Transmission Charge kW	4524332	$	1.836029	$	8,306,805
3. Distribution Charge	1646857538	$	0.006952	$	11,448,954
4. CTC Surcharge					
Number of kW	4524332	$	6.533126	$	29,558,031
kWh-First 150 Hrs	678227581	$	0.059878	$	40,610,911
kWh-Next 150 Hrs	566512980	$	0.036346	$	20,590,481
kWh-Addl Use	402116977	$	0.013113	$	5,272,960
5. Total				$	121,624,904
6. Proforma Base Revenue				$	115,918,000
Sample Revenue After Increase				$	167,050,986
Universal Revenue After Increase				$	159,212,000

Appendix B - Attachment 3, Sheet 5
Calculation of Revenue - Rate HT

	Sample (1)	Pricing (2)	Revenue (3)=(1)x(2)
1. Number of Bills	28807	$ 286.86	$ 8,263,576
2. Transmission Charge kW	26704961	$ 2.322211	$ 62,014,554
3. Distribution Charge	13206082665	$ 0.003253	$ 42,959,387
4. CTC Surcharge			
Number of kW	26704961	$ 8.893940	$ 237,512,321
kWh-First 150 Hrs	3980271288	$ 0.048491	$ 193,007,335
kWh-Next 150 Hrs	3747600369	$ 0.029192	$ 109,399,950
kWh-Addl Use	5478211008	$ 0.010086	$ 55,253,236
5. Total			$ 708,410,359
6. Proforma Base Revenue			$ 742,274,000
Sample Revenue After Increase			$ 1,075,421,165
Universal Revenue After Increase			$ 1,126,829,000

Appendix B - Attachment 3, Sheet 6
Calculation of Revenue - Rate EP

	Sample (1)	Pricing (2)	Revenue (3)=(1)x(2)
1. Service Charge	480	1243.85	$ 597,048
2. Transmission Charge kW	2079661	1.428910	$ 2,971,648
3. Distribution Charge	735444000	0.009503	$ 6,988,924
4. CTC Surcharge			
Number of kW	2079661	9.211278	$ 19,156,336
Energy kWh	735444000	0.008137	$ 5,984,308
5. Total			$ 35,698,264
6. Proforma Base Revenue			$ 35,390,000
Sample Revenue After Increase			$ 57,117,978
Universal Revenue After Increase			$ 56,625,000

Appendix B - Attachment 3, Sheet 7
Calculation of Revenue - Rate SLE

	Sample (1)	Pricing (2)	Revenue (3)=(1)x(2)
1. Service Charge	353496	10.01	$ 3,538,495
2. Capacity Charge/watt	19218044	0.001595	$ 30,653
3. Energy Charge	20522000	0	$ -
4. Total			$ 3,569,148
5. Proforma Base Revenue			$ 3,255,000
Sample Revenue After Increase			$ 3,962,788
Universal Revenue After Increase			$ 3,614,000

Appendix B - Attachment 3, Sheet 8
Calculation of Revenue - Rate SLS

	Number of Lamps (1)	Pricing (2)	Revenue (3)=(1)x(2)
INCANDESCENT			
1. 320 LUMENS	165	$ 96.89	$ 15,987
2. 600 LUMENS	41	$ 133.93	$ 5,491
3. 1000 LUMENS	7969	$ 186.17	$ 1,483,589
4. 2500 LUMENS	1087	$ 251.43	$ 273,304
5. 6000 LUMENS	124	$ 269.71	$ 33,444
6. 10000 LUMENS	0	$ 310.78	$ -
SUB TOTAL	9386		$ 1,811,815
MERCURY VAPOR			
7. 4000 LUMENS	26244	$ 219.56	$ 5,762,133
8. 8000 LUMENS	11156	$ 226.40	$ 2,525,718
9. 12000 LUMENS	2644	$ 235.79	$ 623,429
10. 20000 LUMENS	4172	$ 268.62	$ 1,120,683
11. 42000 LUMENS	158	$ 370.26	$ 58,501
12. 59000 LUMENS	142	$ 399.68	$ 56,755
SUBTOTAL	44516		$ 10,147,219
SODIUM VAPOR			
13. 5800 LUMENS	653	$ 219.51	$ 143,340
14. 9500 LUMENS	478	$ 236.39	$ 112,994
15. 16000 LUMENS	230	$ 261.97	$ 60,253
16. 25000 LUMENS	1901	$ 291.64	$ 554,408
17. 50000 LUMENS	656	$ 339.62	$ 222,791
SUBTOTAL	3918		$ 1,093,786
18. TOTAL	57820		$ 13,052,820
19. Proforma Base Revenue			$ 15,147,000
Sample Revenue After Increase			$ 13,740,226
Universal Revenue After Increase			$ 15,945,000

Appendix B - Attachment 4

1997 Prices of Market Generation by Rate Class

Scenario: PJM Load Forecast with NYMEX Natural Gas Forecast

Methodology:

1 Use PJM forecasts for 1997 for annual on-peak and annual off-peak
2 Weight-average the annual numbers according to class load factors
3 Gross up annual numbers by rate class loss factors

	PJM on-peak[1]	PJM off-peak[1]	Off-pk %[2]	Weight-average	Loss factor[3]	Loss-adj
Rate R	2.57	2.05	64.88%	2.23	9.35%	2.55
Rate RH	2.57	2.05	66.45%	2.22	9.35%	2.54
Rate GS	2.57	2.05	59.15%	2.26	9.35%	2.59
Rate PD	2.57	2.05	57.55%	2.27	7.76%	2.56
Rate HT	2.57	2.05	61.20%	2.25	3.82%	2.45
Rate EP	2.82	2.05	58.00%	2.37	3.82%	2.58
Rate SLS	2.57	2.05	97.00%	2.07	9.35%	2.26
Rate SLE	2.57	2.05	97.00%	2.07	9.35%	2.26

1 ICF Kaiser forecast using Wholesale Power Marketing Model, 11/15/96
2 FERC-PURPA 210, Study of Rates R, RH, GS, PD, and HT, 1987; for Rates SLS and SLE, assumption was 3 hours per day of on-peak usage, 4 days per week for 4 months; Rate EP based on off-peak consumption for Amtrak and SEPTA for calendar 1996
3 R-891364 (C-1, C-2)

Appendix B - Attachment 5, Sheet 1
Rate R Comparision - Bundled vs. Unbundled

Bundled (a)						**Unbundled**					
kWh billed	500 kWh					kWh billed	500 kWh				
Customer Charge					$5.10	Fixed Distribution Charge					$5.10
Energy Charge:											
Block 1 (kWh)	$0.1305	x	500	=	$65.25	Transmission Service Charge (kWh)	$0.0063	x	500	=	$3.17
						Variable Distribution Charge (kWh)	$0.0459	x	500	=	$22.95
Block 2 (kWh)	$0.1491	x	0	=	$0.00						
						Competitive Transition Charge:					
						Block 1 (kWh)	$0.0527	x	500	=	$26.36
						Block 2 (kWh)	$0.0713	x	0	=	$0.00
PECO Total					**$70.35**	**PECO Total**					**$57.58**
						Competitive Market Generation	$0.0255	x	500	=	$12.77
Total					**$70.35**	**Total**					**$70.35**

(a) Bundled rates from PECO Energy Supplement 10 to Tariff Electric Pa PUC No.2 effective 12/31/96.

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Appendix B - Attachment 5, Sheet 2
Rate RH Comparision - Bundled vs. Unbundled

Winter

Bundled (a)						**Unbundled**					
kWh billed	1011 kWh					kWh billed	1011 kWh				
Customer Charge					$5.10	Fixed Distribution Charge					$5.10
Energy Charge:											
Block 1 (kWh)	$0.1305	x	600	=	$78.30	Transmission Service Charge (kWh)	$0.0036	x	1011	=	$3.62
						Variable Distribution Charge (kWh)	$0.0285	x	1011	=	$28.81
Block 2 (kWh)	$0.0637	x	400	=	$25.48						
						Competitive Transition Charge:					
						Block 1- first 600 kWh	$0.0724	x	600	=	$43.44
						Block 2 - additional kWh	$0.0056	x	400	=	$2.24
PECO Total					**$108.88**	**PECO Total**					**$83.20**
						Competitive Market Generation	$0.0254	x	1011	=	$25.68
Total					**$108.88**	**Total**					**$108.88**

(a) Bundled rates from PECO Energy Supplement 10 to Tariff Electric Pa PUC No.2 effective 12/31/96.

Appendix B - Attachment 5, Sheet 3
Rate GS Comparision - Bundled vs. Unbundled

Summer

Bundled						**Unbundled**					
kWh billed	10880 kWh					kWh billed	10880 kWh				
Billed Demand	30 kW					Billed Demand	30 kW				
Customer Charge					$23.45	Fixed Distribution Charge					$23.45
Energy Charge:											
Block 1 (kWh) - first 80 hrs.	$0.2214	x	2400	=	$531.36	Transmission Service Charge (kWh)	$0.0063	x	10880	=	$68.35
Block 2 (kWh) - next 80 hrs	$0.1124	x	2400	=	$269.76	Variable Distribution Charge (kWh)	$0.0154	x	10880	=	$167.55
Block 3 (kWh) - next 240 hr	$0.0767	x	6080	=	$466.34						
Block 4 (kWh) - additional	$0.0425	x	0	=	$0.00	Competitive Transition Charge:					
						Block 1 (kWh) - first 80 hrs.	$0.1387	x	2400	=	$332.88
						Block 2 (kWh) - next 80 hrs.	$0.0662	x	2400	=	$158.80
						Block 3 (kWh) - next 240 hrs.	$0.0425	x	6080	=	$258.10
						Block 4 (kWh) - additional	$0.0197	x	0	=	$0.00
PECO Total					**$1,290.91**	**PECO Total**					**$1,009.12**
						Competitive Market Generation	$0.0259	x	10880	=	$281.79
Total					**$1,290.91**	**Total**					**$1,290.91**

(a) Bundled rates from PECO Energy Supplement 10 to Tariff Electric Pa PUC No.2 effective 12/31/96.

Appendix B - Attachment 5, Sheet 3a
Rate GS - Separate Meter Electric Heating: Comparision - Bundled vs. Unbundled

Bundled						**Unbundled**					
kWh billed	10000 kWh					kWh billed	10000 kWh				
Billed Demand	30 kW					Billed Demand	30 kW				
Heating kWh	4300 kWh					Heating kWh	4300 kWh				
Customer Charge					$23.45	Fixed Distribution Charge					$23.45
Energy Charge:											
Block 1 (kWh) - first 80 hrs.	$0.2214	x	2400	=	$531.36	Transmission Service Charge (kWh)	$0.0063	x	10000	=	$63.00
Block 3 (kWh) - next 320 hr	$0.0767	x	7600	=	$582.92	Variable Distribution Charge (kWh)	$0.0154	x	10000	=	$154.00
Block 4 (kWh) - additional	$0.0425	x	0	=	$0.00						
						Competitive Transition Charge:					
Electric heating:	$ 0.0637	x	4300	=	$273.91	Block 1 (kWh) - first 80 hrs.	$0.1387	x	2400	=	$332.88
						Block 3 (kWh) - next 240 hrs.	$0.0425	x	7600	=	$322.62
						Block 4 (kWh) - additional	$0.0197	x	0	=	$0.00
						Electric heating	$0.0338	x	4300	=	$ 145.34
PECO Total					**$1,411.64**	**PECO Total**					**$1,041.29**
						Competitive Market Generation	$0.0259	x	14300	=	$370.35
Total					**$1,411.64**	**Total**					**$1,411.64**

(a) Bundled rates from PECO Energy Supplement 10 to Tariff Electric Pa PUC No.2 effective 12/31/96.

Appendix B - Attachment 5, Sheet 4
Rate PD Comparision - Bundled vs. Unbundled

Bundled								**Unbundled**							
kWh billed	100112 kWh							kWh billed	100112 kWh						
Billed Demand	272 kW							Billed Demand	272 kW						
Customer Charge							$275.28	Fixed Distribution Charge						=	$275.28
Capacity Charge (kW)		9.25	x	272	=	$	2,516.00								
Energy Charge:															
Block 1 (kWh) - first 150 hrs.	0.0977	x 150	x	272	=	$	3,986.16	Transmission Service Charge (kW)	$1.84	x 272				=	$500
Block 2 (kWh) - next 150 hrs.	0.0643	x 150	x	272	=	$	2,623.44	Variable Distribution Charge (kWh)	$0.0070	x 100112				=	$700.78
Block 3 (kWh) - additional hrs.	0.0314	x 68.06	x	18512	=	$	581.28								
								Competitive Transition Charge:							
								Capacity Charge (kW)	$6.53	x 272				=	$ 1,777.01
								Block 1 (kWh) - first 150 hrs.	$0.0599	x 150	x	272	=	$	2,442.19
								Block 2 (kWh) - next 150 hrs.	$0.0363	x 150	x	272	=	$	1,481.04
								Block 3 (kWh) - additional hrs.	$0.0131	x 68.0588	x	18512	=	$	242.51
PECO Total							**$9,982.16**	**PECO Total**							**$7,419.30**
								Competitive Market Generation	$0.0256	x 100112				=	$2,562.87
Total							**$9,982.16**	**Total**							**$9,982.16**

(a) Bundled rates from PECO Energy Supplement 10 to Tariff Electric Pa PUC No.2 effective 12/31/96.

Appendix B - Attachment 5, Sheet 5
Rate HT Comparision - Bundled vs. Unbundled

Bundled								**Unbundled**							
kWh billed	258695 kWh							kWh billed	258695 kWh						
Billed Demand	500 kW							Billed Demand	500 kW						
Customer Charge							$286.86	Fixed Distribution Charge						=	$286.86
Capacity Charge (kW)		12.76	x	500	=	$	6,380.00								
Energy Charge:															
Block 1 (kWh) - first 150 hrs.	0.0829	x 150	x	500	=	$	6,217.50	Transmission Service Charge (kW)	$2.32	x 500				=	$1,160
Block 2 (kWh) - next 150 hrs.	0.055	x 150	x	500	=	$	4,125.00	Variable Distribution Charge (kWh)	$0.0033	x 258695				=	$840.76
Block 3 (kWh) - additional hrs.	0.0274	x 217.4	x	108695	=	$	2,978.24								
								Competitive Transition Charge:							
								Capacity Charge (kW)	$8.89	x 500				=	$ 4,445.00
								Block 1 (kWh) - first 150 hrs.	$ 0.0485	x 150	x	500		=	$ 3,634.50
								Block 2 (kWh) - next 150 hrs.	$ 0.0292	x 150	x	500		=	$ 2,189.25
								Block 3 (kWh) - additional hrs.	$ 0.0101	x 217.39	x	108695		=	$ 1,095.79
PECO Total							**$19,987.60**	**PECO Total**							**$13,652.16**
								Competitive Market Generation	$0.0245	x 258695				=	$6,335.44
Total							**$19,987.60**	**Total**							**$19,987.60**

(a) Bundled rates from PECO Energy Supplement 10 to Tariff Electric Pa PUC No.2 effective 12/31/96.

Appendix B - Attachment 5, Sheet 6
Rate EP Comparision - Bundled vs. Unbundled

Bundled						**Unbundled**				
kWh billed	447003 kWh					kWh billed	447003 kWh			
Billed Demand	1225 kW					Billed Demand	1225 kW			
Customer Charge					$1,243.85	Fixed Distribution Charge			=	$1,243.85
Capacity Charge (kW)	16.46	x	1225	= $	20,163.50					
Energy Charge:	0.027	x	447003	= $	12,247.88					
						Transmission Service Charge (kW)	$1.43	x 1225	=	$1,750
						Variable Distribution Charge (kWh)	$0.0095	x 447003	=	$4,246.53
						Competitive Transition Charge:				
						Capacity Charge (kW)	$9.21	x 1225	= $	11,282.25
						Energy (kWh)	$ 0.0081	x 447003	= $	3,620.72
PECO Total					**$33,655.23**	**PECO Total**				**$22,143.76**
						Competitive Market Generation	$0.0258	x 447003	=	$11,511.47
Total					**$33,655.23**	**Total**				**$33,655.23**

(a) Bundled rates from PECO Energy Supplement 10 to Tariff Electric Pa PUC No.2 effective 12/31/96.

