

A-110550F0160

PPL STATEMENT NO. 1

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9-22-05
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**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Joint Application of PECO Energy Company)
and Public Service Electric and Gas)
Company for Approval of the Merger of)
Public Service Enterprise Group)
Incorporated With and Into Exelon)
Corporation)

Docket No. A-110550F0160

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DIRECT TESTIMONY OF
JOSEPH P. KALT, Ph.D.
ON BEHALF OF THE PPL COMPANIES
June 28, 2005

DOCUMENT
FOLDER

Addressing the impact the proposed merger will have upon the Pennsylvania retail customers and the competition to sell electricity to their retail Electric Generation Suppliers, including, (1) several critical flaws and unsupported assumptions in the market concentration analysis conducted by the Merging Parties' Witness Dr. William Hieronymus, such as the failure to analyze the impact of the merger on the PJM Classic marketplace and the decision to ignore the importance of financial transmission rights in assessing the impact of the merger on competition in the PJM East market; (2) whether the Merging Parties' virtual divestiture mitigation proposal can be relied upon to cure the anticompetitive impact of the merger in the same manner as real divestiture of generation to non-affiliated entities; and (3) whether the Merging Parties' proposal to prevent certain significant competitors from purchasing divested assets is anticompetitive and discriminatory.

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PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

1 **I. QUALIFICATIONS**

2 **Q: WHAT IS YOUR NAME AND BY WHOM ARE YOU EMPLOYED?**

3 A: My name is Joseph P. Kalt. I am the Ford Foundation Professor of International
4 Political Economy at the John F. Kennedy School of Government, Harvard
5 University, Cambridge, MA 02138. The Kennedy School of Government is
6 Harvard's graduate school for public policy and administration. I also work as a
7 Senior Economist with Lexecon, an FTI Company. Lexecon is an economics
8 consulting firm with offices in Cambridge, Massachusetts, and Chicago, Illinois. My
9 *curriculum vitae* is attached hereto (Exhibit JPK-1) and lists my prior testimony as an
10 expert and my publications.

11 **Q: PLEASE SUMMARIZE YOUR PROFESSIONAL AND EDUCATIONAL**
12 **BACKGROUND.**

13 A: I hold B.A., M.A., and Ph.D. degrees in economics and am a specialist in the
14 economics of competition, antitrust, and regulation, with particular emphasis on the
15 energy and natural resource sectors. Throughout my professional career, I have
16 conducted research, published, taught, and testified extensively on the economics of
17 market structure, contracting, regulation, pricing, valuation, and strategic
18 performance, with particular emphasis on the energy industries. At Harvard, I served
19 as an Instructor, Assistant Professor, and Associate Professor in the Department of
20 Economics from 1978 to 1986, prior to joining the faculty of the Kennedy School of
21 Government as a Professor with tenure in 1986. At the Kennedy School, I have also
22 served as Chair of the Economics and Quantitative Methods Cluster, Faculty Chair
23 and Academic Dean for Research, Chair of Teaching Programs, and Chair of Ph.D.

1 Programs. In the Department of Economics, I had primary responsibility for teaching
2 the graduate and undergraduate courses in the economics of regulation and antitrust.
3 At the Kennedy School, my teaching responsibilities have included the economics of
4 regulation and antitrust; the economics of public policy and of natural resource and
5 environmental policy; and economic development on American Indian reservations.

6 **Q: PLEASE DESCRIBE YOUR BACKGROUND AS IT RELATES TO THIS**
7 **PROCEEDING.**

8 **A:** In the course of my academic and consulting experience, I have studied extensively
9 the economics of the electric power, oil, natural gas, and coal industries, and the
10 impacts on these industries of changing regulatory and competitive environments. I
11 have provided expert testimony on these issues in various state and federal courts, as
12 well as before the United States Congress. Over my career, I have testified numerous
13 times before the Federal Energy Regulatory Commission ("FERC") on matters
14 ranging from electric power merger and transmission policy to natural gas pipeline
15 and marketing policy. I have studied and submitted testimony on the FERC's market
16 power screens used to evaluate applications to charge market-based wholesale electric
17 power rates. Recently, I have submitted testimony before the FERC regarding the
18 market power impacts of the proposed merger that is the subject of the present
19 proceeding in Pennsylvania.¹ My experience before various agencies (including the

¹ Protest of the PPL Companies, FERC Docket No. EC05-43-000, Exhibit PPL-1, Prepared Direct Testimony of Joseph P. Kalt, Ph.D. on behalf of the PPL Companies (filed Apr. 11, 2005); Supplemental Protest and Request for Hearing of the PPL Companies, FERC Docket No. EC05-43-000, Exhibit PPL-6, Prepared Supplemental Direct Testimony of Joseph P. Kalt, Ph.D. on behalf of the PPL Companies (filed May 27, 2005).

1 Pennsylvania Public Utility Commission) and in related areas is summarized in
2 Exhibit JPK-1.

3 **II. PURPOSE OF TESTIMONY AND SUMMARY OF FINDINGS**

4 **Q: ON WHOSE BEHALF IS YOUR TESTIMONY SUBMITTED?**

5 **A:** My testimony is submitted on behalf of the PPL Electric Utilities Corporation; PPL
6 EnergyPlus, LLC; PPL Brunner Island, LLC; PPL Holtwood, LLC; PPL Martins
7 Creek, LLC; PPL Montour, LLC; PPL Susquehanna, LLC; PPL University Park; and
8 Lower Mount Bethel Energy, LLC (collectively the “PPL Companies” or “PPL”).

9 **Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

10 **A:** I have been asked by the PPL Companies to review and analyze a filing made by
11 PECO Energy Company (“PECO”) and Public Service Electric and Gas Company
12 (“PSE&G”) before the Pennsylvania Public Utility Commission (“PaPUC”) to
13 consider the merger of Public Service Enterprise Group Incorporated (“PSEG”), the
14 corporate parent of PSE&G, with and into Exelon Corporation (“Exelon”), ultimate
15 corporate parent of PECO and PSE&G (collectively the “Merging Parties” or
16 “Applicants”).² In particular, I have studied at length the merger application’s
17 accompanying competitive impact analysis provided in support of the merger
18 application by Dr. William H. Hieronymus.³

² Joint Application of PECO Energy Company and Public Service Electric and Gas Company for Approval of the Merger of Public Service Enterprise Group Incorporated With and Into Exelon Corporation, Docket No. A-110550F0160, Joint Application of PECO Energy Company and Public Service Electric and Gas Company (filed Feb. 4, 2005) (“Joint Application for Merger Approval”).

³ Joint Application for Merger Approval, PECO Statement No. 3, Direct Testimony of William H. Hieronymus, and Exhibit WHH-1, Prepared Direct Testimony and Exhibits of William H. Hieronymus

1 Q: PLEASE DESCRIBE THE BACKGROUND OF THE MERGING PARTIES'
2 PROPOSAL.

3 A: The proposed merger of Exelon and PSEG could lead to a significant reduction in
4 competition within wholesale power markets in the Mid-Atlantic region which would
5 affect Pennsylvania retail customers as their suppliers pass through higher wholesale
6 power costs. In response to these concerns, the Merging Parties have identified as
7 part of their merger proposal various types of mitigation they suggest should alleviate
8 the competitive impacts.

9 The central element of the proposed mitigation is the Merging Parties' plans
10 to physically and "virtually" divest 5,600-6,600 MW of generation capability. The
11 virtual divestiture consists not of transfer of ownership of Merging Parties' assets, but
12 of proposed medium- and long-term contracts of power from such assets to third
13 parties. As asserted evidence that the proposed actual and virtual divestitures are
14 effective as mitigation of potential adverse competitive impacts, Exelon and PSEG
15 have conducted various analyses of the competitive impact of their proposal in
16 support of their merger application submitted to the FERC, and they have submitted
17 these same analyses in support of their merger proposal filed with the PaPUC.

18 As of this date, the Merging Parties have developed and submitted two
19 distinct sets of competitive impact analyses. The Original Proposal was provided
20 with the Merging Parties' merger application to the FERC. The Supplemental

on behalf of Exelon Corporation ("Hieronymus Prepared Direct Testimony") ("Original Proposal")
(filed Feb. 4, 2005); Joint Application for Merger Approval, Exhibit WHH-2, Supplemental Testimony
and Exhibits of William H. Hieronymus on behalf of Exelon Corporation ("Hieronymus Supplemental
Testimony") ("Supplemental Proposal") (filed May 27, 2005).

1 Proposal was submitted following various parties' objections to the Original Proposal
2 in comments and protests to the FERC. The Merging Parties' Supplemental Proposal
3 and modified mitigation proposals include important additional mitigation measures
4 not included with the Original Proposal. The Merging Parties are only committing to
5 the supplemental mitigation measures if the FERC will approve the merger
6 application without setting it for hearing. Thus, the Supplemental Proposal's analyses
7 are contingent upon FERC approval without a hearing and are withdrawn in the event
8 a hearing is ordered.

9 **Q: PLEASE EXPLAIN THE IMPACT OF THE MERGER ON PENNSYLVANIA**
10 **RETAIL CUSTOMERS.**

11 **A:** Under Section 2811 (e) of the PA Public Utility Code, the Pennsylvania Public Utility
12 Commission shall consider whether a proposed merger or consolidation of electric
13 utilities or electric suppliers "is likely to result in anticompetitive or discriminatory
14 conduct, including the unlawful exercise of market power, which will prevent retail
15 electricity customers in the Commonwealth from obtaining the benefits of a properly
16 functioning and workable competitive retail electricity market."

17 The portion of retail electricity customers' rates (or prices where applicable)
18 in Pennsylvania that is attributable to electricity generation costs is primarily
19 determined by the price of electricity in wholesale markets. Although currently in
20 Pennsylvania most regulated electric utilities provide generation service under
21 negotiated price caps that are lower than wholesale electricity prices, any time
22 wholesale prices have been below these price caps, retail competitors (Electric
23 Generator Suppliers or "EGSs") have demonstrated the ability to capture electric

1 utility customers, clearly revealing the linkage between wholesale and retail
2 electricity prices. Moreover, in states where retail competition has been introduced,
3 and transitional price caps either were not used or have expired, retail electricity
4 generation prices increase and decrease in step with wholesale power prices.