Appendix B - Attachment 5, Sheet 7
Rate SLE Comparision - Bundled vs. Unbundled

Bundled							**Unbundled**						
kWh billed	10715 kWh						kWh billed	10715 kWh					
Billed Demand	31361 W						Billed Demand	31361 W					
Number of Locations	211						Number of Locations	211					
Customer Charge		$ 10.01	x	211	=	$2,112.11	Fixed Distribution Charge		$ 10.01	x	211	=	$2,112.11
Capacity Charge (kW)		*$ 0.00276*	*x*	*31361*	=	*$ 86.56*	*Transmission Service Charge (W)*	*$0.0016*	*x*	*31361*		=	*$50.18*
Energy Charge:		$ 0.0174	x	10715	=	$ 186.55							
PECO Total						**$2,385.21**	**PECO Total**						**$2,162.29**
							Competitive Market Generation	$0.0208	x	10715		=	$222.93
Total						**$2,385.21**	**Total**						**$2,385.21**

(a) Bundled rates from PECO Energy Supplement 10 to Tariff Electric Pa PUC No.2 effective 12/31/96.

Appendix B - Attachment 5, Sheet 8
Rate SLS Comparision - Bundled vs. Unbundled

Bundled

Lamp type	Billing Watts	No. of lamps		Monthly Chg.		
Incandescent						
320 lumens	32	1	x	$8.27	= $	8.27
600 lumens	58	1	x	$11.53	= $	11.53
1000 lumens	103	1	x	$16.17	= $	16.17
2500 lumens	202	1	x	$22.25	= $	22.25
6000 lumens	448	1	x	$25.38	= $	25.38
10000 lumens	690	1	x	$30.39	= $	30.39
Mercury Vapor						
4000 lumens	115	1	x	$19.02	= $	19.02
8000 lumens	191	1	x	$20.09	= $	20.09
12000 lumens	275	1	x	$21.42	= $	21.42
20000 lumens	429	1	x	$25.92	= $	25.92
42000 lumens	768	1	x	$35.85	= $	35.85
59000 lumens	1,090	1	x	$40.41	= $	40.41
Sodium Vapor						
5800 lumens	94	1	x	$18.88	= $	18.88
9500 lumens	131	1	x	$20.53	= $	20.53
16000 lumens	192	1	x	$23.06	= $	23.06
25000 lumens	294	1	x	$26.20	= $	26.20
50000 lumens	450	1	x	$31.21	= $	31.21
PECO Total	5562				$	396.57
Total kWh	1900					
Total						$396.57

Unbundled

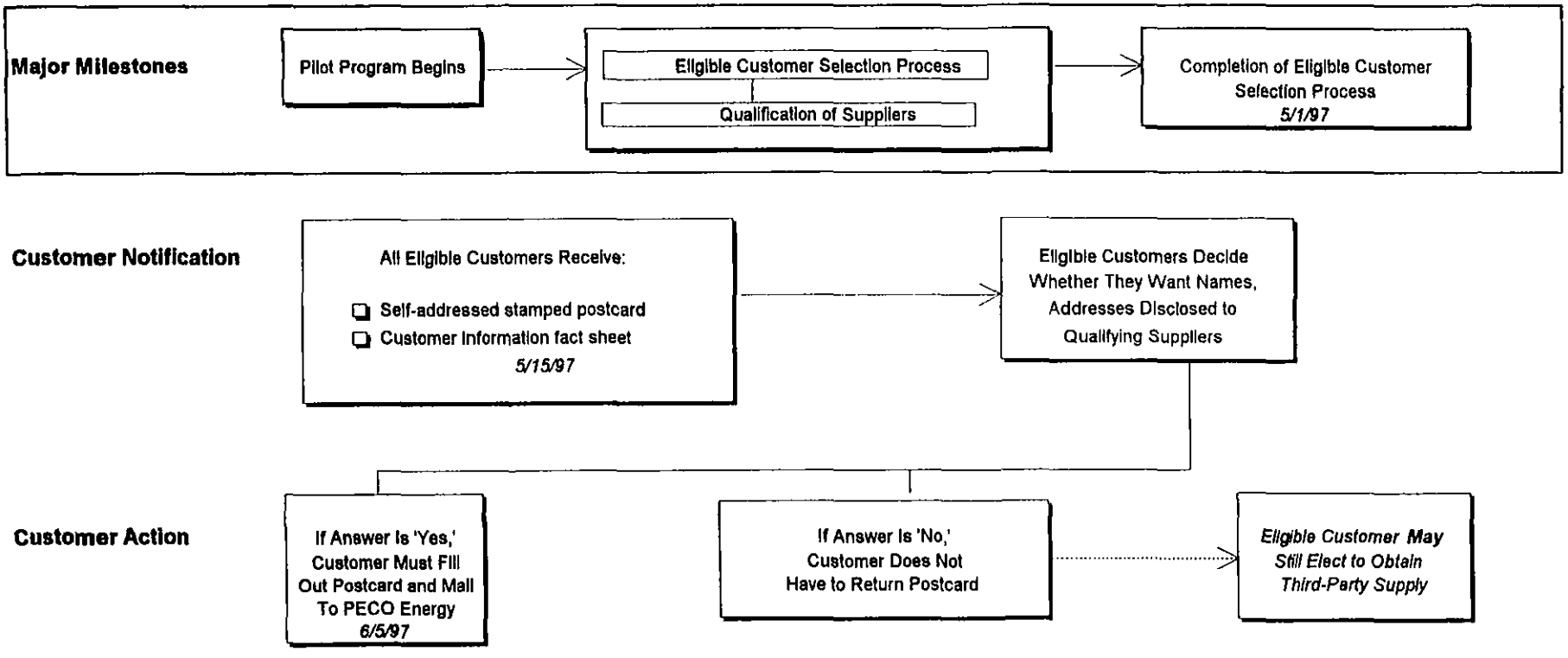
Lamp type	No. of lamps		Monthly Chg.		
Incandescent					
320 lumens	1	x	$8.07	= $	8.07
600 lumens	1	x	$11.16	= $	11.16
1000 lumens	1	x	$15.51	= $	15.51
2500 lumens	1	x	$20.95	= $	20.95
6000 lumens	1	x	$22.48	= $	22.48
10000 lumens	1	x	$25.90	= $	25.90
Mercury Vapor					
4000 lumens	1	x	$18.30	= $	18.30
8000 lumens	1	x	$18.87	= $	18.87
12000 lumens	1	x	$19.65	= $	19.65
20000 lumens	1	x	$22.39	= $	22.39
42000 lumens	1	x	$30.86	= $	30.86
59000 lumens	1	x	$33.31	= $	33.31
Sodium Vapor					
5800 lumens	1	x	$18.29	= $	18.29
9500 lumens	1	x	$19.70	= $	19.70
16000 lumens	1	x	$21.83	= $	21.83
25000 lumens	1	x	$24.30	= $	24.30
50000 lumens	1	x	$28.30	= $	28.30
PECO Total				$	359.87
Competitive Market Generation	$0.0193	x	1900	=	$36.70
Total				$	396.57

(a) Bundled rates from PECO Energy Supplement 10 to Tariff Electric Pa PUC No.2 effective 12/31/96.

Appendix C - Customer/Supplier Timeline

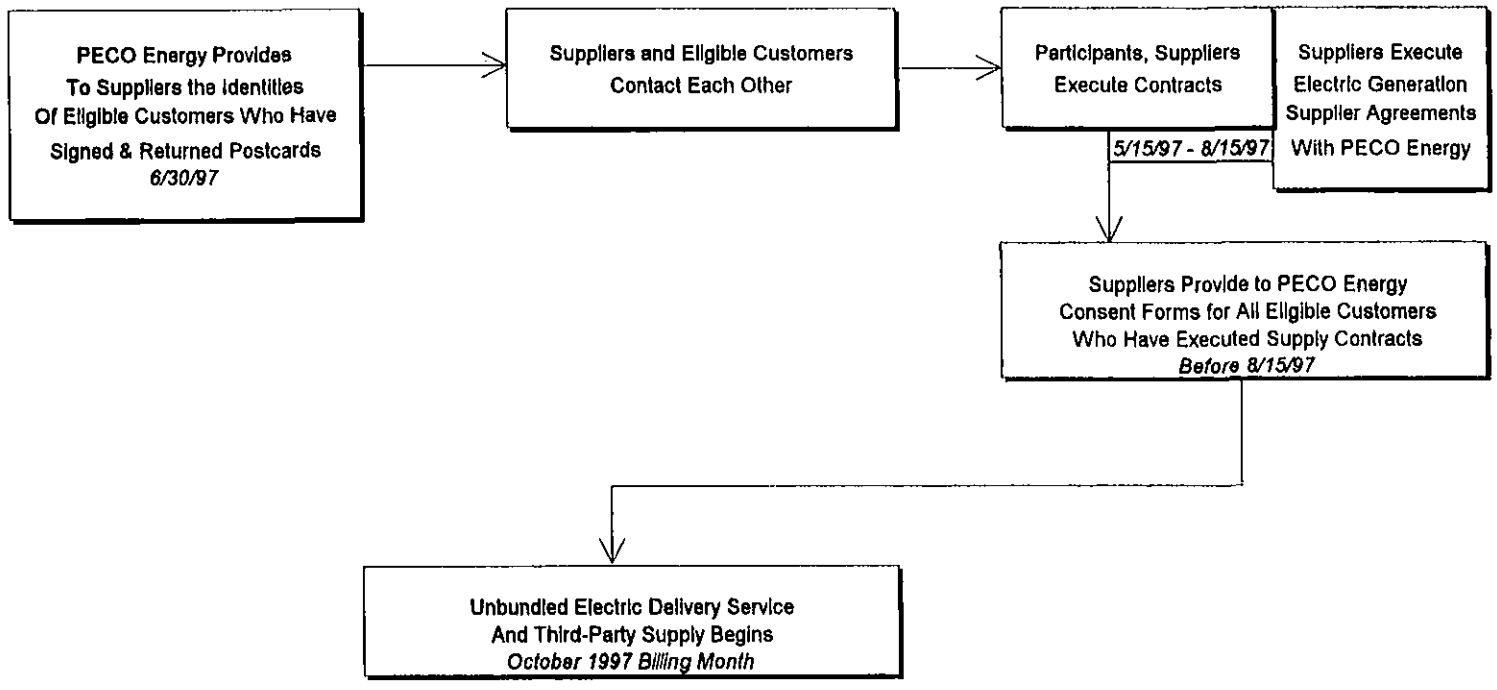
Activity/Action	Date
Pilot Program Begins	4/1/97
Eligible Customer Selection Process Begins	4/1/97
Supplier Qualification Begins	4/1/97
Eligible Customer Selection Process Ends	5/1/97
Eligible Customers Receive Notification of Selection And Information Packets from PECO Energy	5/15/97
Eligible Customers, Whether They Wish to Obtain Third-Party Supply Or Not, May Return Postcard to PECO Energy Indicating Consent to Disclosure of Their Identities to Third-Party Suppliers	6/13/97
PECO Energy Provides to Qualified Suppliers the Initial List Of Eligible Customers That Have Consented to Such Disclosure	6/30/97
Eligible Customers and Suppliers Execute Initial Contracts	5/15/97 - 8/15/1997
Suppliers Provide to PECO Energy Consent Forms Signed By All Eligible Customers With Whom They Have Executed Contracts That Will Begin in the October 1997 Billing Month	Before 8/15/1997
Suppliers Execute Electric Generation Supplier Agreements With PECO Energy	Before 8/15/1997 Or Beginning of Their Supply
Unbundled Electric Delivery Service and Third-Party Supply Begins	October 1997 Billing Month

Appendix C - Customer Eligibility/Participation Process



Appendix C - Customer Eligibility/Participation Process

Participant-Supplier Contact



Appendix D

Electric Generation Competition

Public Education Efforts

Goal:

Create a campaign to inform and educate the public about electric generation competition. Include educating the public about PECO Energy's pilot program, and the role it will play in electric utility deregulation in Pennsylvania.

Objectives:

- Inform and educate the public about electric generation competition and provide information regarding the likely level of savings that electric generation competition may create.
- Utilize the numerous networks of business and community organizations to reach out to as many audiences as possible.
- Keep the news media informed and educated to assist them in reaching the broader audience with accurate and updated information.
- Continue educating PECO Energy's 7,000 employees about electric generation competition.

Audiences:

For the purpose of advertising, the target audience will be adults 25 years of age and over in the PECO Energy service territory. The goal will be to reach the widest audience possible in Philadelphia, Bucks, Chester, Delaware, Montgomery, and York Counties.

Specifically, audiences will include all customers; senior citizens; business and community associations and groups; PECO Energy employees, annuitants and contractors; local elected officials; and the news media.

The Program:

PECO Energy's "Public Education" campaign will include the following elements: research; development of educational materials, including a question and answer brochure, distribution of an electric generation competition newsletter

and additional brochures for a variety of audiences; PECO Energy employee education; media relations; outreach to community and business organizations; development of a Speakers Bureau for external audiences; use of the Internet and paid advertising.

Research:

The "Public Education" campaign will need to conduct ongoing public opinion research to measure the success of the education efforts and to assist in developing and refining the messages.

Development of Educational Materials:

Materials will include a question and answer brochure for several audiences, brief facts/handout, a newsletter, fact kit, special bill inserts, and additional brochures and materials as needed.

PECO Energy Employee Communications:

Special efforts will be made to inform and educate PECO Energy employees about electric generation competition and the upcoming Pilot. Efforts will include a question and answer brochure to enable employees to answer questions, facts/handout, use of video to discuss most frequently asked questions, special executive visits to include all employees, use of e-mail lists for key PECO Energy team leaders, use of internal organizations to educate employees and provide for feedback, employee newsletters and bi-weekly employee newspaper. The goal will be to enable PECO Energy employees to become ambassadors to their communities regarding the changes in the electric industry that are about to unfold.

Media Relations:

Media relations efforts will include creation of a media fact kit, editorial board visits, frequent update meetings with editors and reporters, radio talk shows, cable television call-in shows, public affairs programming, and morning television shows.

Outreach to Community and Business Organizations:

Outreach to community and business organizations will include community meetings and town meetings jointly sponsored with community and business organizations to inform and educate key audiences (i.e. Chambers of Commerce, AARP, Urban League, senior groups, low income groups). PECO Energy will work with community and business groups and encourage them to educate their members through newsletters, brochures, and question and

answer formats. PECO Energy will provide information and jointly produce materials.

In addition, PECO Energy will provide information, materials and camera ready inserts to be used in publications/newsletters of community and business organizations.

Speakers Bureau:

PECO Energy will create a Speakers Bureau on electric generation competition and provide materials and speaker training to community groups and business organizations and will participate in town meetings.

Public Education Advertising:

A public education advertising campaign will be created to extend the reach to a greater audience. The campaign will include print advertising, as well as radio to reach the widest audience possible of adults 25 years and older.

Pilot Launch:

Education efforts will need to prepare for the launch of PECO Energy's Pilot. The launch of the Pilot will provide an opportunity to educate the public by positioning it as the first step toward electric generation competition.

PECO Energy World-Wide-Web Site:

Approved education information on electric generation competition will be made available on the PECO Energy Web Site on the Internet.

Timetable:

Educational efforts for PECO Energy employees began in December, 1996 and are ongoing. Town meetings and Speakers Bureau activity with community organizations will begin in the first quarter of 1997 and increase in frequency through the Summer of 1997. Print advertising began in February, 1997, with radio spots running for a three-month period in the first half of the year. Through the Eligible Customer selection and contract sign-up periods and thereafter, information on the program will be sent to Eligible Customers by direct mail on a regular basis.

Appendix E

Standard Billing Formats and Monthly Charges

Standard billing formats that PECO Energy will offer to Electric Generation Suppliers are as follows

1. Dollars per kWh

2. Dollars per kWh
   Dollars per kW

3. Fixed dollars per month

The fee PECO Energy will charge for this billing service will be $0.90 per bill.

Appendix F

Participating Customer Consent Form

I have read and understood the Eligible Customer Information Fact Sheet, I have read and signed a written agreement containing the terms and conditions of my service with my Electric Generation Supplier, **[Name of Electric Generation Supplier]**. I understand and agree to those terms, agree to be a Participating Customer in the Pilot, and agree to the terms and conditions of the Pilot. I understand that under the Pilot, I will receive from PECO Energy, and pay for Electric Delivery Service (as defined in the Pilot), and that my electric energy requirements will be supplied by **[Name of Electric Generation Supplier]** under my contract with **[Name of Electric Generation Supplier]**.

Customer Name
(please print): _____ Service Address: _____

_____

Customer Signature:_____ Date: _____

PECO Energy Account Number: _____

FOR RESIDENTIAL (RATE R AND R-H) CUSTOMERS ONLY:

Do you have Central Air Conditioning? Yes_____ No_____

Do you have an Electric Heat Pump
or Electric Base Board Heating? Yes_____ No _____

FOR ALL OTHER CUSTOMERS:

Please state the Standard Industrial Classification Code for your facility: _____

[*This Customer Consent Form will be forwarded by the Electric Generation Supplier to PECO Energy. If you have questions, please call 1-800-TAP-PECO*]

This message is very important. If you do not understand, please call the telephone number that shows on this document.

Este es un mensaje muy importante, Si usted no lo entiende, favor de llamar al número de teléfono que aparace en este documento.

Appendix G

Electric Generation Supplier Agreement Form

This agreement (this "Agreement") is made this ____ day of _____, 199_, by and between **[Name of Electric Generation Supplier]** and PECO Energy Company ("PECO Energy"), a Pennsylvania corporation and public utility with offices located at 2301 Market Street, Philadelphia, Pennsylvania 19103 (collectively referred to as the "Parties").

WHEREAS:

A. PECO Energy is currently an electric utility with exclusive franchise rights to serve retail customers in a geographic region that includes all or portions of Bucks, Chester, Delaware, Montgomery, Philadelphia, and York Counties in Pennsylvania, in accordance with the Pennsylvania Public Utility Code, and is and will be the local electric distribution utility for the same service territory upon commencement of "Direct Access" in accordance with The Electric Generation Competition and Customer Choice Act.

B. The Electric Generation Competition and Customer Choice Act requires PECO Energy to conduct a pilot program for retail competition, and PECO Energy has proposed and had approved such a plan ("the Pilot"). A copy of the Pilot is attached hereto as Exhibit "A."

C. **[Name of Electric Generation Supplier]** has been licensed as an Electric Generation Supplier that may sell electric energy to Participating Customers in the Pilot, and **[Name of Electric Generation Supplier]** has or will have entered into contracts for electric energy supply with some of those Participating Customers.

NOW THEREFORE, in consideration of these premises and the facts and mutual promises set forth herein, and intending to be legally bound hereby, PECO Energy and **[Name of Electric Generation Supplier]** hereby agree as follows:

1. PECO Energy will provide Electric Delivery Service to Participating Customers served by **[Name of Electric Generation Supplier].**

2. PECO Energy will provide all of the services for Electric Generation Suppliers contained in the Pilot, in accordance with the terms and conditions of the Pilot, for **[Name of Electric Generation Supplier]**.

3. **[Name of Electric Generation Supplier]** hereby agrees to comply with all of the terms and conditions of the Pilot, including, but not limited to, the terms and conditions set forth in the section of the Pilot entitled, "Electric Generation 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.

PECO Energy Company

Attest: By: _____

Name: Name:

Title: Title:

[Name of Electric Generation Supplier]

Attest: By: _____

Name: Name:

Title: Title:

EXHIBIT B

Service Agreement For Network Integration Transmission Service

1. This Service Agreement, dated as of _____, is entered into by and between PECO Energy Company ("PECO") and PECO Energy Company acting as Designated Agent for [names of Participating Customers in PECO's Retail Access Pilot Program (the "Pilot")] ("Transmission Customer").

2. Transmission Customer has a Valid Request for Network Integration Transmission Service under PECO's Open Access Transmission Tariff ("Tariff").

3. Service under this Service Agreement shall commence on the later of: (1) [date *energy deliveries begin under the Pilot, scheduled to be between the October* 1997 and January 1998 billing months, to be inserted], (2) the date on which construction of any Direct Assignment Facilities and/or Network Upgrades are completed, or (3) such other date as the Commission permits to become effective. Service under this Service Agreement shall terminate on December 31, 1998.

4. PECO agrees to provide and Transmission Customer agrees to take and pay for Network Integration Service in accordance with the provisions of the Tariff and this Service Agreement, as may be amended from time to time. Because a significant portion of Transmission Customer's residential and small commercial customers lack installed demand metering, and to satisfy the Pennsylvania Public Utility Commission's ("PaPUC") directive to ensure that charges for retail transmission service "maintain consistency with the allocation methodology for utility production plant accepted by the [PaPUC] in [PECO's] most recent base case proceeding," Transmission Customer shall charge the Participating Customers in the Pilot the applicable rates set forth in Appendices 1-8 to this Service Agreement for retail transmission service. Pursuant to the rates in Appendices 1-8, revenues received by Transmission Customer for retail transmission service provided to the Participating Customers in the Pilot shall not exceed the total charges paid to PECO by Transmission Customer for transmission service under this Service Agreement.

5. Any notice or request made to or by either party regarding this Service Agreement shall be made to the representative of the other party as indicated below.

PECO:
Director, Transmission Management
PECO Energy Company, S10-1
2301 Market Street
Philadelphia, PA 19103

Transmission Customer:

_____

_____

6. The Tariff, specification for Network Integration Transmission Service, and Network Operating Agreement are incorporated herein and made a part hereof.

IN WITNESS WHEREOF, the parties have caused this Service Agreement to be executed by their respective authorized officials.

PECO Energy Company

By: _____ Title: _____ Date: _____
Name

Transmission Customer

By: _____ Title: _____ Date: _____
Name

SPECIFICATIONS FOR NETWORK INTEGRATION TRANSMISSION SERVICE

1. Term of Network Service: [12 to 15 months, depending on when energy deliveries begin under the Pilot.]

   Start Date: [The date energy deliveries begin under the Pilot, scheduled to be between the October 1997 and January 1998 billing months.]

   Termination Date: December 31, 1997

2. Description of capacity and/or energy to be transmitted by PECO (including electric control area in which the transaction originates)

   [Description to be inserted when the Electric Generation Suppliers and Participating Customers that will supply and receive power under the Pilot are determined. Description required will be the same as that required from other applicants for Network Integration Transmission Service.]

3. Network Resources

   [Description of the Electric Generation Suppliers' generation facilities and firm purchase contracts that will be used to supply power to Participating Customers. Description required will be the same as that required for other applicants of Network Service. Information regarding Network Resources to include (i) all information required under Section 29.2 of PECO's FERC Electric Tariff Original Volume No. 5, (ii) for purchased power commitments, any information necessary for PECO to model how the purchased power commitment would be dispatched to meet Network Load, (iii) Transmission Customer's forecast of the following year's planned Network Resource availability for all resources not dispatched by PECO, made available as soon as reasonably practicable after commencement of service, and (iv) any other data reasonably necessary for PECO to plan for and provide Network Service.]

4. Network Load

   [Description to be inserted when the Participating Customers in the Pilot are determined. Description required will be the same as that required of other applicants for Network Service to serve retail loads. Information regarding Network Load to include all information required under Section 29.2 of PECO's FERC Electric Tariff Original Volume No. 5]

5. Designation of Party subject to reciprocal service obligation: Not applicable. To PECO's knowledge, none of its current retail customers, or as applicable, their corporate affiliates, own, control, or operate interstate transmission facilities.

6. Service under this Agreement may be subject to some combination of the charges detailed below. The appropriate charges for individual transactions will be determined in accordance with the terms and conditions of the Tariff.

6.1 Load Ration Share of Annual Transmission Revenue Requirement: Load Ratio Share of $154,469,000

6.2 Facilities Study Charge: Not applicable, under the assumption that no new facilities will be required because the Participating Customers are current customers of PECO and thus are entitled to retain their transmission capacity.

6.3 Direct Assignment Facilities Charge: Not applicable, under the assumption that no Direct Assignment Facilities will be required because the Participating Customers are current customers of PECO and thus no additional facilities will be required to serve them.

6.4 Ancillary Services Charge: [Applicable charges to be determined when the Service Agreement is entered into.]

Redispatch Charges: Redispatch Procedures may be implemented by PECO in accordance with Appendix 9

[NETWORK OPERATING AGREEMENT]

[TO BE ATTACHED AS EXHIBIT TO SERVICE AGREEMENT. THE NOA CONTAINS STANDARD CONTRACT LANGUAGE AND IS PART OF THE OPEN ACCESS TARIFF ON FILE WITH FERC.]

APPENDIX 1 TO SERVICE AGREEMENT

RETAIL TRANSMISSION RATE R

Eligibility

Electric Delivery Service under Rate R is available to Participating Customers for service to private family dwellings and appurtenances or multiple dwelling unit building consisting of two to five dwelling units (whether or not occupied), for the domestic requirements of said Participating Customers, when service is supplied through one meter. Service also is available for related farm purposes when such service is supplied through one meter in conjunction with the farmhouse domestic requirements. Participating Customers must satisfy all requirements for obtaining service under PECO's Retail Electric Service Tariff Rate R.

Monthly Rate

Transmission Customer will charge the following each billing month for retail transmission service to Participating Customers that qualify for service under this Appendix 1, and will apply to the bill for all such services the State Tax Adjustment Clause contained in PECO's current tariff for electric service (Tariff Electric - PA P.U.C. NO. 2):

0.6319 cents per kWh

APPENDIX 2 TO SERVICE AGREEMENT

RETAIL TRANSMISSION RATE RH

Eligibility

Electric Delivery Service under Rate RH is available to Participating Customers for service to private family dwellings and appurtenances or multiple dwelling unit building consisting of two to five dwelling units (whether or not occupied), for the domestic requirements of said Participating Customers, when service is supplied through one meter and when the dwelling is heated by types of electric space heating systems specified in PECO's Retail Electric Service Tariff. Participating Customers must satisfy all requirements for obtaining service under PECO's Retail Electric Service Tariff Rate RH.

Monthly Rate

Transmission Customer will charge the following each billing month for retail transmission service to Participating Customers that qualify for service under this Appendix 2, and will apply to the bill for all such services the State Tax Adjustment Clause contained in PECO's current tariff for electric service (Tariff Electric - PA P.U.C. NO. 2):

0.3579 cents per kWh

APPENDIX 3 TO SERVICE AGREEMENT

RETAIL TRANSMISSION RATE GS

Eligibility

Electric Delivery Service under Rate GS is available to Participating Customers that take service through a single metering installation for offices, professional, commercial or industrial establishments, governmental agencies, and other applications outside the scope of the Residence Service rate schedules. Participating Customers must satisfy all requirements for obtaining service under PECO's Retail Electric Service Tariff Rate GS.

Monthly Rate

Transmission Customer will charge the following each billing month for retail transmission service to Participating Customers that qualify for service under this Appendix 3, and will apply to the bill for all such services the State Tax Adjustment Clause contained in PECO's current tariff for electric service (Tariff Electric - PA P.U.C. NO. 2):

0.6282 cents per kWh

APPENDIX 4 TO SERVICE AGREEMENT

RETAIL TRANSMISSION RATE PD

Eligibility

Electric Delivery Service under Rate PD is available to Participating Customers that take transformed electric service from the primary supply lines of PECO's distribution system where the Customer installs, owns and maintains any transforming, switching and other receiving equipment required. Participating Customers must satisfy all requirements for obtaining service under PECO's Retail Electric Service Tariff Rate PD.

Monthly Rate

Transmission Customer will charge the following each billing month for retail transmission service to Participating Customers that qualify for service under this Appendix 4, and will apply to the bill for all such services the State Tax Adjustment Clause contained in PECO's current tariff for electric service (Tariff Electric - PA P.U.C. NO. 2):

$1.836 per kW

APPENDIX 5 TO SERVICE AGREEMENT

RETAIL TRANSMISSION RATE HT

Eligibility

Electric Delivery Service under Rate HT is available to Participating Customers that take transformed electric service from PECO's standard high-tension lines, where the participating customer installs, owns and maintains any transforming, switching and other receiving required. Participating Customers must satisfy all requirements for obtaining service under PECO's Retail Electric Service Tariff Rate HT.

Monthly Rate

Transmission Customer will charge the following each billing month for retail transmission service to Participating Customers that qualify for service under this Appendix 5, and will apply to the bill for all such services the State Tax Adjustment Clause contained in PECO's current tariff for electric service (Tariff Electric - PA P.U.C. NO. 2):

$2.322 per kW

APPENDIX 6 TO SERVICE AGREEMENT

RETAIL TRANSMISSION RATE EP

Eligibility

Electric Delivery Service under Rate EP is available to two potential Participating Customers -- National Rail Passenger Compensation (AMTRAK) and the Southeastern Pennsylvania Transportation Authority (SEPTA) -- for untransformed electric service from PECO's standard high-tension lines where PECO installs, owns and maintains any transforming, switching and other receiving equipment that is required and where the service is supplied for the operation of electrified transit and railroad systems and appurtenances. Participating Customers must satisfy all requirements for obtaining service under PECO's Retail Electric Service Tariff Rate EP.

Monthly Rate

Transmission Customer will charge the following each billing month for retail transmission service to Participating Customers that qualify for service under this Appendix 6, and will apply to the bill for all such services the State Tax Adjustment Clause contained in PECO's current tariff for electric service (Tariff Electric - PA P.U.C. NO. 2):

$1.43 per kW

APPENDIX 7 TO SERVICE AGREEMENT

RETAIL TRANSMISSION RATE SL-E[1]

Eligibility

Electric Delivery Service under Rate SL-E is available to Participating Customers that are governmental agencies outside the City of Philadelphia for outdoor lighting of streets, highways, bridges, parks or similar places under the conditions specified in PECO's Retail Electric Service Tariff. Participating Customers must satisfy all requirements for obtaining service under PECO's Retail Electric Service Tariff Rate SL-E.

Monthly Rate

Transmission Customer will charge the following each billing month for retail transmission service to Participating Customers that qualify for service under this Appendix 7, and will apply to the bill for all such services the State Tax Adjustment Clause contained in PECO's current tariff for electric service (Tariff Electric - PA P.U.C. NO. 2):

0.160 cents per kWh

[1] This rate has been calculated by taking the total cost of providing bundled retail service for Rate SL-E accounts less the costs of supplying energy and capacity. As such, this rate still reflects bundled transmission, distribution and customer charges. When PECO makes its restructuring filing with the Pennsylvania Public Utility Commission in conformity with the Electric Generation Customer Choice and Competition Act, PECO will develop a separate retail transmission rate for Rate SL-E accounts.

APPENDIX 8 TO SERVICE AGREEMENT

RETAIL TRANSMISSION RATE SL-S[2]

Eligibility

Electric Delivery Service under Rate SL-S is available to Participating Customers for outdoor lighting of streets, highways, bridges, parks and similar places for the safety and convenience of the public in Suburban Divisions, as such term is defined in PECO's Retail Electric Service Tariff Rate SL-S. Participating Customers must satisfy all requirements for obtaining service under PECO's Retail Electric Service Tariff Rate SL-S.

Monthly Rate

Transmission Customer will charge the following each billing month for retail transmission service to Participating Customers that qualify for service under this Appendix 8, and will apply to the bill for all such services the State Tax Adjustment Clause contained in PECO's current tariff for electric service (Tariff Electric - PA P.U.C. NO. 2):

Lamp Type/Lumens	Fixed Monthly Charge
Incandescent	
320 Lumens	$8.07
600 Lumens	$11.16
1000 Lumens	$15.51
2500 Lumens	$20.95
6000 Lumens	$22.48
10000 Lumens	$25.90
Mercury Vapor	
4000 Lumens	$18.30
8000 Lumens	$18.87
12000 Lumens	$19.65
20000 Lumens	$22.39
42000 Lumens	$30.86
59000 Lumens	$33.31

[2] This rate has been calculated by taking the total cost of providing bundled retail service for Rate SL-S accounts less the costs of supplying energy and capacity. As such, this rate still reflects bundled transmission, distribution and customer charges. When PECO makes its restructuring filing with the Pennsylvania Public Utility Commission in conformity with the Electric Generation Customer Choice and Competition Act, PECO will develop a separate retail transmission rate for Rate SL-S accounts.

Sodium Vapor

5800 Lumens	$18.29	
9500 Lumens	$19.70	
16000 Lumens	$21.83	
25000 Lumens	$24.30	
50000 Lumens		$28.30

APPENDIX 9 TO SERVICE AGREEMENT

REDISPATCH PROCEDURES AND COSTS

I. Purpose

Redispatch Procedures may be implemented by PECO when a transmission constraint exists on the Transmission System, and such constraint may impair the reliability of the Transmission System or adversely affect the economic operations of PECO or the Transmission Customer as Designated Agent for Participating Customers or the ability to meet firm transmission requirements under the Tariff. This procedure is not for the purpose of sustaining non-firm service, which is curtailable.