5 To the extent the Merging Parties' proposal provides them with an
6 opportunity to exercise market power, they can affect retail electricity markets. First,
7 the Merging Parties can foreclose EGSs' ability to offer products that can compete
8 against the price-capped service offered by existing electric utilities by taking actions
9 that increase wholesale prices, and in particular prevent the ability of Exelon's retail
10 customers in Pennsylvania from receiving competitive offers. And second, to the
11 extent that the Merging Parties cause wholesale prices to increase through an exercise
12 of market power, retail prices would similarly be increased, leading to higher costs
13 for electricity customers.

14 **Q: PLEASE SUMMARIZE YOUR FINDINGS.**

15 **A:** The proposed merger, absent mitigation, will result in significant generation market
16 concentration increases in certain geographic regions of the current PJM
17 Interconnection. The Merging Parties apply the FERC's merger analysis screens and
18 standards for merger review and approval in both their Original and Supplemental
19 *Proposals. While they have submitted proposed "mitigation" plans (primarily in the*
20 *form of proposed divestiture and long-term contractual commitments characterized as*

1 virtual divestiture),⁴ both the Original and Supplemental Proposals’ analyses of the
2 competitive impacts of the merger are incomplete and cannot form a proper basis for
3 an accurate consideration of the proposed merger.⁵

4 In particular, the Original and Supplemental proposals have set forth proposed
5 “mitigation” that depends heavily on “virtual divestiture” as an antidote to the
6 prospective adverse effects of the merger on market competitiveness. Such proposed
7 mitigation falls short of actual ownership transfer and, in this context, is questionable
8 in its prospective effectiveness as mitigation. In addition, the Merging Parties’
9 analyses are flawed in the manner in which they address the competitive implications
10 of the allocation of rights to import power into transmission-constrained areas of
11 PJM, and the selection of relevant markets in which the merger carries important
12 implications for competition.

13 Table 1 (below) shows the implications of the Merging Parties’ mitigation
14 proposals’ potential failure due to ineffective virtual divestiture combined with a
15 corrected approach for assessing transmission import allocations. Table 2 analyzes
16 the implications of ineffective virtual divestiture, combined with a more appropriate
17 relevant geographic market definition. As the Tables show, using conventional

⁴ I also note that the Merging Parties’ proposed mitigation provided as part of the Original Proposal would exclude certain participants (such as PPL) from the market for mitigation assets. Such refusal to deal with certain parties in the marketing of divested assets is inconsistent with sound merger policy. The Merging Parties’ Supplemental Proposal does not eliminate this concern, because they have stated that the Supplemental Proposal will be withdrawn if the FERC conducts a hearing on this transaction.

⁵ As I describe herein, the Merging Parties’ Supplemental Proposal (and revised contingent mitigation proposal) provides an inadequate response to various shortcomings identified in the Merging Parties’ Original Proposal filed with the FERC and the PaPUC. Thus, both the Original and Supplemental Proposals suffer from infirmities that must be corrected.

1 measures of market concentration, the unmitigated merger proposal clearly results in
2 significant impacts on the regional wholesale electricity market concentrations. For
3 example, Table 1 analyzes the Merging Parties' Supplemental Proposal in the PJM
4 East market, with virtual divestiture taken to fail as effective mitigation and with
5 imports into PJM East (which includes most of PECO's service territory, part of the
6 PPL and Metropolitan Edison service territories, as well as New Jersey and
7 Delmarva) properly allocated based on financial transmission right ("FTR")
8 ownership (as opposed to the pro-rata allocation employed by Dr. Hieronymus). The
9 results indicate that in the event of failed mitigation and inaccurate analysis of rights
10 to import power into PJM East, the proposed merger fails all of the FERC's screening
11 measures (i.e., in this instance a "Change in HHI" of greater than 100 indicates a
12 screen failure).

13

Table 1

Sensitivity of PJM East Market Power Analyses to Failure of Virtual Divestiture as Effective Mitigation and Allocation of Imports by FTR Holdings

Period	Exelon Capacity MW	PSEG Capacity MW	Pre-Merger HHI	Post-Merger Post-Mitigation Market Share	Post-Merger Post-Mitigation HHI	Change in HHI	EEG Capacity Post-Mitigation MW	Mitigated Amount MW
S_SP1	8417	10213	1491	40%	1991	499	14945	3685
S_SP2	7450	8294	1437	41%	2032	594	13175	2569
S_P	6557	6438	1705	45%	2268	563	10426	2569
S_OP	5926	3082	2083	60%	3679	1596	9008	0
W_SP	7848	8333	1455	42%	2069	615	13578	2603
W_P	6892	6251	1643	44%	2187	545	10540	2603
W_OP	6701	4097	1930	54%	3129	1199	10106	692
SH_SP	6192	5615	1439	41%	1981	543	9691	2116
SH_P	6046	3402	1705	51%	2746	1041	8944	504
SH_OP	5349	2521	2039	58%	3504	1465	7870	0

Mitigation assumption: FirstEnergy, Pepco, PPL and Reliant each acquire 25% of divested assets in each time

Note: PJM East Market, Economic Capacity, Applicants' Supplemental Proposal Including the Allocation of Imports by FTR Holdings

Source: Dr. Hieronymus workpapers, Exhibit J-28 to Supplemental Testimony.

Similarly, Table 2 shows the results of the Merging Parties' Supplemental Proposal under the case in which virtual divestiture fails as effective divestiture and PJM Classic (which comprises the historic PJM boundaries including most of eastern and central Pennsylvania) is treated as a relevant geographic market definition (albeit, ignored by the Merging Parties). These results also show that the merger proposal would fail FERC's merger screens in all time periods.

Table 2
Sensitivity of PJM Classic Market Power Analyses to Failure of Virtual Divestiture as Effective Mitigation

Period	Exelon Capacity MW	PSEG Capacity MW	Pre-Merger HHI	Post-Merger Post-Mitigation Market Share	Post-Merger Post-Mitigation HHI	Change in HHI	Post-Merger Post-Mitigation Capacity MW	Mitigated Amount MW
S_SP1	10,366	11,202	983	26.8%	1,261	278	17,884	3,685
S_SP2	9,404	9,281	960	27.1%	1,264	304	16,116	2,569
S_P	7,835	7,445	1,008	27.7%	1,299	291	12,711	2,569
S_OP	6,238	3,189	1,395	43.7%	2,250	855	9,427	0
W_SP	10,003	9,357	931	27.1%	1,232	301	16,757	2,603
W_P	8,391	7,299	980	27.0%	1,258	278	13,087	2,603
W_OP	7,680	4,946	1,050	30.5%	1,456	406	12,134	692
SH_SP	7,743	6,257	1,016	27.8%	1,319	303	11,885	2,116
SH_P	6,821	4,064	1,055	30.9%	1,468	413	10,381	504
SH_OP	5,333	2,440	1,343	41.8%	2,096	753	7,773	0

Note: PJM Classic Market, Economic Capacity, Applicant's Supplemental Proposal

Source: Exhibit J-28 to Applicants' Supplemental Proposal, Attachment PPL-I-9b (Revised)-2 to the interrogatory response PPL-9b

By way of summary, it is clear that the proposed merger poses a substantial prospect of significantly worsened problems of market power. The Applicants' proposed mitigation has not fully ameliorated this concern, particularly in light of the inadequacy of the mitigation they have proposed and the inadequacies of their analyses of the competitive implications of their proposed merger and mitigation.

III. THE MERGING PARTIES' ORIGINAL AND SUPPLEMENTAL PROPOSALS' ANALYSES ARE INCOMPLETE AND DO NOT ENSURE THAT COMPETITIVE IMPACTS WILL BE ELIMINATED

Q: PLEASE DESCRIBE THE PROCESS USED BY THE MERGING PARTIES FOR ANALYZING THE COMPETITIVE IMPACTS OF THE PROPOSED MERGER AND COMPANION MITIGATION.

A: The Merging Parties follow in substantial part the FERC requirement that various competitive impact analyses be conducted as described in Appendix A to the FERC's

1 Merger Policy Statement⁶ as modified in the revised Filing Requirements Under Part
2 33 of the FERC Regulations (Order No. 642).⁷ Where a merger results in primarily
3 horizontal market concentration, as is the case with the Merging Parties' application,
4 the core of the FERC's required analysis is associated with carrying out a delivered
5 price test as outlined under its guidelines.⁸

6 Although the data required to execute the delivered price test are numerous,
7 the conceptual approach is straightforward: The companies proposing to
8 merge identify relevant geographic markets based on where they currently
9 offer products for sale, and identify, in the case of electricity generation,
10 various seasonal time periods representative of variations in load (and thus
11 market price level), which then form the basis of the analysis. Through
12 application of the delivered price test, the companies proposing to merge then
13 establish, by the use of the Herfindahl-Hirschman Index ("HHI") market
14 concentration measures, the impact of the proposed merger on the relevant
15 geographic market structures by calculating the pre- and post-merger market
16 concentrations as the starting point of the analysis of the competitive
17 implications of a merger. The difference between the pre- and post-merger
18 HHIs are then interpreted under FERC guidelines as screens to assess if the
19 proposed merger will raise concerns about possible adverse competitive
20 impacts and, therefore, require further investigation by the FERC of likely
21 post-merger competitive impacts. This use of its merger screens is largely
22 consistent with the *Horizontal Merger Guidelines* adopted by the U.S.
23 Department of Justice and Federal Trade Commission.⁹

⁶ *Inquiry Concerning the Commission's Merger Policy Under the Federal Power Act: Policy Statement*, Order No. 592, 61 Fed. Reg. 68,595 (Dec. 30, 1996), FERC Stats. & Regs., Regulations Preambles (July 1996 – Dec. 2000) ¶ 31,044 (1996), *reconsideration denied*, Order No. 592-A, 62 Fed. Reg. 33,341 (June 19, 1997), 79 FERC ¶ 61,321 (1997)

⁷ *Revised Filing Requirements Under Part 33 of the Commission's Regulations*, Order No. 642, 65 Fed. Reg. 70,983, at 70,990 (Nov. 28, 2000), FERC Stats. & Regs., Regulations Preambles (July 1996 – Dec. 2000) ¶ 31,111 (2000), *order on reh'g*, Order No. 642-A, 66 Fed. Reg. 16,121 (Mar. 23, 2001), 94 FERC ¶ 61,289 (2001) ("Order No. 642").