II. Obligations

PECO shall redispatch its own generation resources and the Transmission Customer as Designated Agent's Network and other resources to accomplish the stated purpose. As a condition precedent to receiving Network Integration Transmission Service, Transmission Customer as Designated Agent agrees to redispatch its Network and other resources as requested by PECO. PECO will similarly be obligated to redispatch its own Network Resources and other resources. To the extent practical, the redispatch of all resources shall be on a least cost, non-discriminatory basis as between all Network Integration Service Transmission Customers and PECO.

III. Redispatch for Operating Constraints

A. Determination of Redispatch Costs

When PECO determines that a transmission constraint exists, it shall reduce non-firm transactions in the priority order specified in the Tariff. PECO will schedule for redispatch, in a least cost manner, its own and all Network Integration Transmission Service Customers' Network and other resources, including purchases, to relieve the constraint. In those instances where the need for redispatch has been anticipated sufficiently in advance of the first hour of required redispatch, the procedure will be implemented in advance to be effective beginning in the first hour. When the need for redispatch has not been anticipated by at least one hour, then for the balance of the first hour in which redispatch is implemented, PECO will redispatch its own generation as needed to relieve the constraint. In this instance, the redispatch procedure will be implemented, effective beginning the second hour. The procedure to be implemented is as follows:

(1) Determine the Network and other resources that will most effectively relieve the transmission constraint.

(2) PECO, in coordination with the Transmission Customer whose Network and other resources may be dispatched, shall determine the incremental cost of each redispatch option that may relieve the transmission constraint. Redispatch shall then be implemented in the nominally least cost manner.

(3) Redispatch shall continue until no longer necessary to relieve the transmission constraint.

(4) PECO and the Transmission Customer shall calculate their respective redispatch costs consistent with Federal Energy Regulatory Commission policy for the appropriate period.

B. Redispatch Charge

PECO shall pay Transmission Customer, as Designated Agent for Participating Customers, its redispatch cost within 10 working days of receipt of the cost. **[Transmission Customer shall refund all such payments to Participating Customers.]** PECO shall total the previous month's redispatch costs, determine PECO's Load Ratio Share of the costs, and submit a bill to the Transmission Customer as Agent for Participating Customers within 10 working days of receipt of the costs. The Transmission Customer shall pay the Transmission Provider the identified costs within 10 working days of receipt of the bill. **[Transmission Provider shall be entitled to recover Redispatch Charges from the Participating Customers.]**

Exhibit "C"

PECO ENERGY COMPANY REQUESTS PaPUC APPROVAL OF ITS RETAIL ACCESS PILOT PROGRAM

Governor Ridge recently signed into law the "Electricity Generation Customer Choice and Competition Act," which will allow some customers to choose their electric generation supplier by 1999 and all customers by 2001. As a first step toward developing a competitive electric generation market and customer choice, PECO Energy has submitted a proposal to the Pennsylvania Public Utility Commission (PaPUC) to conduct a retail access pilot (Docket No. P-00971170) in its service territory.

The purpose of the pilot is to permit customers, PECO Energy, Electric Generation Suppliers, and the PaPUC to gain some familiarity with the operation of a competitive energy market before choice in electric generation suppliers is provided to all customers.

The pilot will begin after it is approved by the Commission and run until 1/1/99, at which time a phase-in to full customer choice will begin. If approved as proposed, at least five percent of the peak load of each of PECO Energy's major customer classes (residential, commercial, industrial, and street lighting) will be able to choose their electricity supplier during the pilot. The customers will be randomly selected. In addition, PECO Energy has proposed to include all residential customers located in one township or borough in the suburbs and one political subdivision in the City of Philadelphia. The township or borough and subdivision will also be randomly selected. Finally, many commercial and industrial customers located in state created Enterprise Zones will be eligible.

Pilot customers will continue to buy transmission and distribution services from PECO Energy but will have the choice of buying their electricity from a supplier other than PECO Energy.

Copies of the pilot proposal may be examined at PECO Energy's Main Office located at 2301 Market Street, Philadelphia, PA, on PECO Energy's Home Page at www.libertynet.org/peco, the main branch of any local library located within PECO Energy's service territory, or the State Library of Pennsylvania located in Harrisburg. For more information contact PECO Energy at 1-800-494-4000.

You are encouraged to file any comments you may have on the pilot proposal with the PaPUC within 30 days of the date of publication of this notice. Comments must reference Docket No. P-00971170 and must identify the specific issues that the filer wishes to raise. The filer must identify any specific material question of fact which is being contested. In addition, all arguments or discussions in support of the filer's position must be included in order to be considered by the Commission. Ten copies of the comments should be mailed to PaPUC, Office of the Prothonotary, P. O. Box 3265, Harrisburg, PA 17105-3265.

PECO Energy Company

Exhibit GAC-2

PROPOSED CODE OF CONDUCT

1. PECO, in its role as the Local Distribution Utility ("LDU"), shall not give a competitive generation affiliate or marketing group or division ("PECO Supplier") preference over a non-affiliate in processing a request by a customer for service.

2. PECO shall supply services and apply the rules and other provisions of its Tariffs to non-affiliates in the same manner it applies them to a PECO Supplier.

3. PECO shall not sell non-power goods or services to a PECO Supplier at a price below the cost or market price, whichever is higher, for said goods or services. PECO will not purchase non-power goods or services from a PECO Supplier at a price above the market price for said goods or services.

4. PECO shall simultaneously make available to all Suppliers any market information, not in the public domain, that it provides to a PECO Supplier.

5. Employees of PECO who have responsibility for operating the distribution system, such as receiving requests for power, purchasing power, scheduling delivery, or billing and metering, shall not be shared with a PECO Supplier, and their offices shall be physically separated from the office(s) used by those working for the PECO Supplier. Any shared facilities shall be fully and transparently allocated between the LDU function and the PECO Supplier function. PECO accounts and records shall be maintained such that the costs a PECO Supplier incurs may be clearly identified.

6. PECO shall not condition the provision of any distribution services on the purchase of power from a PECO Supplier.

7. PECO shall not allow a PECO Supplier to utilize PECO's name in a manner such that customers can reasonably imply from that use:

   - that the distribution services provided by PECO are of a superior quality when power is purchased from a PECO Supplier; or
   - that the merchant services (for power) are being provided by PECO as the LDU rather than a PECO Supplier; or
   - that the power purchased from an Supplier that is not a PECO Supplier may not be reliably delivered.

8. PECO shall establish and file with the Commission a dispute resolution procedure to address complaints alleging violations of these rules.

Exhibit GAC-3

PECO Energy Company
Development of Jurisdictional Capacity
(MW)

Year	Installed Capacity		Peak Demand	Interruptible	Net Peak	Req @18% Reserve
1997	9164		7074	204	6870	8107
1998	9214	(a)	7183	204	6979	8235
1999	9214		7277	148	7129	8412
2000	8597	(a)	7354	148	7206	8503
2001	8597		7458	148	7310	8626
2002	8597		7536	148	7388	8718
2003	8597		7615	148	7467	8811
2004	8597		7694	148	7546	8904
2005	8453	(a)	7775	148	7627	9000
2006	8453	(a)	7856	148	7708	9095
Average (1999 - 2006)	8638		7571	148	7423	8759

Jurisdictional = Avg Required / Avg Installed = 100.00%

Note: Data is taken from PECO Energy Company's 1996 Annual Resource Planning Report

(a) The following are the capacity changes
- In 1998 - *add 50MW for a Limerick rotor*
- In 1998 - deduct 56 MW from interruptible load based upon known changes
- In 2000 - deduct 166 MW for Schuylkill (based upon economics)
- In 2000 - deduct 201 MW for Cromby 2 (based upon economics)
- In 2000 - deduct 250 MW for Delaware (based upon economics)
- In 2005 - deduct 144 MW for Cromby 1 (based upon economics)

Exhibit GAC-4

PENNSYLVANIA PUBLIC UTILITY COMMISSION
COMMONWEALTH OF PENNSYLVANIA
HARRISBURG, PENNSYLVANIA

March 14, 1997

Corbin A. McNeill, Jr.
President & CEO
PECO Energy Company
2301 Market Street
Philadelphia, PA 19101

Dear Mr. McNeill:

We are writing to underline to you our interest in and concern about the negotiations to create an Independent System Operator in the PJM power pool. Our interest and concern are rooted in the duties that Pennsylvania's Electricity Generation Customer Choice and Competition Act ("Act") imposes on both the electric industry and the Pennsylvania Public Utility Commission.

The Act directs this Commission to ensure reliability and open access. For example, Section 2802(12) in part says: "Electric Industry restructuring should ensure the reliability of the interconnected electric system by maintaining the efficiency of the transmission distribution system." Similarly, Section 2804(c) commands that: "the Commission shall ensure continuation of safe and reliable electric service to all consumers in the Commonwealth."

The Legislature also recognized that Independent System Operators were a means to ensuring reliability. Section 2802(19) encouraged the creation of ISOs or their functional equivalent. Indeed, the Legislature declared that it was the responsibility of ISOs or their functional equivalents and this Commission to preserve reliability. At Section 2802(20), the Act states: "since continuing and ensuring the reliability of electric service depends on adequate generation and on conscientious inspection and maintenance of transmission and distribution systems, the independent system operator or its functional equivalent should set through regulations, inspection, maintenance, repair and replacement standards and enforce those standards."

It is important that the negotiations to create an ISO are successful if the objectives of the Act are to be met. We urge you to double your efforts to find solutions to present disagreements. We know that all of us can do more to meet the requirements of the Electricity Generation Customer Choice and Competition Act.

Sincerely,

John M. Quain, Chairman

John Hanger, Commissioner

David W. Rolka, Commissioner

Exhibit GAC-5

PECO Energy Company
Standards for System Safety and Reliability

REQUIREMENTS FOR PARALLEL OPERATION OF NON-UTILITY GENERATION

January 1996

IMPORTANT NOTICE

A PROSPECTIVE NON-UTILITY GENERATOR (NUG) CONSIDERING PARALLEL OPERATION WITH PECO ENERGY COMPANY (PECO) MUST SUBMIT DESIGN DATA AND DRAWINGS TO THEIR PECO ACCOUNT MANAGER OR ENERGY CONSULTANT BEFORE THE PROSPECTIVE NUG MAKES ANY COMMITMENTS. ALL CORRESPONDENCE AND COMMUNICATION RELATED TO THE NUG'S INTERCONNECTION MUST ALSO BE FORWARDED TO THIS PECO REPRESENTATIVE. THE INFORMATION MUST BE REVIEWED AND ACCEPTED BY PECO BEFORE INSTALLATION BEGINS.

WRITTEN AUTHORIZATION FROM PECO AND ELECTRIC SERVICE UNDER THE AUXILIARY SERVICE RIDER ARE REQUIRED BEFORE THE INITIAL OR CONTINUED OPERATION OF A NUG IN PARALLEL WITH THE PECO SYSTEM. IF A NUG FAILS TO COMPLY WITH THESE REQUIREMENTS, PECO SHALL TAKE APPROPRIATE ACTIONS TO ENSURE THE SAFETY OF THE PUBLIC, THE PECO SYSTEM, AND OTHER PECO CUSTOMERS.

THE NUG SHALL BEAR ALL COSTS INCURRED BY PECO FOR THE NUG INCLUDING BUT NOT LIMITED TO ENGINEERING REVIEW, RELAY TESTING, INTERCONNECTION EQUIPMENT INSPECTION, AND CONSTRUCTION OF FACILITIES. ACTUAL COSTS FOR A NUG ARE SITE SPECIFIC AND WILL BE DETERMINED BY PECO BASED ON THE WRITTEN INFORMATION SUPPLIED TO PECO BY THE NUG.

CAUTION

A CUSTOMER GENERATOR OPERATING IN PARALLEL WITH PECO WILL AFFECT THE QUALITY OF ELECTRIC SERVICE TO THE CUSTOMER AND OTHER CUSTOMERS. PECO MAY REQUIRE CORRECTIVE MEASURES OF THE NUG BEYOND THE SCOPE OF THIS MANUAL WHEN OTHER CUSTOMERS ARE ADVERSELY AFFECTED. PROBLEMS WHICH MAY OCCUR INCLUDE, BUT ARE NOT LIMITED TO, SPURIOUS TRIPPING OF GENERATOR OR SERVICE BREAKERS, OVER-STRESSING OF EQUIPMENT, OR AN INABILITY BY THE CUSTOMER OR PECO TO MEET NATIONAL ELECTRICAL CODE REQUIREMENTS WITHOUT MAJOR ELECTRIC FACILITY MODIFICATIONS.

REQUIREMENTS FOR PARALLEL OPERATION OF NON-UTILITY GENERATION

1. INTRODUCTION. This Requirements for Parallel Operation of Non-Utility Generation is an addendum to the PECO Energy Company (PECO or the Company) Electric Service Requirements (ESR) manual. The ESR is referred to whenever service receiving and non-utility generation interface facilities have a common function.

   A non-utility generator (NUG) satisfying these requirements may operate in parallel with the Company. This includes an independent power producer (IPP), Exempt Wholesale Generator (EWG), or Qualifying Facility (QF) as defined in Section 2 below.

   These Requirements describe interface facilities the NUG must provide on its premises in order to operate in parallel with the Company. The primary function of the listed equipment is to preserve and promote the safety of the public and of employees of both PECO and the NUG, to protect property, and to preserve the quality of other customers' service.

2. DEFINITIONS.

   NON-UTILITY GENERATOR (NUG) is any generator interconnected with PECO's system not owned by PECO. NUG's include Cogenerators, Small Power Producers, Exempt Wholesale Generators, Independent Power Producers, and other generation facilities.

   QUALIFYING FACILITY (QF) is either a small power producer or cogenerator in accord with Federal and state regulations relating to Section 210 of the Public Utility Regulatory Policies Act of 1978 (16 USCA §824 a-3 et. seq., 18 CFR §393.101 et. seq., 52 Pa Code §57.31 et. seq.) as amended (PURPA). PECO will purchase energy from a QF; such purchases shall be governed by Pennsylvania regulations under separate contract.

   SMALL POWER PRODUCER (SPP) is a generator of electricity whose primary energy source is waste by-products, solar, water, wind, or other renewable energy sources, generally excluding fossil fuels. A low-head hydro plant is an example of an SPP.

   COGENERATOR is a generator of electricity whose status is defined by an output energy balance between process heat and electric generation. For example, a plant burning gas to generate electricity and using the waste heat to supply thermal energy is a Cogenerator. A plant burning gas to generate electricity, but exhausting the waste heat, is not a Cogenerator.

EXEMPT WHOLESALE GENERATOR (EWG) is a facility engaged exclusively in generating electricity for wholesale sale in accord with Federal regulations relating to Section 711 of the National Energy Policy Act of 1992, as amended.

INDEPENDENT POWER PRODUCER (IPP) is a non-utility generator which is not a qualifying facility or an exempt wholesale generator.

3. METERING OF SALES AND PURCHASES OF POWER. Service connections at 120, 240, or 480 volts, and all services over 600 volts with transformers operating independently from generation, must be metered for power supplied by PECO. The metering equipment shall be owned and maintained by PECO. The NUG is responsible for meter installations as described in Sections III and V of the ESR. Meter arrangements will vary depending upon the payment option chosen. However, in all cases PECO will provide the IN meters (sales to customer) at its expense, with additional costs for the OUT meters (sales to PECO) being charged to the NUG through a monthly charge.

4. INTERCONNECTION COSTS ON PUBLIC HIGHWAYS AND PECO PROPERTY. The Company will modify its distribution and transmission facilities as necessary to interconnect with the NUG at a single point. A NUG will be charged for all modifications, additions or retirements made to provide the interconnection.

The NUG may request an estimate of these costs from PECO's Major Accounts or Business Accounts Department by providing data on the installation, including size, location, prime mover, and energy source as defined in Section 15 hereof.

PECO will carefully consider short circuit current contributed by the NUG to the system. If this additional fault current adversely affects other customers, corrective measures, such as reactors or dedicated lines, will be taken at the NUG's expense.

5. NON-UTILITY GENERATOR INTERFACE EQUIPMENT. THE NUG'S DESIGN DATA DRAWINGS MUST BE REVIEWED AND ACCEPTED BY THE COMPANY BEFORE INSTALLATION IS STARTED OR ANY COMMITMENTS ARE MADE BY THE PROSPECTIVE NUG. The NUG shall design, provide and install all facilities on its property, except the In and Out revenue meters described in Section 3 above. All installations with generation rated 100 kVa or larger shall be in accord with Section V ("Services over 600 Volts") of the ESR. Where multiple generators are connected in parallel to the PECO system through a single connection

point, the rating of the NUG will be the sum of the ratings of the individual generators.

A NUG's control power source, which operates its protective devices, must be reliable and not interrupted during fault periods. For example, PECO considers storage batteries and capacitor trip devices reliable.

A NUG connected to the Company's secondary system (under 600 volts) shall perform tests and maintenance that PECO finds necessary to keep PECO' system in safe operating condition.

A NUG connected to the PECO system at 4 kV or higher must interconnect to the Company's facilities through a isolation transformer designed to match PECO's distribution or transmission system. A NUG must also supply sufficient ground fault current to stabilize phase to neutral voltages and disconnect the generator from Company lines during phase to ground faults on PECO's system. Protective devices required by PECO will be tested by PECO at NUG expense on a schedule determined by PECO. Transformer connections which do not cause transient overvoltages on the PECO system must be selected.

6. POINTS OF SERVICE. PECO will review all proposed NUG installations to determine any changes or modifications needed to the customer's existing service line(s) as a result of the generator's operation. Each NUG installation will be reviewed on a site specific basis and PECO will prepare an estimate of costs associated with any required service line changes. The NUG will reimburse PECO for all of the above related costs. Please note dual service customers often require modifications to their existing incoming services to accommodate a generator on their system. Customers installing generation may be required to purchase dedicated lines.

7. MONITORING OF NON-UTILITY GENERATORS. PECO's System Operation Department will determine the need for installing communications equipment, such as telemetering or telephone connections, at each NUG installation. This equipment will allow PECO to monitor the generator's operation and output, the position of breakers, and any other information needed to ensure the safety, reliability and stability of PECO's electrical system. Costs of design, installation, testing and inspection of the communications equipment shall be paid by the NUG. In general, all NUG's over 5 MVa shall require telemetering.

8. CODES. All NUGs must adhere to applicable Federal, state, and local codes, rules, and regulations. This includes, but is not limited to, the National Electrical Code, the National Electrical Safety Code, and the PECO ESR.

9. HARMONICS, FLICKER, AND VOLTAGE VARIATIONS. Harmonic distortion limits (as a percent of distortion of 60 Hz fundamental) for an individual NUG are as follows:

Service Voltage (Volts)	Total Distortion (%)	Single Frequency Distortion (%)
120-33,000	5.0	3.0
69,000-138,000	2.5	1.5
230,000-500,000	1.5	1.0

Voltage distortion contributed by a NUG may be further restricted so as not to raise the single frequency or total harmonic distortion levels above system limits at the point of delivery or any system point in resonance.

PECO will review the effects of current distortions on an individual basis. Where distortion limits are exceeded, the NUG will be required to make corrections, such as adding filters.

Flicker, voltage variations, and fluctuations must be controlled as described in Rule 13.2 of the Rules and Regulations of PECO's Electric Tariff.

Pennsylvania Public Utility Commission Electric Regulations, 52 Pa. Code §57.14, allow voltage variations from the Company's nominal service voltages. Where service is primarily for lighting, the allowable variation is plus or minus 5%, and where service is primarily for power, the allowable variation is plus or minus 10%. The NUG must design its equipment so as to operate satisfactorily within these voltage limits and not to subject other Company customers to voltage exceeding these limits. A NUG must provide voltage regulators or load-ratio control transformers, if needed.

10. FAULT PROTECTION IN NON-UTILITY GENERATOR'S INTERFACE EQUIPMENT. The NUG shall:

(a) protect PECO's electrical system from the NUG's internal phase or ground faults. Protective relay requirements depend on the size and type of generator and the NUG's transformer connections. (SEE APPENDIX I FOR GENERAL PROTECTION REQUIREMENTS. CONSULT PECO'S CONSULTANT SERVICES BRANCH FOR SPECIFIC RELAY DETAILS).

(b) protect its equipment from faults on the Company system, including phase and ground faults.

(c) protect its generator against ground faults, under frequency, over frequency, negative phase sequence (single phasing), overcurrent, motoring, and reclosing of Company circuits.

(d) design the coordination of its internal relays. The Company will design the coordination of interface relays with PECO's system relays, calibrate relays and trip test service breakers.

(e) separate its generator from the Company system whenever the Company's service line is deenergized.

11. OPERATION OF COMPANY LINE IN PARALLEL WITH GENERATOR. From time to time, PECO must remove its lines from service. These planned outages are for purposes such as testing relays, rearranging, modifying or constructing lines, and maintaining lines or station equipment. The NUG must cooperate with these planned outages.

Also, from time to time a NUG may not be allowed to operate in parallel with the PECO system or, in the case of a NUG with multiple services, only be allowed to operate in parallel with specific lines so that PECO can perform "Hotline Maintenance" on the facilities serving the NUG. The NUG must cooperate with these conditions and requests.

During planned outages, or if the NUG is not allowed to operate in parallel with a line while PECO performs "Hotline Maintenance," PECO may lockout the customer's generator to prevent its closing into the PECO line.

A NUG must notify PECO before bringing a generator on line. PECO may require the NUG to delay synchronizing when the Company is experiencing line trouble or system disturbances.

A NUG must not energize or continue to maintain supply to Company lines after PECO has deenergized its lines. The Company may discontinue parallel operation during emergencies and under abnormal operating conditions.

A NUG is responsible to evaluate the potential effect of the Company's reclosing practices on its generator and to provide suitable protection.

12. REACTIVE REQUIREMENT. When a NUG draws excessive vars from the Company (e.g. for synchronous inverters or induction generators), the NUG

shall correct its power factor to values according to the Company's Electric Tariff. A NUG may operate synchronous generators with lagging power factor exceeding these requirements. Freedom to operate synchronous generators outside of these requirements does not excuse the NUG from the limits to voltage variations required in Section 9 above.

13. MINIMUM GENERATION. During certain low-load periods, PECO may require a NUG to reduce its output so as not to exceed the internal needs of the NUG. A NUG must be capable of reducing its generation so as not to export any energy to PECO during such light load conditions.

14. VOLTAGES AVAILABLE FOR NON-UTILITY GENERATORS. Voltages available to NUG's are the same voltages available to customers listed in the Definitions section of the Rules and Regulations of PECO's Electric Tariff. Representative maximum sizes of generators which may be connected to existing Company transmission and distribution circuits are listed in the table below with corresponding minimum service voltages. In some cases, larger generators may be installed after formal review of the NUG's proposed interconnection by PECO. Larger generators will in most cases require the upgrade of PECO's circuit facilities, including requiring the NUG to pay for construction of a dedicated circuit for interconnection.

Generator Size (kVa)	Service Voltage * (Volts)
40	All PECO service voltages
100	All PECO 3-phase service voltages
500	4,160 (3-phase)**
3,500	13,200 (3-phase)
10,000	33,000 (3-phase)
40,000	69,000 (3-phase)
100,000	138,000 (3-phase)
100,000	239,000 (3-Phase)

* ALL VOLTAGES ARE NOT AVAILABLE IN ALL PARTS OF THE SYSTEM. A NUG SHOULD CONTACT PECO TO OBTAIN VOLTAGES AVAILABLE AT SPECIFIC SITES.

** LIMITED TO LOCATIONS NOW RECEIVING 4160 VOLT SERVICE.

Any connection to an existing PECO circuit must be compatible to existing and projected Company use of that circuit. Therefore, a NUG meeting the above voltage guidelines may not be allowed to connect to a given circuit if such interconnection is not compatible with future Company system arrangements. In that case the NUG will have to pay either the cost to connect to a higher voltage circuit or the cost for additional circuit facilities. If

additional circuit facilities are required for the NUG, larger generation installations may be possible for a specific service voltage.

15. APPLICATION FORM. All NUG's must apply in writing for permission to operate generators in parallel with the Company.

The NUG will pay for all costs associated with PECO's review of the application and single line diagrams. A deposit against PECO's costs must be submitted along with the application to begin the review process. The amount of the deposit to be paid by the NUG to PECO is as follows:

NUG Size	Deposit
Less than 100 kVa	$1,000
100 kVa to 5 MVa	$3,000
Greater than 5 MVa	$5,000

In addition, the NUG's application will include the following information:

(a) Name and address of NUG.

(b) Name, address and phone number of representative of NUG who is making application.

(c) Name, address and phone number of the designer of the installation.

(d) Name, address and phone number of person proposed to operate and maintain the NUG for operating and maintenance communications.

(e) A statement if the proposed NUG is a QF as defined in the FERC final rules for PURPA, 18 CFR §292.101, or if the NUG is registered as an EWG.

(f) Generator and interconnection information, prepared and submitted by a Professional Engineer, registered in the Commonwealth of Pennsylvania and competent in power system applications, including:

1) Prime mover: manufacturer, type, size, fuel.

2) Generator: manufacturer, type, kW, volts, phases, amps, power factor.

3) Generator short circuit contribution to Company system.

4) Single line diagram showing connections to PECO, generator and local load; protection of generator from under frequency, over frequency, motoring, loss of any one phase or all three phases from utility, phase or ground fault in the generator, phase or ground fault on a PECO line.

5) A statement whether the NUG will use all of its kWh output internally, use as much of its kWh output as it can internally and sell the excess kWh to PECO, or sell its entire kWh output to PECO. Load supplied only from the NUG, independent of the utility, is not to be included in this application.

The application for parallel operation should be sent to:

PECO Energy Company
Major Accounts Department
2301 Market Street (N1-8)
Philadelphia, PA 19101

A PECO Representative will reply to the applicant, offer an Agreement For Parallel Operation when everything is in order, submit an estimate of PECO charges, and provide technical comments based on a review of the application.

16. TYPICAL ONE LINE DIAGRAMS. The following diagrams are included herein as references:

(a) 120/240 volt single phase induction generator less than 40 kVa.

(b) NUG service over 600 volts, three phase, four wire with switch/fuse service equipment.

(c) NUG service over 600 volts, three phase, four wire with circuit breaker service equipment.

(d) NUG service over 600 volts, three phase, four wire with circuit breaker service equipment, utilizing separate purchase and sale metering locations.

(e) NUG service over 600 volts, three phase, three wire with circuit breaker service equipment.

17. GENERATOR MODELING DATA. Prior to starting installation, a NUG of 10,000 kVa or larger (single or multiple units at one location) shall submit generator stability data for modeling in PECO's stability and reliability

analysis. NUGs smaller than 10,000 kVa shall submit generator stability data if requested by PECO. Generator stability data shall be as described in Appendix III.

18. PARALLEL OPERATION WITH DUAL OR REGULAR/RESERVE CUSTOMERS.

(a) NUG's with dual service may be required to operate in a regular/reserve mode if the capacity of the generation exceeds the minimum demand of the bus.

(b) NUG's with dual service who must operate regular/reserve after installing parallel generation may create line capacity problems. All costs to provide additional capacity are the responsibility of the NUG.

(c) NUG's with lines from different sources may be unable to operate generation in parallel with both lines. The NUG is responsible for all costs to provide compatible sources.

19. TRANSMISSION SERVICE. PECO offers transmission service to NUG's that can satisfactorily interconnect with the PECO system and whose output can be safely and reliably transmitted to the intended recipient. Such service shall be rendered under the terms of PECO's transmission tariffs, FERC Volumes Nos. 2 and 3, which conform to the terms of pro-forma tariffs. PECO will not transmit power to retail customers. Additional information on transmission service can be obtained from PECO's Interconnection Arrangements Division.

20. EXCEPTIONS. NUG's on exclusive lines (lines serving only one customer because of load limitations) or on dedicated lines (lines purchased by a customer) may, at the discretion of the Company, be excused from some of the requirements of this manual. PECO's relaxation of any one requirement does not relieve the NUG's responsibility to meet all other requirements of this manual or to meet the requirements of the National Electrical Code, the National Electrical Safety Code and other codes that may apply. The NUG, by taking exception to a requirement, is responsible for all damages or injuries that may be associated with that exception.

21. NET ENERGY BILLING. A QF smaller than 50 kW may select net energy billing and will be billed on their appropriate retail rate schedule. Net energy billing has two options, whereby the QF may:

(a) Install a ratcheted meter that records energy sales to the QF. No monthly administration charge or meter charge shall apply, but no credit will be given to the QF for energy delivered to PECO.

(b) Install two meters – one records energy sales to the QF, and one records sales to PECO. Sales to PECO are subtracted from sales to the QF and a bill is rendered based on the net sales. In the event sales to PECO exceed sales to the QF, PECO will pay for the excess energy at PECO's "energy only" credit. A monthly meter charge based on the installed cost of the second meter and a monthly administrative charge shall apply.

TYPICAL ONE LINE DIAGRAM
NOTES

[2] ALL SYNCHRONOUS GENERATORS OVER 40 KVA AND INDUCTION GENERATORS OVER 1000 KVA MUST PRESENT A GROUNDED-WYE SOURCE TO PECO. PECO LINE NUETRALS MUST BE EXTENDED TO THE NUG AT HIS EXPENSE.

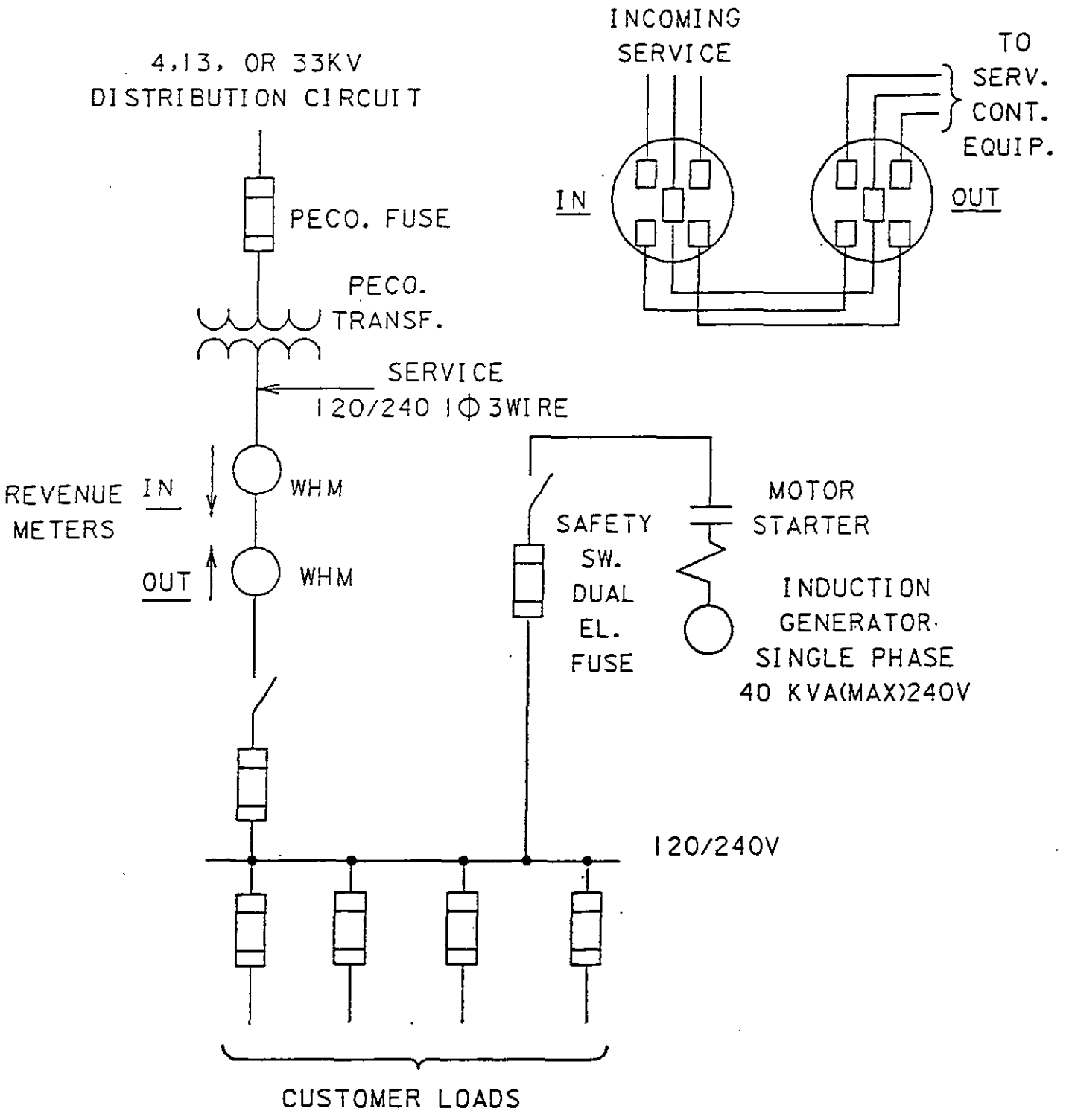
[3] THIS DIAGRAM DOES NOT APPLY TO GENERATORS CONNECTED TO LINES ORIGINATING FROM RESISTOR GROUNDED SOURCES. SEE DIAGRAM E.