⁸ The FERC's merger guidelines also provide a framework for analyzing other potential impacts resulting from the proposed merger, but herein I focus on the horizontal market power screening analysis required by the FERC.

⁹ U.S. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines*, 57 Fed. Reg. 41,552, Sec. 1.0 (1992), *revised*, 4 Trade Reg. Rep (CCH) ¶ 13,104 (Apr. 8, 1997) ("DOJ Merger Guidelines").

1 Q: HOW ARE THE RESULTS OF THESE ANALYSES INTERPRETED?

2 A: The results are initially interpreted using the guidelines provided in Order No. 642.
3 To the extent a proposed merger does not violate the FERC's guidelines for
4 evaluating the merger's impact, it will likely be readily approved. These guidelines
5 require calculating pre- and post- merger market concentrations, and changes in
6 market concentrations. The results are interpreted as described for the following
7 three levels of post-merger market concentration:

8 (1) an unconcentrated post-merger market – if the post-merger HHI is below
9 1000, regardless of the change in HHI the merger is unlikely to have adverse
10 competitive effects; (2) a moderately concentrated post-merger market – if the
11 post-merger HHI ranges from 1000 to 1800 and the change in HHI is greater
12 than 100, the merger potentially raises significant competitive concerns; and
13 (3) a highly concentrated post-merger market – if the post-merger HHI
14 exceeds 1800 and the change in the HHI exceeds 50, the merger potentially
15 raises significant competitive concerns; if the change in HHI exceeds 100, it is
16 presumed that the merger is likely to create or enhance market power.¹⁰

17 At the same time, the FERC clearly indicates that the screens are but the
18 starting point for assessing the competitive impact of a merger. The FERC notes:
19 “If, however, the HHI statistics exceed the thresholds, the applicants must either
20 propose mitigation measures that would remedy the merger's potential adverse effects
21 on competition or address the other DOJ/FTC merger analysis factors.”¹¹ Thus,
22 analyzing the impact of a proposed merger can require more analysis than simply
23 examining screening results when the unmitigated merger's impacts on market

¹⁰ Order No. 642, 65 Fed. Reg. at 70,999 n.62.

¹¹ *Id.* at 70,999.

1 structure -- as reflected in HHIs and their changes -- push market structure over the
2 FERC's screening thresholds.

3 **Q: IS THE ANALYSIS FRAMEWORK USED BY THE MERGING PARTIES TO**
4 **ANALYZE THE COMPETITIVE IMPACTS OF THE MERGER**
5 **APPROPRIATE?**

6 **A:** Yes. It is a well-established principle of merger policy and antitrust economics that
7 policy tools such as market share and Herfindahl-Hirschman Index screens provide a
8 starting point for assessing the competitive implications of a merger.¹² Although in
9 this instance the PaPUC has not adopted a specific framework for analyzing the
10 proposed merger, it is appropriate to look to the analyses required by the FERC, DOJ
11 and FTC when considering the proposed application. In applying these analyses,
12 however, it must be remembered that they are but starting points.

13 **Q: PLEASE DESCRIBE THE ELEMENTS OF THE MERGING PARTIES'**
14 **MARKET POWER ANALYSES THAT ARE INADEQUATE.**

15 **A:** The Merging Parties have not: 1) considered all relevant geographic markets; 2)
16 established that the proposed virtual divestiture will eliminate the incentive for the
17 merged firm to exercise market power; 3) evaluated the importance of financial
18 transmission rights; 4) demonstrated that the selected delivered price test pricing
19 levels comport with the defined calculation approach; 5) justified a mitigation
20 proposal that is on the knife-edge for passing FERC screens; 6) considered the impact
21 the merger may have on the regulation of the PJM market; and 7) proposed mitigation

¹² DOJ Merger Guidelines at Section 2. *See also* Order No. 642, 65 Fed. Reg. at 70,999.

1 asset buyer restrictions (*per* the Original Proposal) that allow a reliable determination
2 of the post-merger marketplace structure.

3 **III.A Relevant Geographic Markets**

4 **Q: HAVE THE MERGING PARTIES PROPERLY CONSIDERED ALL**
5 **RELEVANT GEOGRAPHIC MARKETS?**

6 A: The Merging Parties have not properly supported their chosen definitions of relevant
7 geographic markets. In particular, they have not provided analytical support for the
8 conclusion that consideration of PJM Classic (i.e., PJM Mid-Atlantic) as a separate
9 relevant geographic market is unnecessary. Although enlarged with the 2002 addition
10 of Allegheny Energy, PJM's western interface still creates congestion and separates
11 the AP (Allegheny Power) service territory from PJM Classic. The distribution of
12 ownership of the assets in the slightly smaller market area due to this congestion –
13 and the impact of the proposed mitigation on this market – should be considered.

14 **Q: HOW HAVE THE MERGING PARTIES RESPONDED TO CONCERNS**
15 **RAISED REGARDING DR. HIERONYMUS' CHOICES OF RELEVANT**
16 **GEOGRAPHIC MARKETS?**

17 A: Dr. Hieronymus dismisses critiques focused on his selection of relevant geographic
18 markets as lacking merit.¹³ With respect to the PJM Classic market, he summarily
19 asserts that he has properly concluded it no longer requires separate consideration.
20 This is in spite of the fact that data on prices across various regions within PJM
21 indicate substantial impediments to across-zone price equalization. Exhibit JPK-2,

¹³ Hieronymus Supplemental Testimony at 32-36.

1 shows that recent annual average on-peak electricity prices in the Mid-Atlantic region
2 have ranged from a low of \$47.47/MWh in western Pennsylvania to as high as
3 \$57.07/MWh in northeastern New Jersey, with the largest price differences occurring
4 across PJM's western and eastern interfaces. *The demonstrable failure of prices of a*
5 *homogenous and fungible product like electric energy to equalize across transmission*
6 *boundaries is a compelling indicator that separate regional markets are not being*
7 *effectively joined into a single, common large market.*

8 Well-documented transmission congestion exists within and across PJM, and
9 gives rise to substantial and sustained price inequalities of the type seen in Exhibit
10 JPK-2.¹⁴ Such transmission congestion prevents inter-regional power flows and price
11 arbitrage that otherwise link regions into larger markets, and such congestion thus
12 represents a preeminent cause of isolated zones and load pockets that become their
13 own smaller markets during periods of transmission congestion. Yet, Dr.
14 Hieronymus' analysis largely overlooks key economic implications of such patterns
15 of congestion across PJM. The result is an incomplete analysis of the competitive
16 implications of the proposed merger in either its original or its revised forms.

17 **Q: WHAT IS DR. HIERONYMUS' STATED BASIS FOR WHY HE HAS NOT**
18 **ANALYZED THE PJM CLASSIC MARKET?**

19 **A:** Dr. Hieronymus cites the PJM Market Monitoring Units' 2004 State of the Market
20 report, dated March 8, 2005, as the reason why he does not analyze the PJM Classic

¹⁴ See, e.g., PJM Interconnection, L.L.C., Market Monitoring Unit, 2004 State of the Market Report at 201 (Mar. 8, 2005) ("PJM 2004 SOM"), available at <http://www.pjm.com/markets/market-monitor/som.html>, and discussion below.

1 market. In particular, he observes that PJM reports that it has been managing its
2 dispatch on either side of its western interface so as to hold down the number of hours
3 during which the entire interface is constrained.¹⁵ He does not address the persistent
4 price differentials that exist on either side of the western interface (see Exhibit JPK-
5 2), or the congestion that is causing the need to re-dispatch in the first place.
6 Although the trend in PJM is toward *attempting* to minimize the effects of within-
7 PJM transmission constraints, nevertheless, the number of hours the constraints are
8 almost reached and the system is congested has increased substantially over time. In
9 recent testimony presented at the FERC on this issue, it was noted that:

10 The PJM 500kV Eastern and Western transfer interfaces have been operating
11 within 10% of their hourly limits roughly 20% of the hours since 2000 and
12 within 20% of their hourly limits roughly 60% of the hours since 2000.
13 Focusing only on the summer peak hours when the system is most stressed,
14 these interfaces have been operating within 10% of their hourly limits roughly
15 30-35% of the hours and within 20% of their hourly limits roughly 70-85% of
16 the hours since 2000.¹⁶

17 This warrants further examination.

18 **Q: PLEASE EXPLAIN THE PJM 2004 STATE OF THE MARKET REPORT'S**
19 **ANALYSIS OF CONGESTION.**

20 **A:** The PJM 2004 SOM provides an extensive discussion of congestion on the PJM
21 system, and how it is managed by the system operators. As defined by PJM:
22 "Congestion occurs when available, low-cost energy cannot be delivered to all loads
23 because of limited transmission capabilities. When the least cost available energy

¹⁵ Hieronymus Supplemental Testimony at 33-34.

¹⁶ Baltimore Gas and Electric Co., *et al.*, Docket No. ER05-515-000, Formula Rate Filing, Appendix F, Exhibit TO-8, Direct Testimony of Jeffrey Tranen at 13 (filed Jan. 31, 2005).

1 cannot be delivered to load in a transmission-constrained area, higher cost units must
2 be dispatched in this constrained area to meet that load. The result is that the price of
3 energy in the constrained area is higher than elsewhere because of transmission
4 limitations.”¹⁷ Thus, it is clear that the price differentials shown in Exhibit JPK-2 are
5 driven by congestion. In fact, as I explain below, these price differentials are readily
6 traced to specific congestion issues described in the PJM 2004 SOM.

7 **Q: PLEASE EXPLAIN HOW PJM’S ANALYSIS OF CONGESTION SUPPORTS**
8 **THE NEED TO CONSIDER PJM CLASSIC AS A RELEVANT**
9 **GEOGRAPHIC MARKET.**

10 **A:** Although the PJM 2004 SOM reports fewer absolute interface constraints,¹⁸ there
11 continue to be transmission facilities associated with a particular interface that
12 experience considerable congestion. For example, the western interface is composed
13 of four transmission facilities (the Keystone-Juanita, Conemaugh-Juanita,
14 Conemaugh-Hunterstown, and Doubs-Brighton lines) and is commonly subject to
15 congestion.¹⁹ Additional review of the PJM 2004 SOM reveals that another
16 important transmission facility, the Bedington-Black Oak line, which is a pathway to
17 the Doubs-Brighton line where the latter forms part of the western interface, was “the
18 single most constrained facility in PJM during 2004.”²⁰

¹⁷ PJM 2004 SOM at 201 (footnotes omitted).

¹⁸ *Id.* at 214.

¹⁹ See PJM website at <http://www.pjm.com/etools/downloads/edatafeed/edatafeed-doc-product-sheet.pdf> for a description and depiction of the interfaces.

²⁰ PJM 2004 SOM at 214.

1 In fact, PJM further explains that the congestion event hours associated with
2 Bedington-Black Oak, combined with the AP south interface, restrict west-to-east
3 flows of power and that these paths are the primary path for energy transfers from AP
4 and midwestern generating resources to southwestern PJM and eastern Virginia
5 load.²¹ Thus, transfer limitations on upstream facilities limit flow into PJM Classic,
6 and one of the affected pathways is the most congested line in PJM. The result is
7 sustained price differences between AP and PJM. This can be seen in the persistent
8 price differences between the AP Zone and the other end of its path into PJM Classic
9 at the PEPCO Zone shown in Exhibit JPK-2. Exhibit JPK-3 shows the time pattern of
10 these price differences, depicting significant sustained price differentials of \$5-
11 10/MWh occurring during the winters and summers. Similarly, the pathway from the
12 AEP Zone to the FE Penelec Zone and the pathway from the AEP Zone to the AP
13 Zone (and onto the PEPCO Zone) clearly leave the AEP Zone separated from PJM
14 Classic for sustained periods. With the AEP Zone and the AP Zone unintegrated into
15 the rest of PJM, we are left with PJM Classic. The price differences in Exhibit JPK-2
16 and the time pattern of sustained cross-boundary price differences seen in Exhibit
17 JPK-3 indicate that PJM Classic is isolated as a relevant market during at least
18 summer and winter peak periods. Notwithstanding this finding, Dr. Hieronymus has
19 not provided a suitable analysis of the merger's implications for the PJM Classic
20 market.

²¹ *Id.* at 218.

1 Q: DO YOU HAVE ANY EVIDENCE THAT EXAMINING THE PJM CLASSIC
2 MARKET WOULD REVEAL SCREEN FAILURES?

3 A: Yes. While Dr. Hieronymus has not included an analysis of PJM Classic in his
4 testimony before the PaPUC, he has responded to a PPL interrogatory requesting the
5 analysis of this relevant geographic market.²² Exhibit JPK-4 shows Dr. Hieronymus'
6 results under the assumptions of the Merging Parties' Supplemental Proposal. This
7 analysis of the PJM Classic market clearly shows post-merger, post-mitigation HHI
8 measures all above 1000, which is in contrast to the lower post-merger, post-
9 mitigation values for the PJM Pre-2004 market when the western interface is ignored.
10 In six of the ten time periods analyzed, there are screen failures where the change in
11 HHI is greater than 100; in some periods the change in HHI is as high as 141. When
12 considering an appropriately defined relevant geographic market, PJM Classic, we
13 see that considerable bases for competitive concerns remain even when taking into
14 account the Merging Parties' Supplemental Proposal.²³

²² See PECO Energy Company's and Public Service Electric and Gas Company's answer to discovery request PPL No. 9(b) – Revised, Attachment PPL-I-9b (Revised)-1 (dated June 17, 2005), attached to this Testimony as Exhibit JPK-11. The Merging Parties may suggest that the analyses provided in response to PPL's interrogatory are inaccurate and should be ignored due to the fact that import limitations are based on data which were applicable prior to the integration of Allegheny Power into PJM. These arguments should not be accepted. The transmission system facilities that connect AP to PJM Classic have not been modified. In fact, PJM continues to separately report a transmission interface limitation for the western interface downstream of the interconnection points with AP (see above); the numerical value of this import limitation continues and has not materially changed since the addition of AP.

²³ The observed screen failures would be more elevated under the Merging Parties' Original Proposal. This also does not correct for other problems with Applicants' analysis which will be discussed below.

1 **III.B Proposed Virtual Divestiture**

2 **Q: WILL THE PROPOSED VIRTUAL DIVESTITURE ADEQUATELY**
3 **MITIGATE THE MERGED ENTITY'S ABILITY TO EXERCISE MARKET**
4 **POWER?**

5 A: No. As far as merger mitigation is concerned, contracts for sale of power cannot
6 reasonably be expected to replicate the benefits of actual ownership of divested
7 assets. In particular, the Merging Parties' virtual divestiture proposal does not
8 provide reasonable assurance that the merged entity's incentives to exercise market
9 power will not be enhanced after the merger. As I explain below, this is due to the
10 uncertain nature of the contractual instruments that would be relied upon to achieve
11 the virtual divestiture under the Applicants' revised and original proposals, and the
12 fact that the operations of the nuclear facilities will remain under the control of the
13 merged entity.

14 **Q: PLEASE EXPLAIN YOUR UNDERSTANDING OF THE CONTRACTUAL**
15 **APPROACH PROPOSED BY THE MERGING PARTIES.**

16 A: The Merging Parties have proposed that 2,600 MW of baseload nuclear capacity be
17 virtually divested,²⁴ and that this proposed "virtual divestiture" will occur through
18 either of two forms: (1) firm long-term sales contracts for a term that expires no later
19 than 15 years following the close of the transaction or through a swap of assets with
20 owners of generation facilities located outside of the PJM footprint, or (2) an annual

²⁴ 2,400 MW will be divested in PJM East, while 200 MW will be divested in the larger PJM Pre-2004 region.

1 auction of three-year firm entitlements to baseload energy in 25 MW blocks.²⁵ In
2 particular, in relation to the three-year firm entitlements, an auction process will be
3 undertaken whereby one-third of the auction amount will be sold for one year
4 forward, one-third will be sold for two years forward, and one-third will be sold for
5 three years forward.²⁶ Thereafter, during each future year, one-third of the virtually
6 divested capacity will be auctioned off again for a three-year term. Thus, the pricing
7 for a portion of the virtually divested capacity will change each year.

8 **Q: HAVE YOU CONSIDERED HOW THIS DIVESTITURE PROPOSAL MIGHT**
9 **WORK PRACTICALLY?**

10 **A:** Yes. I think it is quite plausible that there will be limited, if any, interest in
11 purchasing this virtually divested capacity for a term of 15 years – especially given
12 that no rights to control the plant accompany the contracted-for energy. Moreover,
13 *given the absence of detail in the proposal as to what criteria would be used to*
14 *differentiate between the revenues associated with a long-term sale and the revenues*
15 *that may result from shorter-term sales, it is difficult to know with certainty what will*
16 *occur when the auctions are completed. As I understand the virtual divestiture*
17 *proposal, all virtually divested capacity that is not sold for a 15-year term will then be*
18 *sold in auctions for terms of three years forward. Thus, based on the foregoing*
19 *conditions and for the purposes of my analysis herein, I am assuming that it is more*

²⁵ Hieronymus Prepared Direct Testimony, Exhibit WHH-1 at 7-8.

²⁶ Exelon Corporation, Public Service Enterprise Group Incorporated, Docket No. EC05-43-000, Joint Application for Approval of Merger, Prepared Directed [*sic*] Testimony of Frank Cassidy on behalf of Applicants at 12 (filed Feb. 4, 2005).

1 likely that the shorter-term product will be attractive to buyers, and I assume that
2 long-term sales will be a small fraction of the total “virtual” divestiture amount.

3 **Q: WHAT DO YOU SEE AS THE COMPETITIVE IMPLICATIONS OF THE**
4 **PROPOSED VIRTUAL DIVESTITURE?**

5 A: My concern arises from the fact that the proposed virtual divestiture will not result in
6 the transfer of control of the nuclear facilities to the owners of the contracts. I believe
7 that this fact, combined with the expected repeated auctions for three-year forward
8 sales of “virtually” divested capacity, can create incentives for the merged entity to
9 discover means for affecting near-term forward market electricity prices. For
10 example, by controlling the nuclear units, the Merging Parties can reasonably be
11 expected to exert substantial control over unit availability. Thus, when nuclear units
12 are out on maintenance, the Merging Parties retain control over when units return to
13 service. Moreover, the Merging Parties will be able to affect maintenance planning.
14 While the Merging Parties now offer up a group-oversight type of system, it remains
15 the case that the capacity at issue is *nuclear*, and strong reasons can exist for not
16 pushing for the return of a unit to service in the face of any party’s – including, here,
17 the owner’s – reservations about re-starting. Finally, following the transaction, the
18 merged entity will control considerably more capacity in the relevant geographic
19 markets, creating greater incentives for monopolistic withholdings of supply than
20 exist currently.

21 Strategies of monopolistic conduct are readily apparent. Thus, for example,
22 withholding mid-merit supplies in conjunction with, or as opposed to, nuclear plants
23 as the next round of nuclear power contracting comes due might credibly be used to

1 signal prospects of higher going-forward prices, thereby increasing the demand for
2 and prices of power sold under “virtual divestiture” nuclear contracts.²⁷ Note, I am
3 not implying nefarious designs on the part of the current Merging Parties. Rather,
4 competition analysis properly concerns itself with incentives that can emanate from a
5 merger, even if unanticipated by merging parties at the time of their combining of
6 assets.