[4] METERING MAY, AS DETERMINED BY PECO, BE CONNECTED TO THE LOW VOLTAGE SIDE OF THE TRANSFORMER, COMPENSATED TO REGISTER AT THE SERVICE VOLTAGE.

[5] RELAY REQUIREMENTS DEPEND ON SIZE AND TYPE OF GENERATION. CONSULT CUSTOMERS' ENGINEERING BRANCH FOR DETAILED REQUIREMENTS. VOLTAGE SENSING MAY BE ON THE LOW VOLTAGE SIDE OF THE TRANSFORMERS, FOR GENERATORS UNDER 250 KVA.

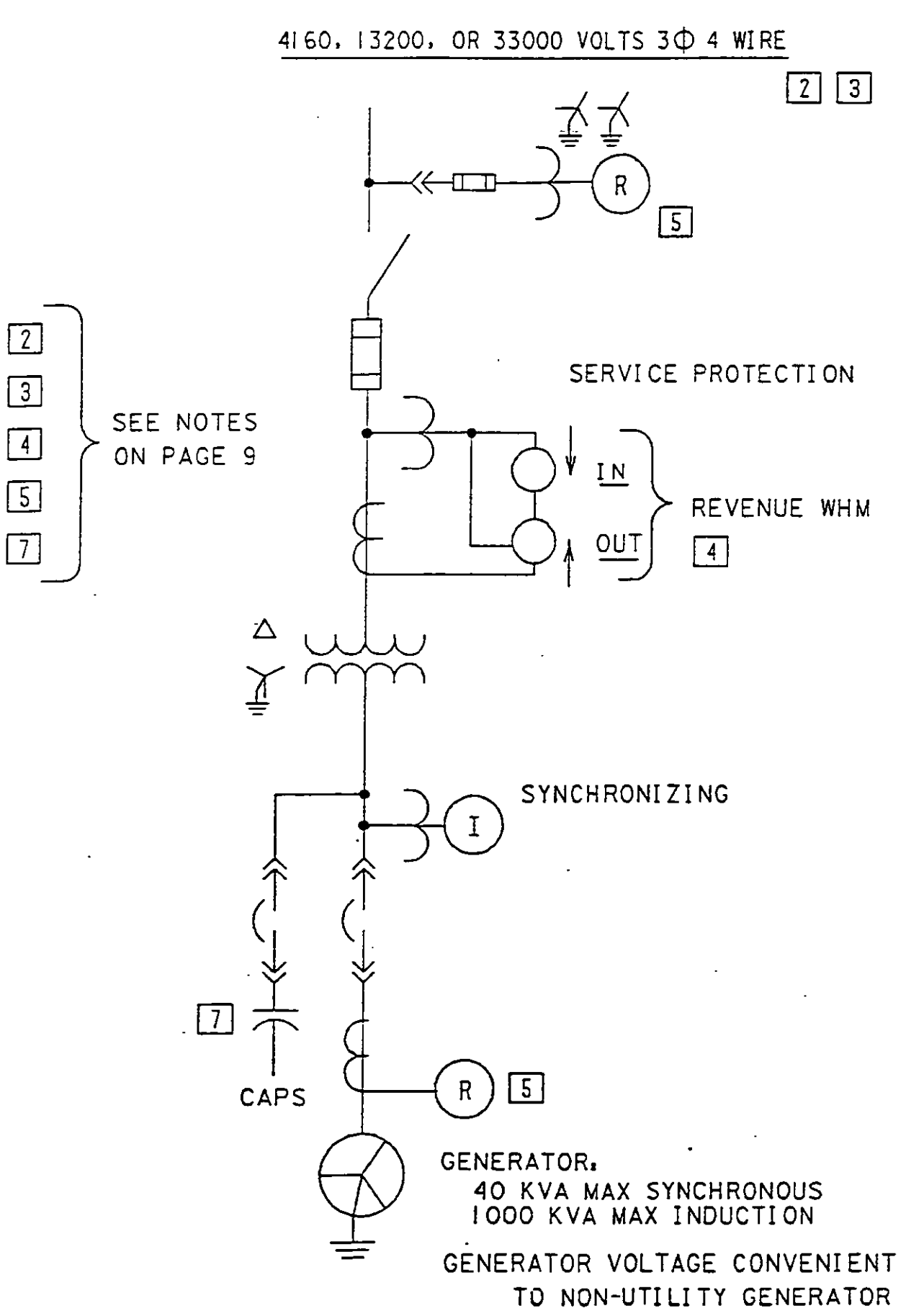
[6] PROVISIONS MUST BE MADE TO *SOLIDLY GROUND THE TRANSFORMER* NEUTRAL IF THE LINE IS CONVERTED TO 3Ø 4 WIRE.

[7] POWER FACTOR CORRECTION CAPACITORS FOR INDUCTION MACHINES MUST BE DISCONNECTED SIMULTANEOUSLY WITH THE GENERATOR.

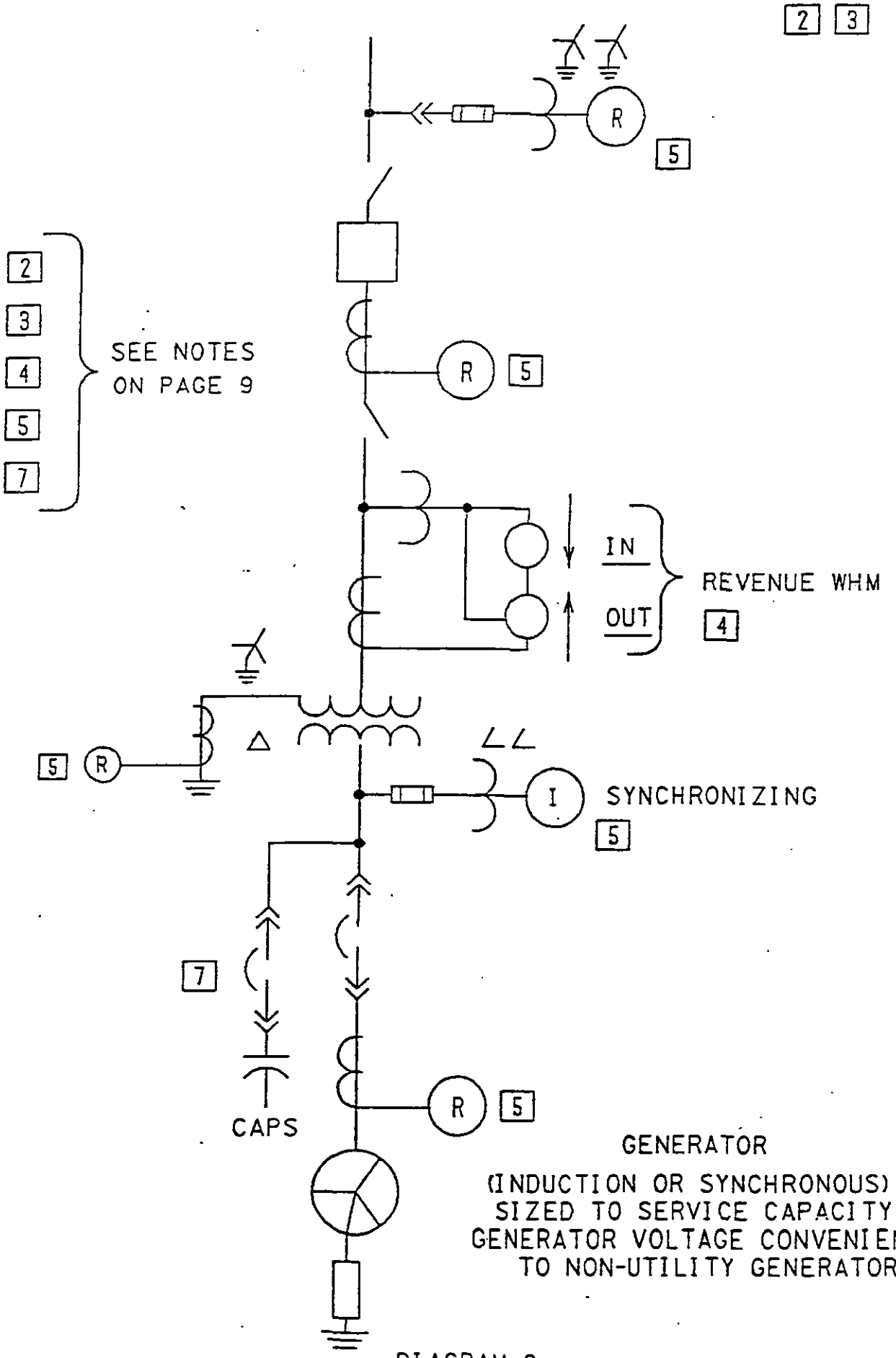


120/240V 1 Φ INDUCTION GENERATOR UP TO 40 KVA

TYPICAL SINGLE LINE DIAGRAM


4160, 13200, OR 33000 VOLTS 3Φ 4 WIRE
2
3
R
5
2
3
4
5
7
SEE NOTES
ON PAGE 9
SERVICE PROTECTION
IN
OUT
REVENUE WHM
4
SYNCHRONIZING
I
7
CAPS
R
5
GENERATOR:
40 KVA MAX SYNCHRONOUS
1000 KVA MAX INDUCTION
GENERATOR VOLTAGE CONVENIENT
TO NON-UTILITY GENERATOR

4160, 13200, OR 33000 VOLTS 3 Φ 4 WIRE



13,200 VOLTS 3Φ3 WIRE LINE FROM RESISTOR GROUNDED STATIONS

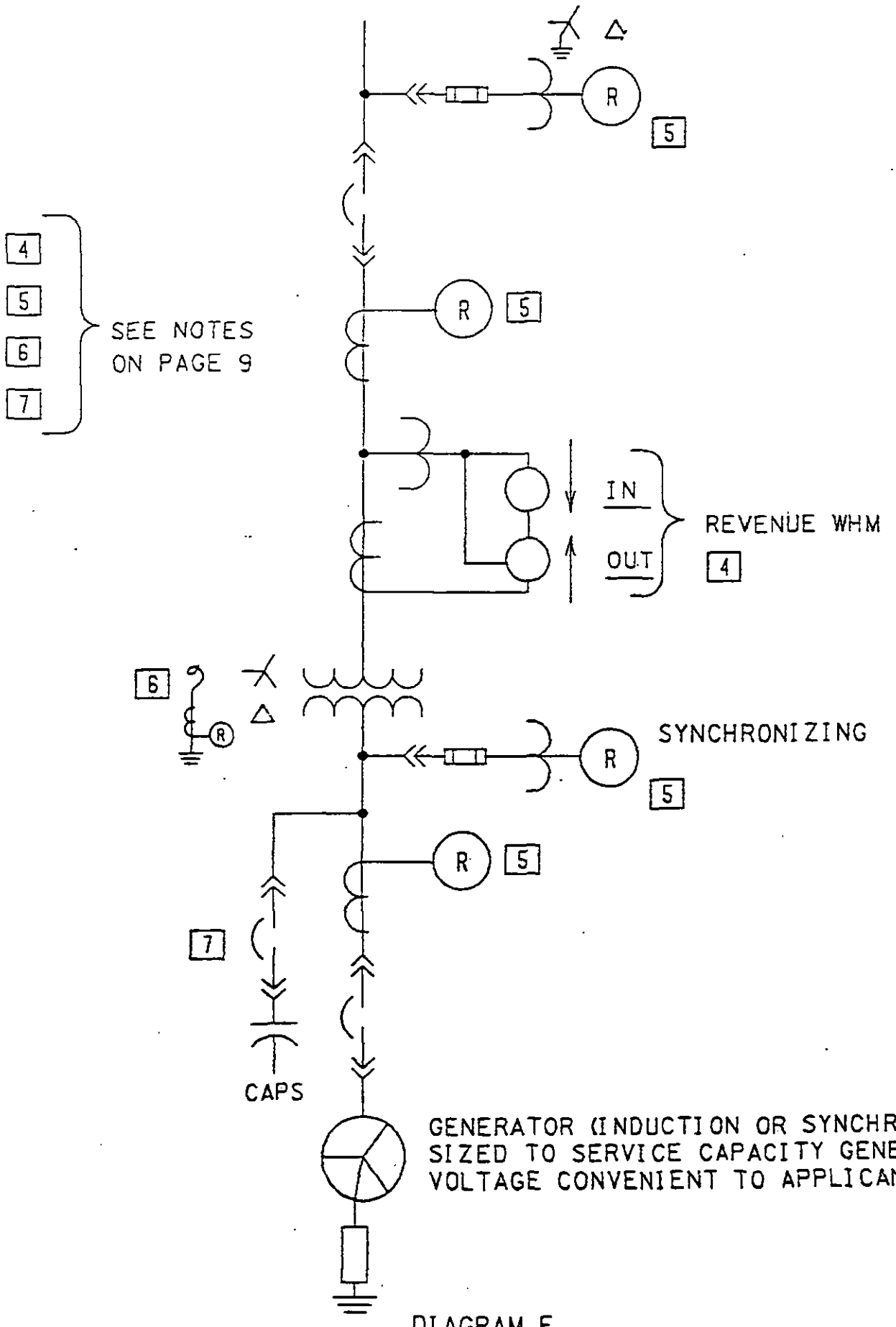


DIAGRAM E

9/90

[351.14]PECOTYP.SLD

APPENDIX I

GENERAL RELAY and OTHER PROTECTION REQUIREMENTS

for

PARALLEL OPERATION

of

NON-UTILITY GENERATION FACILITIES

PECO ENERGY COMPANY

d. Potential transformers, including voltage rating, type of connection, and rating.
e. Current transformers, including all tap ratios.
f. Power transformer MVA ratings and connections, including the neutral grounding arrangement.
g. Generator ratings and connections, including the neutral grounding arrangement.

3) The NUG must submit a schematic and connection diagram (AC and DC) listing relay types and model numbers, after the initial plans are accepted by PECO and before installation. These diagrams must contain the following:

a. Relay information including manufacturer, catalog and style numbers, and range of operation.
b. Complete power transformer specifications, including voltage rating, impedance values, and tap changer (both load and no load) ranges with the no load fixed tap position.
c. Complete generator specification including type (synchronous or induction), voltage rating, synchronous, transient, and subtransient reactance values, and zero sequence impedance.
d. Detailed AC/DC schematics showing relay connections and proper polarity marks on all relay related potential transformers and current transformers.

4) The NUG must obtain written acceptance of the facility from PECO prior to installation.

5) All relays noted are in addition to normal service entrance overcurrent protection and the protection required for the NUG's equipment.

6) Induction generators greater than 1,000 kVa, and synchronous generators greater than 40 kVa where 3-phase, 4-wire distribution load is present on the service supply line, require a grounded-wye transformer high side connection. The transformer low side must be Delta connected if the generator is not solidly grounded.

7) The required protection and list of recommended relay types is included in Section D. If the NUG desires another relay type, it should submit the relay to PECO for testing and acceptance. All relays must meet the following requirements:

a) Must use 120 V inputs.

b) Can be sealed.

c) Can accept the required settings with the tolerances specified.

d) Can be tested safely with standard relay test equipment.

8) Relay scheme must provide "Fail Safe" operation.

9) Single phase generators above 40 kVa are not permitted.

10) Certified test data for a NUG's generator(s) and interconnection transformer(s) shall be provided to PECO's Consultant Services Branch at least sixty (60) days prior to the desired interconnection date.

B. SYNCHRONOUS GENERATOR PROTECTION:

1) Required Protection Functions.

a) Generation 25 kVa and below:

(1) Over and Under Frequency Relays (81 o/u)

(2) Over and Under Voltage Relays (59 and 27)

b) Generation above 25 kVa

(1) Over and under Frequency Relays (81 o/u)

Synchronous generators larger than 1,000 kVa, connected to a PECO facility with no other distribution load, must have no relays or devices which will trip the generator(s) during PECO underfrequency excursions above 57.5 Hz. This requires the NUG's generator(s) to be capable of continued operation at frequencies at and above the 57.5 Hz setting.

(2) Over and Under Voltage Relays (59 and 27). Single phase voltage relays are acceptable for units rated below 250 kVa connected to PECO's 13 kV system and units rated below 1,000 kVa connected to the 33 kV system. Higher rated units require three phase voltage relays.