7 **Q: HAVE YOU CONSIDERED THE IMPACT OF VIRTUAL DIVESTITURE**
8 **TURNING OUT TO BE INEFFECTIVE?**

9 **A:** Yes. Exhibit JPK-5 shows the data presented by Dr. Hieronymus, but treating the
10 nuclear divestiture as ineffective as a means of merger mitigation. For the purposes
11 of the Exhibit, I have deducted the nuclear virtual divestiture amounts from
12 “divested” assets to display the importance of the Merging Parties’ request that the
13 regulatory authorities “trust” in the effectiveness of the proposed virtual divestiture.
14 As the Exhibit shows, particularly during lower market price periods, the
15 effectiveness of the nuclear divestiture is critical to ensuring that screening violations
16 are eliminated.²⁸ Screen failures are severe when the virtual divestiture of nuclear
17 facilities is ineffective as merger mitigation.

²⁷ Note that such impacts of going-forward contract prices for “virtually divested” nuclear power are not discouraged by contractual terms that require the seller to replace any non-delivery that may occur during the current term of a proposed virtual divestiture contract.

²⁸ Exhibit JPK-4 also shows the impact on the PJM Classic market using the analysis Dr. Hieronymus provided in response to PPL’s Interrogatory 9b.

III.C Financial Transmission Rights (“FTRs”)

Q: TURNING NOW TO THE ISSUE OF COMPETITION FROM IMPORTS INTO A RELEVANT MARKET, WHAT DO YOU FIND INADEQUATE ABOUT DR. HIERONYMUS’ HANDLING OF FTRS?

A: Dr. Hieronymus inappropriately ignores the importance of FTRs in his analysis. FTRs are, in effect, import rights that give an owner the ability to take generation at a particular source outside of a particular market area and “sink,” or deliver, it at a different point or zone on the system. The Merging Parties have preferential access to FTRs through grandfathered rights, as well as access through the auction and sale of non-grandfathered FTRs. Coupled with combined Exelon-PSEG post-merger ownership of a considerable quantity of low-cost generation sources outside the congested PJM East relevant geographic market, the consideration of FTRs and associated control over imports into PJM East is of critical relevance.

Dr. Hieronymus relies on the so-called “squeeze down” method for allocating control over imports. This approach essentially allocates import rights on a pro-rata basis based on economic generation located outside of a region, rather than in accord with parties’ import rights into that region. As a result, the “squeeze down” approach misrepresents actual holdings of import rights and can distort the results of the analysis.

Q: PLEASE EXPLAIN THE MERGING PARTIES’ POSITION REGARDING FTRS.

1 A: The Merging Parties claim: "It is not possible to perform a useful analysis of FTRs in
2 PJM," and they suggest that since FTRs have a duration of one year, FTRs need not
3 be considered in the market power analyses.²⁹ Additionally, the Applicants note that
4 FTRs "are sold at auction, are potentially convertible from Auction Revenue Rights
5 ("ARRs"), and are actively traded on the secondary market."³⁰ Thus, the Applicants
6 suggest that FTRs are not relevant for the analysis of the Application. Yet, the facts
7 that the Merging Parties are holders of grandfathered import rights and can participate
8 as competitors in primary auction and secondary transactions for such rights make
9 consideration of FTR holdings highly relevant to a proper merger analysis.

10 Q: **IS IT, IN FACT, POSSIBLE TO PERFORM A USEFUL ANALYSIS OF FTRS**
11 **IN PJM?**

12 A: Yes. PJM provides detailed FTR ownership information on its website. This
13 information includes datasets for the results of annual and monthly auctions starting
14 in 2003 up to and including the recently completed annual auction for 2005-2006
15 FTRs.³¹ These datasets are a rich source of information that not only indicate the
16 prices and number of MWs of import rights that clear for each product, but also
17 include identities of successful bidders and the source-sink pairing for each FTR.
18 Because of this readily available rich source of data and the relevance of FTRs in

²⁹ Hieronymus Supplemental Testimony at 17-18.

³⁰ *Id.* at 18. Note that ARR are made available to those companies in PJM that have historically been owners of the transmission system. In effect, utilities that use, and continue to use, generation to serve load in the original PJM footprint have grandfathered rights whereby they are able to obtain ARRs prior to the running of the FTR auctions. They can then use the ARRs to preferentially obtain FTRs in the annual auctions.

1 markets such as PJM East, the Merging Parties' analysis has not considered readily
2 available information that warrants additional investigation.

3 **Q: WHY ARE FTRS RELEVANT TO THE MARKET POWER ANALYSES IN**
4 **THIS CASE?**

5 **A:** In this instance, the Merging Parties own generation sources on both sides of the PJM
6 eastern interface. PJM East is a key relevant geographic market in the analysis. PJM
7 East includes most of PECO's service territory, and portions of Metropolitan Edison's
8 and PPL's service territories. Exelon and PSEG own 3,600 MW and 1,900 MW of
9 capacity, respectively, on the western side of the eastern interface.³² As such, they
10 are viable importers into PJM East. As I have noted, examining FTR ownership
11 provides information on the Merging Parties' current and future ability to import its
12 combined generation of 5,500 MW west of the eastern interface without incurring
13 congestion costs.

14 Importantly, when we examine actual holdings of FTRs we find that the
15 Merging Parties control large amounts of FTRs sinkable into PJM East and, hence,
16 the supply of imports into PJM East. For example, Exhibits JPK-6a and 6b show the
17 results of the annual auction for FTRs just completed in May 2005 for 2005-2006
18 FTRs. The products illustrated in Exhibits JPK-6a and 6b are on-peak and off-peak

³¹ Note that FTR ownership data are available as far back as 1999, before the implementation of the annual auction.

³² See In the Matter of the Joint Petition of Public Service Electric and Gas Company and Exelon Corporation for Approval of a Change in Control of Public Service Electric and Gas Company and Related Authorizations, NJ Board of Pub. Utils. Docket No. EM05020106, OAL Docket No. PUC-1874-05, Direct Testimony of Rodney Frame on behalf of Public Service Electric and Gas Company, Exhibits RF-3 and RF-4 (filed Feb. 28, 2005).

1 FTRs that sink into PJM East from sources located outside of PJM East. As Exhibits
2 JPK-6a and 6b show, the Merging Parties control over 40% of the on-peak and off-
3 peak FTRs (more than 3,000 MW in each case). Given that these FTRs allow Exelon
4 and PSEG to “sink” their lower-cost generation into PJM East, they allow the
5 Merging Parties an advantage that should be evaluated in the market power analyses
6 to ensure a thorough examination of the merger’s competitive impacts.

7 **Q: DOES THE FACT THAT FTRS DO NOT HAVE A DURATION OF MORE**
8 **THAN ONE YEAR MAKE IT INAPPROPRIATE TO CONSIDER THEM IN**
9 **A COMPETITIVE ANALYSIS?**

10 **A:** No. In markets, such as electricity, where seasonal and idiosyncratic conditions of
11 tight supply may allow individual dominant sellers to elevate prices through
12 noncompetitive bidding and withholding strategies, there may be sufficient threat of
13 harm to consumer welfare to raise significant public policy concerns even if the FTRs
14 themselves have a duration of less than one year. Moreover, while FTRs may not last
15 longer than one year, the grandfathered rights the Merging Parties retain in the annual
16 auction are linked to generation and persist year after year unless specific generation
17 is divested. Because the Merging Parties will retain a certain set of generating assets
18 to which grandfathered rights adhere, the merged entity will have access to a
19 considerable quantity of grandfathered FTRs year after year. Non-grandfathered
20 FTRs acquired via the annual auction and/or secondary market transactions will also
21 be available to the Merging Parties in both the with-merger and without-merger
22 possible futures. The merger will put such FTRs into a single entity. Doing so

1 implies increased concentration of sellers of power into congested-area “sinks”
2 (relative to the world without the merger).

3 **Q: HOW DO THE AUCTION REVENUE RIGHTS AFFECT THE ANALYSIS OF**
4 **FTRS?**

5 **A:** The existence of ARRs does not in any way prohibit an analysis of FTRs. PJM’s
6 transmission rights allocation system allows certain companies to obtain rights
7 consistent with historical investments in the regional transmission system.
8 Companies may use those rights to obtain revenue via either sales of rights in the
9 annual auction or self-scheduling and converting those rights into FTRs. As was
10 illustrated in Exhibits JPK-6a and 6b, the Merging Parties consistently – and in very
11 significant volumes – convert those rights into FTRs, as witnessed by the amount the
12 Merging Parties are obtaining.

13 **Q: WHAT ARE THE IMPLICATIONS OF FTR HOLDINGS FOR THE**
14 **ANALYSIS OF THE FERC’S MARKET CONCENTRATION SCREENS?**

15 **A:** The FTR role is significant. In the 2004-2005 annual auction, FTRs for the Mid-
16 Atlantic region alone netted \$362 million in revenue.³³ Buyers are thus revealing the
17 considerable value FTRs provide in allowing them to move low-cost power into
18 higher-cost locations.

19 The data on PJM’s annual FTR auction can be employed to examine
20 quantitatively how Dr. Hieronymus’ delivered price tests change when we consider
21 actual import right ownership (as opposed to Dr. Hieronymus’ “squeeze down”

³³ PJM 2004 SOM at 260.

1 approach). I have conducted such an analysis for PJM East. Rather than using a
2 squeeze down allocation for imports that ignores FTR ownership, I have distributed
3 FTRs to owners based on the results of the PJM annual auction for 2005-2006.³⁴
4 Substituting these allocations of imports for Dr. Hieronymus' allocations in his
5 workpapers results in the Merging Parties' having considerably greater control over
6 imports than reported by Dr. Hieronymus. Exhibit JPK-7 presents the implications of
7 this for the analysis of the FERC's HHI screens.

8 As the Exhibit shows, using actual FTR holdings to allocate imports to
9 generators results in a pre-merger PJM East market concentration that is considerably
10 higher than indicated by Dr. Hieronymus. After taking into account proposed
11 divestiture under the Merging Parties' revised proposal, the post-merger mitigated
12 market is more concentrated, and the HHI changes generally violate the FERC's
13 screens. In eight of ten cases, increases of 200-300 points are revealed using a more
14 appropriate allocation of imports into PJM East. Since the original proposal of the
15 Merging Parties entails less divestiture, corresponding results for that proposal can
16 only indicate even more severe screen violations.

17 **Q: HAVE YOU EXAMINED THE CUMULATIVE IMPACT OF BOTH**
18 **INEFFECTIVE VIRTUAL DIVESTITURE AND FTR ALLOCATION ON**
19 **THE MARKET CONCENTRATION ANALYSES?**

³⁴ To conduct my analysis, I used Dr. Hieronymus' workpapers to his Supplemental Testimony to determine for each market price level the amount of generation that passes the delivered price test for PJM East. I then assume the import allocation in accordance with FTR holdings, subject to the 7,300 MW import limit.

1 A: For the PJM East marketplace, the data allow us to assess the impact of both
2 ineffective virtual divestiture and FTR allocation on the screening analysis. Exhibit
3 JPK-8 shows the results for the case of the Merging Parties' revised merger and
4 mitigation proposal. Screening failures are significantly elevated, even after
5 considering mitigation (i.e., in each instance failures are several hundred HHI points).
6 As above, the results would be even more severe under the Merging Parties' original
7 proposal, with its lower levels of proposed divestiture. The implication is that even
8 with the more "generous" divestiture of the revised proposal, the proposed mitigation
9 is inadequate. This holds, *per* Exhibit JPK-7, even if the virtual divestiture of nuclear
10 capacity is treated as fully effective as a mitigation device.

11 **III.D Market Price Levels**

12 **Q: YOU NOTED ABOVE THAT YOU ALSO HAVE CONCERNS AS TO DR.**
13 **HIERONYMUS' SELECTION OF THE MARKET PRICE LEVEL AT**
14 **WHICH TO CONDUCT THE SCREENING ANALYSIS. COULD YOU**
15 **EXPLAIN YOUR CONCERNS?**

16 A: In his Supplemental Testimony, Dr. Hieronymus has indicated that his market price
17 level determinations are ostensibly somewhat arbitrary as their selection is "as much
18 an art as it is a science."³⁵ Thus, instead of conducting his delivered price tests at
19 market price levels that are consistent with recently observed prices in PJM, he argues
20 that examining a wide range of price levels across all seasons analyzed ought to be

³⁵ Hieronymus Supplemental Testimony at 18.

1 sufficient.³⁶ In addition, Dr. Hieronymus indicates that he has calibrated his assumed
2 market prices to match fuel inputs, although I note that this calibration process is not
3 readily apparent in his workpapers. Although Dr. Hieronymus has offered additional
4 commentary on price level determination, he has not explained why the price levels
5 used in his analysis do not appear to be consistent with recently observed prices. Nor
6 does Dr. Hieronymus adequately explain how it is appropriate to use one set of
7 market prices to analyze all three relevant geographic markets. Exhibit JPK-2 shows
8 that that on average there is a measurable price spread where PJM East realizes higher
9 market prices. Thus, it is also appropriate to run the analysis recognizing that the
10 price levels are not the same for all markets.

11 **Q: PLEASE ADDRESS DR. HIERONYMUS' FURTHER EXPLANATIONS OF**
12 **HIS MARKET PRICE LEVEL DETERMINATIONS.**

13 **A:** Dr. Hieronymus argues that by capturing a range of price levels, the analysis
14 represents a full range of results. However, as demonstrated in Exhibit JPK-9, his
15 selected price levels are inconsistent with observed market prices, especially during
16 off-peak periods. He has defined an approach for determining his range of price
17 levels, but his price level range does not agree with relevant price levels recently
18 observed in PJM. For example, Dr. Hieronymus analyzes off-peak price levels that
19 are consistently lower than those prices observed in the market (\$20/MWh shoulder,
20 \$25/MWh summer, and \$30/MWh winter). As demonstrated in Exhibit JPK-9, actual
21 average off-peak prices calculated in accordance with Dr. Hieronymus' approach

³⁶ Id.

1 have recently ranged from \$30-\$39/MWh. Because different generating units are
2 marginal during different times of the year, it is important that the market price levels
3 accurately assess the likely generation dispatch on a seasonal basis. Arguing that
4 across seasons all price levels are captured does not appropriately ensure that the
5 unique supply mixture available during each particular season is properly accounted
6 for in the analysis.

7 **III.E On the Knife-Edge**

8 **Q: ARE THERE OTHER ASPECTS OF THE MERGING PARTIES'**
9 **COMPETITIVE IMPACT ANALYSIS THAT REQUIRE ADDITIONAL**
10 **REVIEW?**

11 **A:** Yes. The effectiveness of the proposed mitigation is sensitive to underlying input
12 assumptions that determine which generating assets are considered in the market for a
13 particular price level. Given the importance of the mitigation to the Merging Parties'
14 application, it is critical that the effectiveness of the mitigation be established prior to
15 considering the application, especially in light of indications that the Merging Parties,
16 once merged, will create additional regulatory requirements that are currently not
17 being triggered.

18 **Q: PLEASE EXPLAIN HOW UNDERLYING INPUT ASSUMPTIONS CAN**
19 **IMPACT THE EFFECTIVENESS OF THE MITIGATION.**

20 **A:** As I describe above, the Merging Parties' mitigation has been quite precisely
21 designed so that it eliminates screen failures in all relevant time periods. In
22 particular, the Merging Parties have indicated that in the mid-merit variable cost
23 range of required divestitures, 550 MW of coal-fired capacity must be divested, and

1 that in this same variable cost range (mid-merit), 1,200 MW must be economic at
2 \$55/MWh. Because the merger is permanent and irreversible, however, there must be
3 a high degree of confidence that the units ultimately divested will be able to deliver
4 the expected mitigation. For the mitigation to be effective as competitive discipline,
5 care must be taken to examine whether and to what extent any limitations on the
6 efficiency and/or cost of operation of divested assets may inhibit them from being
7 effective competitors. Examination below reveals that certain mitigation-eligible
8 units (see Exhibit J-12 of Hieronymus Prepared Direct Testimony) may have variable
9 cost characteristics that preclude the regulatory authorities from relying on their
10 divestiture as a satisfactory approach.

11 Q: **CAN YOU PROVIDE AN EXAMPLE?**

12 A: Yes. Exhibits JPK-10a and 10b provide an example of how a very minor change in
13 an underlying input assumption associated with a particular generating unit can affect
14 the effectiveness of the proposed divestiture. The Exhibit provides examples for both
15 the PJM East and the PJM Pre-2004 relevant geographic markets. In each instance a
16 particular focus is on the impact of the Merging Parties' requirement that 1,200 MW
17 of the divested capacity be economic at \$55/MWh. An examination of Dr.
18 Hieronymus' workpapers reveals that the large, gas-fired Bergen Units (~1,200 MW)
19 operate at projected variable costs very close to \$55/MWh based on what appears to
20 be an invariant 2006 gas price of \$6.55/MMBTU.³⁷ Exhibits JPK-10a and 10b show

³⁷ See Hieronymus Workpapers to his Prepared Direct Testimony, CD 1\Workpapers\Vertical and Horizontal Market Power Analysis\Data Inputs\Generation. Additionally, the fuel pricing assumptions included with these generation input data indicate gas prices do not vary by season, which is unusual.

1 the implications if these units were ultimately divested to support the elimination of
2 screening violations, but turned out to be uneconomic at \$55/MWh. "Uneconomic"
3 here is taken to be variable costs that turn out to be but 5% higher than Dr.
4 Hieronymus' assumption of \$55/MW. This might occur for any number of reasons,
5 ranging from poorer-than-assumed thermal efficiency to natural gas contracts to the
6 operator that turn out to be only slightly more costly than for others.³⁸

7 Because Dr. Hieronymus' analysis walks the knife-edge of purportedly
8 sufficient divestiture, it turns out that a minor increase in the variable operating costs
9 of the Bergen Units would exclude them from the economic supply below the
10 \$55/MWh level, causing the mitigation to be insufficient to allow the merger to pass
11 the FERC screens. As Exhibit 10a shows, even modest error in Dr. Hieronymus'
12 assumptions on Bergen Unit variable costs results in the realization of screen failures
13 by increasing the HHI change by more than 200 points compared to the Merging
14 Parties' analysis. Exhibit 10b shows a similar, although less pronounced, impact for
15 the PJM Pre-2004 market.

16 The same impact can result at a slightly lower-than-assumed price level
17 relative to variable costs. Assuming, for example, that a coal unit like Eddystone was
18 slightly uneconomic relative to prevailing prices, it then becomes inadequate

³⁸ In his Supplemental Testimony, Dr. Hieronymus criticizes this example and claims that if fuel prices were higher than what he calculates, then the market price would increase "by the same amount" so that the Bergen Units would remain economic and in the market. Hieronymus Supplemental Testimony at 18-19, 24. However, the analysis here is offered to illustrate the impact of even slightly overoptimistic assessment of the variable costs of knife-edge units relative to all other units in Dr. Hieronymus' analysis.

1 mitigation at a particular price level, rendering the divestiture ineffective.³⁹ Exhibits
2 10a and 10b similarly show that this result holds in the PJM East and PJM Pre-2004
3 markets. Thus, the extent to which the mitigation is effective is very sensitive to
4 which units are ultimately divested and their relative efficiencies.

5 **Q: IS THIS CAUSE FOR CONCERN?**

6 **A:** Yes. Given the reliance of the merger application on extensive, precise mitigation,
7 the PaPUC can only be assured that any resulting adverse competitive impacts are
8 eliminated by determining the actual mitigation prior to considering the Merging
9 Parties' application. Moreover, in the event that divested assets turn out to be
10 relatively less efficient than assumed by Dr. Hieronymus, there is a well-founded
11 need to increase the amount divested by some amount (likely the same amount
12 consistent with permitting all buyers to participate in the asset auctions, as discussed
13 below, such that this minor change resolves both these issues) to ensure that the
14 prospect of adverse competitive impacts is eliminated. In this way, the proposed
15 mitigation will be sufficiently robust to accommodate modest and reasonably
16 expected deviations from assumed market and plant conditions.