(3) Ground Overcurrent Relay (51G), if grounded-wye high side connection. Zero sequence overvoltage relay (59G) if Delta high side.

(4) *Voltage Controlled Overcurrent Relays (51V).* (Above 1,000 kVa to be installed on each generator).

2) Connections

If the generator is rated above 250 kVa, the over and under voltage relays must be connected to measure the line voltage (high side of the NUG's transformer).

The frequency relays can be located on the high or low voltage side of the NUG's transformer.

The interconnection relays must isolate the generator from the Company's line.

3) Momentary Parallel

A NUG may momentarily parallel with the PECO distribution system to provide disturbance free transfer of load to and from a generator for testing, peak shaving, load curtailment, or returning load to a PECO supplied service. Interconnection requirements will be determined by the length of time the generation is paralleled with the PECO distribution or transmission system.

a) Instantaneous Parallel [Less than 10 cycles (0.167 seconds)]. Additional NUG relaying in the following sections of this Appendix are generally not required, but may be specified, installed, and maintained at the discretion of the customer. The following conditions apply:

(1) The generator does not have to present a grounded-wye source to the PECO system.

(2) The parallel and disconnecting operation must be automatic, instantaneous (switching time only) and less than 10 cycles (0.167 seconds) duration.

(3) A paralleled transfer must be blocked if the normal PECO source to the load is not within +/- 10% of nominal voltage.

(4) The transfer scheme must be acceptable to PECO.

(5) The parallel operation must be monitored by a timing relay which will trip the generator's main breaker if the parallel lasts longer than 0.5 seconds. The tripping voltage must be from a reliable source, i.e. battery or capacitor trip.

(6) The NUG may transfer load to and from generators rated less than 600 volts without notice to PECO.

b) Transitional Parallel

(1) The generator does not have to present a grounded-wye source to the PECO system. If the generator does not present a grounded-wye source, Zero Sequence Overvoltage Relays (59G) must be installed.

(2) The parallel, generator loading and disconnecting operations must be automatic. Parallel time must be kept to a minimum and never exceed five (5) minutes.

(3) A paralleled transfer must be blocked if the normal PECO source to the load is not within +/- 10% of nominal voltage.

(4) The transfer scheme must be acceptable to PECO.

(5) The parallel operation must be monitored by a timing relay which will trip the generator's main breaker if the parallel lasts longer than 0.5 seconds. The tripping voltage source must be from a reliable source, i.e. battery or capacitor.

(6) Over/under voltage and over/under frequency relays must be installed according to the following sections of this Appendix, based on the size and type of generation being installed. Additional NUG relaying in the following sections of the Appendix are not required but may be specified, installed, and maintained at the discretion of the customer.

(7) The NUG must receive permission from the PECO organization having authority over the line, either the System Operations' Dispatcher or the Distribution Services' Dispatcher, prior to making the parallel.

(8) Momentary paralleling of generators does not waive any of the telemetering requirements in Section 7, "MONITORING OF NON-UTILITY GENERATORS," of this manual.

C) INDUCTION GENERATOR PROTECTION:

1) Required Protection Functions

a) Generation under 5 kVa: No extra relaying required.

b) Generation from 5 kVa - 25 kVa

Under Voltage Relays (27) (electrically held contactor may be submitted for the undervoltage relay).

c) Generation over 25 kVa

1) Over and Under Frequency Relays (81 o/u)

2) Over and Under Voltage Relays (59 and 27). Single phase voltage relays are acceptable for units rated below 250 kVa connected to PECO's 13 kV system and units rated below 1,000 kVa connected to PECO's 33 kV system. Higher rated units require three phase voltage relays.

2) Connections

If the generator is rated above 250 kVa, the over and under voltage relays must be connected to measure the line voltage (high side of the NUG's transformer).

Frequency relays can be located on the high or low side of the NUG's transformer.

Voltage and frequency relays must isolate the generator from PECO's line.

D) ACCEPTABLE RELAY TYPES:

PECO accepts the following relays. If a NUG desires another relay type, it should submit the relay to PECO for testing and acceptance. All such relays must meet the requirements noted in Section A (7) of this Appendix.

NOTE: Relays listed with (*) require installation of an acceptable test switch.

1) Over/Under Frequency Relays: (81 o/u)

Some of these relays require timers to provide the 5-second time delay specified.

GE	SFF
ABB	MDF
	KF (Underfrequency only)
	ITE-81 (*)
	RXFE
Beckwith	PRIDE (*) (below 1000 kVa)
Basler	BE-1-81 (o/u)
Wilmar	WUF/WOF (*) (Induction generators under 100 kVa)

2) Over/Under Voltage Relays: (59/27)

GE	NGV
	IAV (undervoltage only)
	ICR (undervoltage only)
	IFV (undervoltage only)
ABB	SV (undervoltage only)
	SSVT
	CV (undervoltage only)
	CVQ (undervoltage only)
	ITE-59D (*) (overvoltage only)
	ITE-27D (*) (undervoltage only)
	ITE-47D (*) (undervoltage only)
	ITE-27/59 (*)
	RXEG 21
Beckwith	PRIDE (*) (below 1000 kVa)
Basler	BEI-27/59
Wilmar	250-X (*) (Three phase relay below 100 kVa only, or single phase relay below 40 kVa only)

3) Overcurrent Ground Relay: (51G)

GE	IFC-VI, IAC-VI, SFC
ABB	CO-8
	RXIDF 2H
	ITE-51Y (*)

4) Voltage Controlled Overcurrent Relay: (51V)

GE	IGCV, IFCS
ABB	COV-8 RXEG-21/RXIDF 2H ITE-51Y/ITE-47D (*)

5) Timing (associated with undervoltage relays):

GE	SAM
ABB	TD-5, RXKE 1

Agastat Timers

6) Zero Sequence Overvoltage Relay: (59G)

ABB	ITE-59 (*), CV, SV, SSVT
GE	NGV, IAV, IFV
Basler	BEI-59

E. REQUIRED SETTINGS:

1) Over and under Frequency (81)

a) Synchronous Generator

Overfrequency	- 60.5 Hz (+/-0.1 Hz)
Underfrequency	- 59.5 Hz (+/-0.1 Hz)#
Time Delay	- No Intentional Delay (10 cycles maximum)

Synchronous generators over 1000 kVa connected to a PECO facility with no other distribution load will have an underfrequency setting of 57.5 Hz (+/-0.1 Hz) with a time delay of 5 seconds (+/-10% Tolerance). Exceptions may be specified at time of installation.

b) Induction Generator

Overfrequency	- 61 Hz (+/-1% Tolerance)

Underfrequency	- 59 Hz (+/-1% Tolerance)
Time Delay	- No Intentional Delay (10 cycles maximum)

2) Overvoltage (59) - 100% of Nominal Line Voltage (+/-5% Tolerance)

   Time Delay - No Intentional Delay (10 cycles maximum), except 0.1 Seconds delay recommended for solid state relays.

3) Undervoltage (27) - 85% of Nominal Line Voltage (+/-5% Tolerance)

   Time Delay - 2 seconds (+/-10% Tolerance), although PECO will consider other settings between 1 and 10 seconds at the NUG's request.

4) Voltage controlled Time Overcurrent (51V) - Specified at time of installation.

5) Overcurrent Ground (51G) - Specified at time of installation.

6) Ground Overvoltage (59G) - Specified at time of installation.

APPENDIX II

REQUIREMENTS for PARALLEL OPERATION

of

NON-UTILITY GENERATION

at

RESIDENCES

PECO ENERGY COMPANY

APPENDIX II

REQUIREMENTS FOR PARALLEL OPERATION OF NON-UTILITY GENERATION AT RESIDENCES

A. Customer Eligibility

Applicant must be a PECO customer with at least a 100 amp secondary service. The generator operated in parallel with PECO may not exceed 15 kVa 240 volts without special agreement.

B. Equipment Requirements

Figure 1 shows a suggested arrangement of equipment, although it is not intended as a design document. The customer shall furnish, install and maintain the following equipment:

1. Energy conversion facilities, generator and necessary interface equipment to match PECO service.

2. Two kilowatthour meter sockets. Both sockets must be outdoors, with space for mounting an instruction and caution panel for PECO personnel.

3. Outdoor safety switch (100 amp 2-pole), with suitable dual element fuses and padlock accessible to PECO.

4. Reverse power, undervoltage, overcurrent and out-of-step relaying or equivalent.

5. Size 2 contactor, 240 volt, 2-pole, with 2 element overload device or equivalent.

6. Field application and synchronizing relaying, if necessary.

C. Requirements for Connection

The attached proposal must be prepared and submitted by a Professional Engineer, registered in the Commonwealth of Pennsylvania and competent in power system applications. The quality of service must be documented prior to connection, and must conform to standards described for standard wave-form, harmonic distortion and voltage limits, so service to other customers will not be jeopardized. Failure to comply with these standards will result in disconnection

of parallel operation until the applicant has successfully corrected the fault condition.

D. Rearrangement of PECO Distribution Facilities

The cost of rearranging PECO's existing distribution facilities required for parallel operation by the customer shall be borne by that customer.

Date: _____

PROPOSAL

FOR

PARALLEL OPERATION AT RESIDENCES

PECO Energy Company
Attn: Business Services Department
2301 Market Street
Philadelphia, Pennsylvania 19101

I hereby apply for Parallel Operation at Residences under the provisions of PECO's Tariff (Electric - Pa. PUC No. 1) on file with the Pennsylvania Public Utility Commission, and any supplements to that tariff, or any tariffs issued to supersede such tariff which may hereafter be filed, at the following address:

_____

_____

_____

which is presently served by PECO Energy Company at Rate ____.

The following specifications pertaining to the installation

have been prepared by _____, a Pennsylvania Registered Professional Engineer, whose seal appears on this application:

Prime Mover and Generator

(a) Manufacturer: _____

(b) Manufacturer's Reference Number, Type or Style: _____

(c) Serial Number: _____

(d) Nameplate Date: _____

Interface Circuit - This is the electrical circuit interposed between the source and the PECO supply circuit. In some cases, this interface is provided by a synchronous inverter.

(a) Manufacturer: _____

(b) Manufacturer's Reference Number, Type or Style: _____

(c) Serial Number: _____

(d) Nameplate Date: _____

Generator and Interface Circuit (Combined Characteristics)

(a) Maximum Parallel Operation - This is not the generator capacity, but the maximum capacity at the interface.

_____ kW

(b) Provide data showing the wave-shape of voltage at the interface for equipment operating at maximum output.

(c) Submit calculated (or measured) percent wave-shape distortion, at interface.

Additional Information

Attached is a detailed electrical diagram of the generating equipment, protective features, and connection to PECO's supply line.

Name & Address of Registered Professional Engineer: _____

_____

License Number: _____

Signature of Engineer: _____

Date: _____

(SEAL)

Additional Requirements

1. I agree to allow PECO to install and inspect on the premises any equipment for measuring loads or other data needed to determine operating characteristics.

2. I agree to keep a maintenance log sheet at the premises and make it available for PECO inspection.

After PECO has reviewed this application, please notify me

at the stated address or telephone me at _____. I may be contacted in the event that PECO has comments or questions regarding this proposed installation.

I understand and agree not to order equipment or to proceed with installation based on parallel operation until I receive a letter of acceptance from PECO Energy Company.

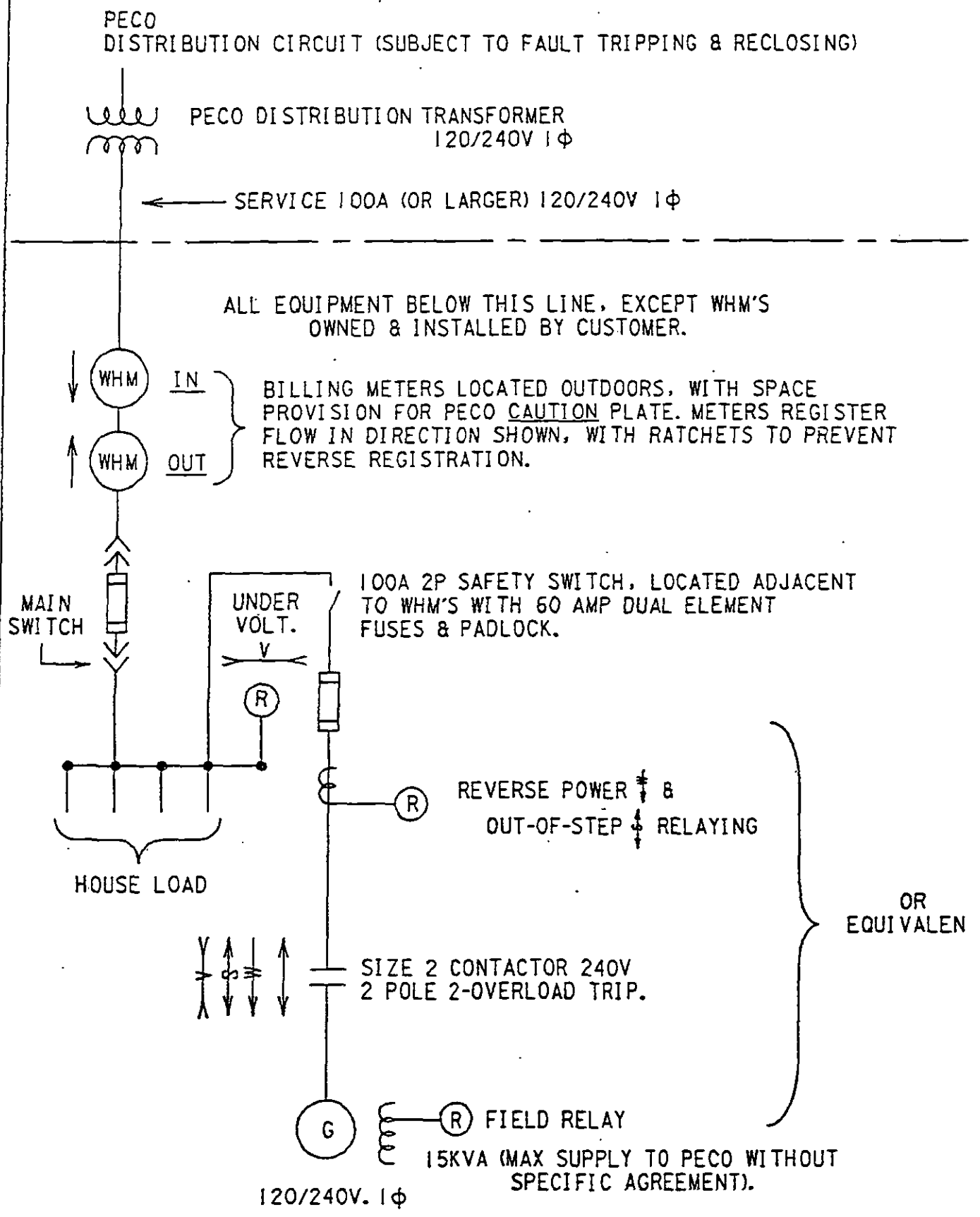
Signature of Applicant _____

Date _____

(For PECO)

Received by _____

Date _____



EQUIPMENT REQUIREMENT FOR PURCHASE OF
SURPLUS POWER AT SECONDARY VOLTAGE

9/90

FIGURE 1

APPENDIX III

GENERATOR MODELING DATA REQUIREMENTS

for

PARALLEL OPERATION

of

NON-UTILITY GENERATORS

PECO ENERGY COMPANY

APPENDIX III

GENERATOR MODELING DATA REQUIREMENTS FOR PARALLEL OPERATION OF NON-UTILITY GENERATORS

This Appendix III guides prospective NUG's in submitting generator stability data for modeling in the Company's stability and reliability analyses. PECO needs the information requested below to be able to model accurately the response of the NUG to system conditions and to ensure the reliable operation of the Company's system. The exact data is based on the specific equipment that the NUG customer will install. The Transmission Planning Branch of PECO's Transmission Management Division, 2301 Market Street (S10-1), Philadelphia, PA 19101 can clarify specific elements of these data requirements.