17 **Q: ARE THERE ADDITIONAL UNDESIRABLE IMPACTS OF THE**
18 **PROPOSED RESTRICTIONS ON WHO COULD BUY DIVESTED ASSETS?**

19 **A:** Yes. The proposed buyer restrictions will likely lower the value the Merging Parties
20 obtain from the divested assets by prohibiting buyers firmly established in the market

³⁹ Moreover, in this instance, the assumed low price levels for off-peak time periods may also affect the effectiveness of the proposed mitigation by causing various of the Merging Parties' coal-fired units to be excluded as economical supply (see below).

1 from having an option to purchase. Any efficiencies that these buyers could bring to
2 bear on these assets through their purchase will be forgone as a result of allowing the
3 merger application to stand as filed. Moreover, the outcome of allowing this
4 approach could be to suppress the future competitiveness of the marketplace, which is
5 contrary to the policy goals associated with evaluating mergers. As the DOJ/FTC
6 Merger Guidelines recognize, numerous attributes beyond HHIs affect the actual
7 vigor of competition in a marketplace. In the present context, particular purchasers of
8 divested assets that already have a presence in the region may well be able to
9 demonstrate that their expanded capacity will result in more rivalry in the
10 marketplace as a result of factors such as the distribution of excess capacity, the mix
11 of baseload and load-following capacity, the efficiency of operations, and so on.

12 **III.F Three-Pivotal Supplier Test**

13 **Q: ARE THERE ADDITIONAL CONSIDERATIONS ASSOCIATED WITH THE**
14 **PROPOSED MITIGATION'S EFFECTIVENESS THAT WARRANT**
15 **CONSIDERATION?**

16 **A:** Yes: The newly formed entity post-merger, post-mitigation will clearly control the
17 largest amount of generating capacity in PJM, and in particular in the PJM East
18 region. Thus, it is likely that PJM's recently adopted three-pivotal supplier market
19 power mitigation (offer-capping) regime will be invoked more often than originally
20 conceived given the merged entity will control considerably more market share
21 following the merger. This would represent an undesirable move toward regulation-
22 determined, rather than market-driven, pricing right at a time when public policy is
23 aimed at expanding reliance on the latter to protect the public interest. Once again, it

1 is likely that a modest amount of additional mitigation would lower the likelihood
2 that the merged entity will face PJM's new offer-capping regime currently being
3 implemented.

4 **III.G Buyer Restrictions**

5 **Q: DO YOU HAVE CONCERNS ABOUT THE MERGING PARTIES'**
6 **PROPOSED BUYER RESTRICTIONS IN THE CASE THE FERC INITIATES**
7 **A HEARING?**

8 **A:** Yes. These restrictions are unnecessary and inconsistent with sound economic
9 policy. Although the proposed buyer restrictions may permit the Merging Parties to
10 be able to argue that they can eliminate the screening violations, in this instance the
11 restrictions predetermine the post-merger marketplace structure, and portend an
12 inefficient divestiture by excluding several buyers that already operate assets in the
13 PJM marketplace. In a market setting in which the combination of public policy and
14 market dynamics does, in fact, protect competition, the party able to realize the
15 greatest efficiency in owning and operating a divested asset can be expected to be the
16 winning bidder for that asset. The reason lies in the nature of competition: With
17 competition protected overall, a winning bidder in a divestiture auction would expect
18 the merger to have no adverse impact on market prices of electricity in any relevant
19 markets. With prices thus determined by competitive market forces, the value
20 generated from owning and operating a divested asset and justifying bidding for that
21 asset must arise from the expected difference between price and cost. The party able
22 and willing to bid the most, therefore, will be the party that sees the greatest prospect

1 for holding down cost (i.e., for being most efficient) or getting more output per given
2 unit of cost.

3 **Q: IS THERE EVIDENCE THAT EXCLUDED BUYERS WOULD, IN FACT, BE**
4 **LIKELY TO BE THE EFFICIENT ACQUIRERS OF DIVESTED ASSETS?**

5 **A:** Yes. One of the prospective buyers that the Merging Parties propose to exclude from
6 participating in the divestiture auction is PPL, and I have best access to PPL
7 information. It is certainly a strong possibility that PPL could end up the most
8 efficient acquirer of certain divested assets – strong enough to allow the marketplace
9 to make that determination, rather than having the Merging Parties pre-judge PPL’s
10 efficiency by excluding PPL from the market for divested assets.

11 Notwithstanding this observation, I should stress the propriety of allowing the
12 market for divested assets to ultimately answer the question of who is best positioned
13 to own and operate divested assets most efficiently. I have no doubt that companies
14 other than PPL feel that they are efficient and likely to be the most efficient acquirers
15 of divested assets. The value of allowing the marketplace to work out the answer to
16 the question of acquirer efficiency is that such a matter is inherently poorly answered
17 by the regulator through adversarial litigation or central planning. At the very least, it
18 is poor policy, unlikely except by happenstance to accord with the market’s judgment,
19 to have the Merging Parties make the judgment as to who should, and who should
20 not, have an opportunity to demonstrate their capacity to translate efficiencies into
21 winning bids.

1 **IV. CONCLUSIONS**

2 **Q: PLEASE SUMMARIZE YOUR CONCLUSIONS.**

3 **A:** I find the Merging Parties' proposal and competitive analyses to be inadequate for
4 concluding that the proposed merger with mitigation will allow competitive
5 conditions post-merger to go unharmed. I find the proposal to be deficient by: not
6 analyzing all relevant geographic markets; inappropriately relying on virtual
7 divestiture as an effective means of mitigating incentive of merged entity to exercise
8 market power; disregarding the important ownership rights the Merging Parties obtain
9 through their FTRs; using market price levels that are not analytically substantiated;
10 walking the knife-edge for passing relevant regulatory screens; and imposing buyer
11 restrictions that predetermine the post-merger marketplace structure. These
12 inadequacies are not merely of theoretical interest since in one case – the
13 consideration of the relevant PJM Classic market – the Merging Parties' witness has
14 conducted an analysis which reveals serious competitive screen failures resulting
15 from the proposed merger and mitigation.

16 **Q: DOES THIS CONCLUDE YOUR TESTIMONY?**

17 **A:** Yes.

A-110550F0160

PPL STATEMENT NO. I-SR

JK

9-22-05

phila

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Joint Application of PECO Energy)
Company and Public Service Electric)
and Gas)
Company for Approval of the Merger)
of Public Service Enterprise Group)
Incorporated With and Into Exelon)
Corporation)

Docket No. A-110550F0160

DOCKETED
NOV 1 0 2005

SURREBUTTAL TESTIMONY OF
JOSEPH P. KALT, Ph.D.
ON BEHALF OF THE PPL COMPANIES
August 26, 2005

**DOCUMENT
FOLDER**

Responding to the Rebuttal Testimony of William H. Hieronymus and to
the Commissioners' Directed Questions

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SECRETARY'S BUREAU

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1 **I. INTRODUCTION AND SUMMARY**

2 **Q: ON WHOSE BEHALF IS YOUR TESTIMONY SUBMITTED?**

3 A: My testimony is submitted on behalf of PPL Electric Utilities Corporation; PPL
4 EnergyPlus, LLC; PPL Brunner Island, LLC; PPL Holtwood, LLC; PPL
5 Martins Creek, LLC; PPL Montour, LLC; PPL Susquehanna, LLC; PPL
6 University Park; and Lower Mount Bethel Energy, LLC (collectively, the “PPL
7 Companies” or “PPL”).

8 **Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

9 A: I have been asked by the PPL Companies to respond to the Rebuttal Testimony filed
10 by Dr. William H. Hieronymus on behalf of PECO Energy Company (“PECO”) and
11 Public Service Electric and Gas Company (“PSE&G”) (collectively the “Merging
12 Parties”) before the Pennsylvania Public Utility Commission (“PaPUC” or
13 “Commission”) in support of the Merging Parties’ application for consideration of
14 their merger proposal.¹ I have also been asked to evaluate and respond to the
15 Commissioners’ Directed Questions that were submitted in this Docket on July 15,
16 2005.²

¹ Joint Application of PECO Energy Company and Public Service Electric and Gas Company for Approval of the Merger of Public Service Enterprise Group Incorporated With and Into Exelon Corporation, Docket No. A-110550F0160, Joint Application of PECO Energy Company and Public Service Electric and Gas Company (filed Feb. 4, 2005), PECO Statement No. 3R, Rebuttal Testimony of William H. Hieronymus (filed July 29, 2005) (“Hieronymus Rebuttal Testimony”).

² Joint Application of PECO Energy Company and Public Service Electric and Gas Company for Approval of the Merger of Public Service Enterprise Group Incorporated With and Into Exelon Corporation, Docket No. A-110550F0160, “Directed Questions” (July 15, 2005).

1 Q: PLEASE SUMMARIZE YOUR FINDINGS.

2 A: First, I note that, subsequent to the filing of my Direct Testimony in this proceeding,
3 the Federal Energy Regulatory Commission (“FERC”) approved the Merging Parties’
4 supplemental (as opposed to original) merger proposal without setting the application
5 for hearing.³ As a result of the FERC’s action, the Merging Parties’ supplemental
6 proposal is now the object of review in this proceeding. In issuing its order approving
7 the supplemented merger proposal, the FERC appears to have ignored significant
8 issues that are now being explored at length in this proceeding, as well as in a
9 companion proceeding being conducted in New Jersey. Additionally, the record
10 before the FERC, which was fully available to the U.S. Department of Justice
11 (“DOJ”), was apparently not sufficient for the DOJ to conclude its investigation; the
12 DOJ has thus issued an extensive Civil Investigative Demand to the PJM
13 Interconnection, L.L.C. (“PJM”) related to the merger.⁴ From the perspective of
14 sound public policy, the FERC’s approval – made without the benefit of full
15 discovery and an evidentiary hearing – is inadequate due to factual issues that remain
16 unresolved. Fortunately, these can now be examined with care in the PaPUC’s
17 proceeding.