Station Name: _____

Rated Output:	Summer:	kW _____	kVA _____
	Winter:	kW _____	kVA _____
Station Load:	Summer:	kW _____	kVA _____
	Winter:	kW _____	kVA _____

Voltage: _____ RPM: _____

GENERATOR DATA

I. Unsaturated Reactances (per unit on _____ kVA, _____ kV base)

Direct Axis Synchronous Reactance, X_d = _____

Direct Axis Transient Reactance, X'_d = _____

Direct Axis Subtransient Reactance. X''_d = _____

Negative Sequence Reactance. X_2 = _____

Zero Sequence Reactance, X_0 = _____

Quadrature Axis Synchronous Reactance, X_q = _____

Quadrature Axis Transient Reactance, X'_q = _____

Quadrature Axis Subtransient Reactance, X''_q _____

Stator Leakage Reactance, X_L = _____

II. Resistances (ohms @ _____ °C)

D.C. Armature Resistance, r_a = _____

A.C. Armature Resistance, r = _____

Field Resistance, r_f = _____

III. Time Constants (seconds)

Direct Axis Transient Open Circuit, T'_{do} = _____

Direct Axis Subtransient Open Circuit, T''_{do} = _____

Quadrature Axis Transient Open Circuit, T'_{go} = _____

Quadrature Axis Subtransient Open Circuit, T''_{qo} = _____

IV. Additional Generator Data (seconds)

Inertia Constant, H = _____

EXCITATION SYSTEM DATA

Attach excitation data in accordance with IEEE standards (Refer to "Excitation System Models for Power System Stability Studies" from the document titled "IEEE Transactions on Power Apparatus and System," Vol. 100, Feb. 19981).

TURBINE AND GOVERNOR DATA

Select the appropriate model from one of the following. If none of the following apply, provide data and block diagram for the correct model.

I. Gas Turbine: (refer to diagram)

Governor Mechanism Time Constant, T_1 = _____ seconds

Turbine Power Time Constant, T_2 = _____ seconds

Turbine Exhaust Temperature Time Constant, T_3 = _____ seconds

Temperature Limiter Gain, K_t = _____

Permanent Droop, R = _____

Maximum Turbine Power, V_{max} = _____ p.u. on _____ kVA base

Minimum Turbine Power, V_{min} = _____ p.u. on _____ kVA base

Ambient Temperature Load Limit, L_{max} = _____

Turbine Damping Coefficient, D_{turb} = _____

II. Steam Turbine & Governor: (refer to diagram)

Steam Bowl Time Constant, T_1 = _____ seconds

Numerator Time Constant, T_2, of T_2 & T_3 Block = _____ seconds

Reheater Time Constant, T_3 = _____ seconds

Permanent Droop, R = _____

Maximum Valve Position, V_{max} = _____ p.u. on _____ kVA base

Minimum Valve Position, V_{min} = _____ p.u. on _____ kVA base

Turbine Damping Coefficient, D_t = _____

III. Cross Compound Turbine Governor: (refer to diagram)

High Pressure Generator:

Maximum Valve Position, P_{MAX} (HP) = _____ p.u. on _____ kVA base

Governor Droop, R (HP) = _____

Governor Time Constant, T_1 (HP) = _____ seconds

Turbine Time Constant, T_3 (HP) = _____ seconds

Turbine Time Constant, T_4 (HP) = _____ seconds

Reheater Time Constant, T_5 (HP) = _____ seconds

Power Fraction Ahead of Reheater (if dual reheat stages exist), F(HP) = ___

Damping Factor, D(HP) = _____

Low Pressure Generator:

Maximum Valve Position, P_{MAX} (LP) = _____ p.u. on _____ kVA base

Governor Droop, R(LP) = _____

Governor Time Constant, T_1 (LP) = _____ seconds

Turbine Time Constant, T_3 (LP) = _____ seconds

Turbine Time Constant, T_4 (LP) = _____ seconds

Reheater Time Constant, T_5 (LP) = _____ seconds

Power Fraction Ahead of Reheater (if dual reheat stages exist), F(LP) = ___

Damping Factor, D(LP) = _____

IV. Hydro Turbine & Governor: (refer to diagram)

Permanent Droop, R = _____

Temporary Droop, r = _____

Washout Time Constant, T_r = _____ seconds

Filter Time Constant, T_f = _____ seconds

Gate Servo Time Constant, T_g = _____ seconds

Maximum Gate Opening, G_{max} = _____ p.u. (full open = 1, full close = 0)

Minimum Gate Opening, G_{min} = _____ p.u. (full close = 0, full open = 1)

Maximum Gate Velocity, V_{elm} = _____ (p.u. per sec.)

Water Inertia Time Constant, T_w = _____ seconds

Turbine Gain, A_t = _____

Turbine Damping Factor, D_{turb} = _____

No-Load Turbine Flow at Nominal Head, qn1 = _____ p.u.

POWER SYSTEM STABILIZER DATA

If applicable, provide the following:

1. Power system stabilizer type
2. Block diagram of stabilizer representation with appropriate time constant and gain values

ADDITIONAL GENERATOR INFORMATION

Provide the following data plots:

1. Reactive Capability Curves (MVAR output vs. MW output).
2. Saturation and Synchronous Impedance Curves (p.u. armature voltage or current vs. field amperes).
3. Excitation V Curves (p.u. kVA vs. field amperes).

GENERATOR STEP-UP TRANSFORMER DATA
(if applicable)

Impedance: (per unit on _____ kVA, _____ kV base)

R = _____ X = _____

Nominal High Side Voltage = _____ kV

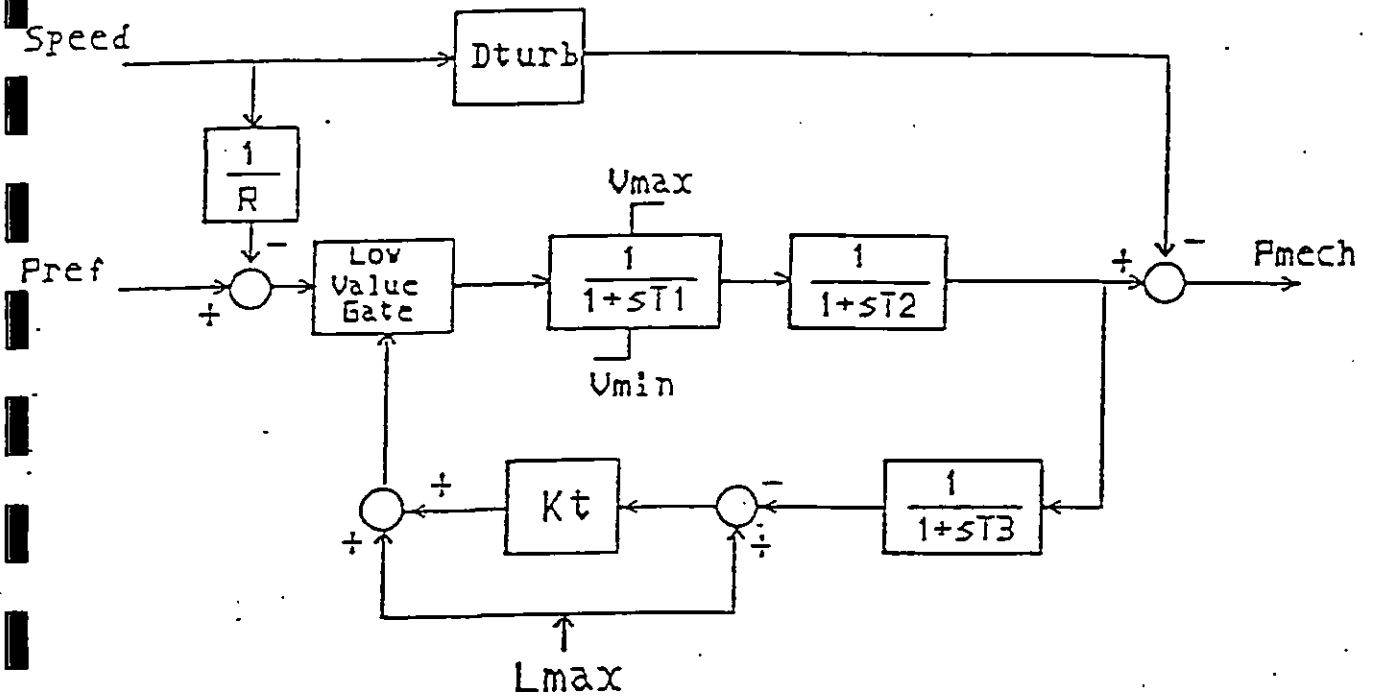
Nominal Low Side Voltage = _____ kV

Rating = _____ kVA

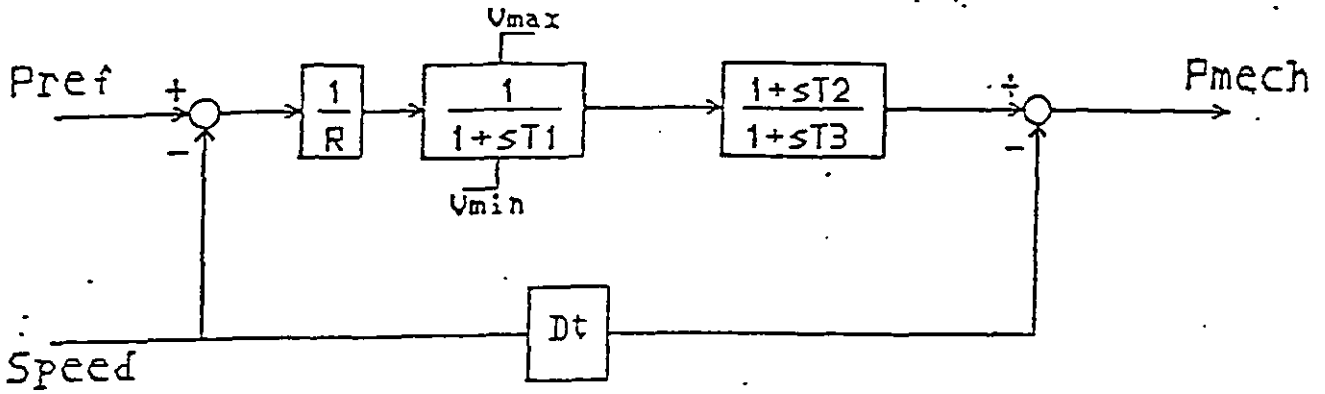
Expected Tap Setting = _____ kV

Tap Settings Available: _____ kV

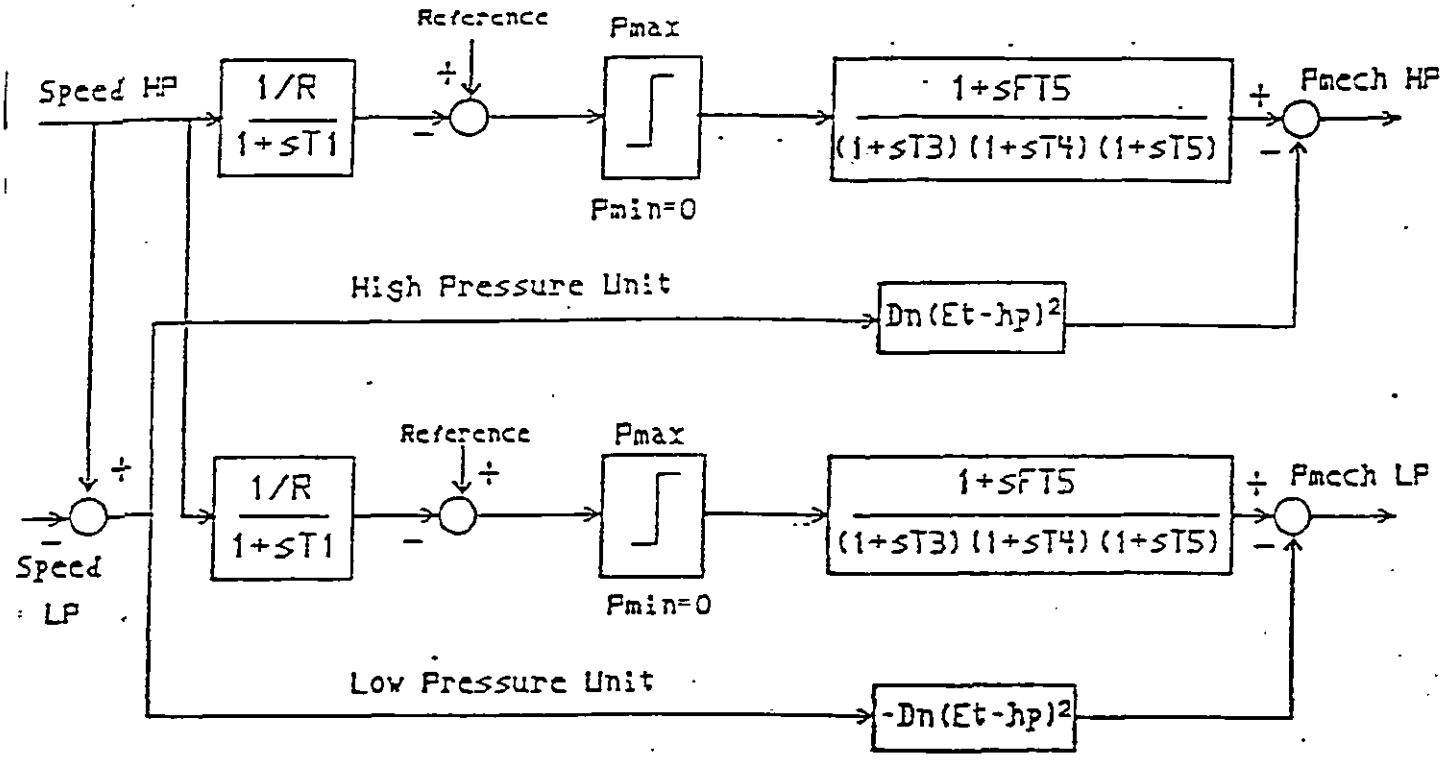
_____ kV


Speed
Dturb
1/R
Vmax
Pref
Low Value Gate
1/(1+sT1)
1/(1+sT2)
Pmech
Vmin
Kt
1/(1+sT3)
Lmax

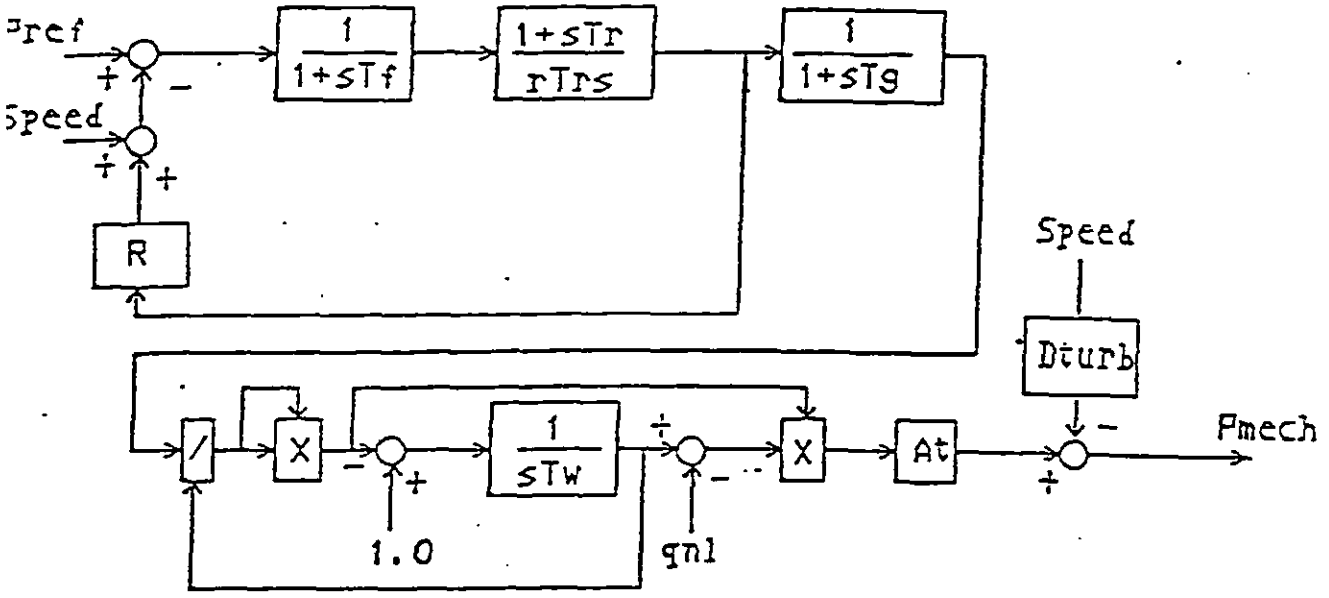
GAS TURBINE



STEAM TURBINE & GOVERNOR



CROSS COMPOUND TURBINE GOVERNOR



HYDRO TURBINE & GOVERNOR

FILE CONTINUED