18 As I explain herein, the analysis of the Merging Parties’ expert Dr. William H.
19 Hieronymus continues to employ various key assumptions that materially impact the
20 results of his competitive screening analysis, but which require verification and

³ *Exelon Corp.*, 112 FERC ¶ 61,011 (2005) (“July 1 Order”).

⁴ See Exhibit JPK-12.

1 modification if the PaPUC is to base its findings on firm ground. Specifically, Dr.
2 Hieronymus' Rebuttal Testimony does not remedy any of the analytical deficiencies
3 or erroneous assumptions identified in my Direct Testimony.⁵

4 Significantly, the Merging Parties' supplemental proposal continues to rely on
5 mitigation in the form of "virtual divestiture" as a proposed antidote to the
6 prospective adverse effects of the merger on market competitiveness. Dr.
7 Hieronymus' screening analysis treats this proposed mitigation as if it were actual
8 divestiture. Yet, the proposed virtual divestiture falls short of actual ownership
9 transfer and, in this context, does not ensure that the proposed merger will not harm
10 market competitiveness. Given the large quantity of generation facilities (both
11 nuclear and fossil) that will be owned and operated by the merged entity if the
12 supplemental proposal is approved, I find that the merger's tendency to increase
13 incentives to exercise market power by, for example, strategic withholding of fossil
14 fuel plants is not adequately offset through virtual divestiture.

15 I find, also, that Dr. Hieronymus does not offer any analysis that responds to
16 the concerns I have expressed regarding relevant geographic market definitions and
17 control of financial transmission rights ("FTRs"). In attempting to rebut the

⁵ In my Direct Testimony I also outlined the initial concerns I had regarding generator variable cost assumptions and their potential to impact the effectiveness of the proposed fossil fuel unit divestitures. The FERC's approval of the Merging Parties' supplemental proposal, which specifies additional divestiture of fossil fueled generating units, ameliorates concerns about that issue. Joint Application of PECO Energy Company and Public Service Electric and Gas Company for Approval of the Merger of Public Service Enterprise Group Incorporated With and Into Exelon Corporation, Docket No. A-110550F0160, PPL Statement No. 1, Direct Testimony of Joseph P. Kalt, Ph.D. on behalf of the PPL Companies (filed June 28, 2005) ("Kalt Direct Testimony").

1 competitive concerns that emanate from each of these issues, he fails to provide
2 affirmative evidence that they can be ignored in an examination of the proposed
3 merger's implications for the public interest. A more in-depth review of these issues,
4 which acknowledges and incorporates the potential adverse competitive impacts of
5 certain variations in Dr. Hieronymus' underlying analytical assumptions, is necessary
6 for the Commission to conduct a comprehensive, meaningful review of the Merging
7 Parties' merger application.

8 **Q: WHAT ARE YOUR CONCLUSIONS WITH RESPECT TO THE**
9 **COMMISSIONERS' DIRECTED QUESTIONS?**

10 A: I have examined the Commissioners' Directed Questions and conclude that it would
11 not be sound public policy for the Commonwealth of Pennsylvania
12 ("Commonwealth") to use the occasion of the merger application as a means of trying
13 to employ its powers to compel modification of the merger so as to engender special
14 economic benefits for certain interests within the Commonwealth. As I explain
15 below, if there is good reason to be concerned on competition or efficiency grounds
16 that the merger proposal as it is currently constituted poses the prospect of harm to
17 the public interest, then approval of that proposal should be withheld and the
18 Commonwealth's powers should be focused on protecting the public interest by
19 preventing or curing such harm. On the other hand, if the Commonwealth reaches the
20 conclusion that the merger as proposed does not threaten the public's interest in
21 competition and efficiency, then it is poor public policy to withhold approval and use
22 the Commonwealth's powers to compel or induce the Merging Parties to offer special
23 concessions to certain interests within the Commonwealth. Such attempts at

1 extracting concessions from investors distort the Commonwealth's economy (in this
2 case, toward reliance on energy-intensive industry and consumption patterns to the
3 extent the Commonwealth extracts promises of below-market, subsidized power from
4 the Merging Parties) and are deleterious to the Commonwealth's reputation in capital
5 markets. To the extent that the PaPUC has the authority to resolve ongoing specific
6 problems at Philadelphia Gas Works, it should use that authority to work directly with
7 the company to better the situation. Opportunistically using the merger application to
8 try to create near-term, narrowly focused economic benefits will result in longer-term
9 price distortions and send inappropriate signals to the capital markets.

10 **II. THE MERGING PARTIES' ANALYSES CONTINUE TO**
11 **PROVIDE AN INADEQUATE BASIS FOR REVIEW OF THE**
12 **MERGER APPLICATION**

13 **II.A Dr. Hieronymus Does Not Rebut The Fact That, As A Result Of The**
14 **Merger As Proposed And Even With The Virtual Divestiture Of**
15 **Nuclear Units, The Merged Entity Is Likely To Have Increased**
16 **Incentives To Exercise Market Power.**

17 **Q: WHY IS CAREFUL CONSIDERATION OF THE NUCLEAR VIRTUAL**
18 **DIVESTITURE PROPOSAL CRITICAL?**

19 **A:** As I have demonstrated in my Direct Testimony, the nuclear virtual divestiture
20 proposal is critically important to the Merging Parties' case, as it is necessary to
21 ensure that the competitive impact screens are passed. As the Merging Parties have
22 indicated on numerous occasions, a primary driver for the merger is the combination
23 of the companies' nuclear assets. Given that nuclear plants are the most productive
24 generators of electricity, any means by which prices realized by these facilities can be

1 increased will significantly increase earnings for the merged entity. Thus, the extent
2 to which the proposed merger will increase the *incentive* to withhold generating
3 capacity to increase prices and earnings must be carefully evaluated.⁶

4 The Merging Parties' own expert, Dr. Hieronymus, acknowledges the
5 importance of considering all generating units when evaluating the incentive to
6 withhold capacity in order to exercise market power. For example, while averring
7 that withholding nuclear plant output can create high opportunity costs, Dr.
8 Hieronymus acknowledges that the incentive exists to withhold the output from other
9 facilities as the benefits of higher prices will be realized by all plants owned by an
10 entity that is able to deliver in the relevant geographic market.⁷ To the extent the
11 Merging Parties' virtual divestiture proposal does not effectively eliminate all
12 incentives associated with the continued ownership of the nuclear plants, the merger
13 screening results are inaccurate.

⁶ As Dr. Hieronymus admits, the purchasers of the virtually divested capacity will have no say in how the nuclear units are run, the scheduling of maintenance, or whether output will be increased or decreased. Joint Application of PECO Energy Company and Public Service Electric and Gas Company for Approval of the Merger of Public Service Enterprise Group Incorporated With and Into Exelon Corporation, Docket No. A-110550F0160, Deposition of William H. Hieronymus, Tr. at 115-16 (Aug. 17, 2005) ("Hieronymus Dep. Transcript"), relevant portions attached as Exhibit JPK-13.

⁷ *Id.* at 77-78.

1 **Q: ASSUMING THAT THE VIRTUAL DIVESTITURE PROPOSAL**
2 **OSTENSIBLY ELIMINATES THE ABILITY OF THE MERGED ENTITY TO**
3 **PROFIT FROM WITHHOLDING VIRTUALLY DIVESTED ENERGY, WHY**
4 **IS THERE CAUSE FOR CONCERN?**

5 A: Companies that own large portfolios of generating plants, as would be the case with
6 the merged entity if the merger as currently constituted is approved, have an incentive
7 to consider a variety of unilateral profit-maximizing strategies that could lead to
8 increased earnings if certain actions are taken. Even if withholding the output from
9 nuclear plants is unlikely, as the Merging Parties have asserted, withholding the
10 output from other, more flexible plants is certainly possible. Again, as I have stated
11 in my Direct Testimony, I am not asserting that the merged entity currently has such
12 intentions, but proper economic analysis of likely merger impacts must treat the
13 merged entity as a rational, profit-maximizing entity. In this case, the merged entity
14 will be the largest generation company in the PJM Classic and PJM East markets, and
15 future management must be considered as being cognizant of opportunities for the
16 use of strategies that can increase earnings. Thus, it is appropriate and critical that
17 the PaPUC carefully consider the effectiveness of the virtual divestiture proposal.

18 **Q: HOW IS IT POSSIBLE THAT, EVEN WITH VIRTUAL DIVESTITURE, THE**
19 **MERGED ENTITY COULD PROFIT FROM AN ANTI-COMPETITIVE**
20 **STRATEGY?**

21 A: Given the quantity of generating resources that the merged entity would continue to

1 control in relevant markets, the incentive to withhold power (and thus artificially
2 inflate prices) could be acted upon even with virtual divestiture.⁸ In particular, as I
3 described in my Direct Testimony, all available indications are that the merged entity
4 will be offering much of the virtually divested nuclear energy at recurring annual
5 auctions of revolving three-year contracts, as opposed to entering into long-term
6 contracts for five, ten, or fifteen years.⁹ Given that these auctions will be recurring,
7 as much as one-third of the virtually divested nuclear energy will be up for sale each
8 year. The rational merged entity naturally will consider how the pricing of these
9 forward sales could be improved. Thus, the incentive to consider the potential to
10 increase forward prices prior to an annual auction will logically be impacted by the
11 merged entity's continued ownership of the nuclear facilities, and the possibility of
12 withholding supplies from fossil fuel facilities so as to strengthen prices in forward
13 markets in which nuclear energy will be repeatedly auctioned.

14 Dr. Hieronymus does not dispute that this incentive exists, but he claims it
15 requires the Merging Parties to "be willing to incur short-term costs for the dubious
16 possibility of higher long-term profits."¹⁰ However, in this instance, it need not be as
17 Dr. Hieronymus suggests, that any withholding must carry on for three years, or that

⁸ Dr. Hieronymus does not testify that the incentive does not exist, but instead that no showing has been made that a withholding strategy would be profitable. Hieronymus Rebuttal Testimony at 35-38. In fact, Dr. Hieronymus agrees that ownership of nuclear units represents a clear incentive to withhold, regardless of whether the nuclear units themselves are withheld. *See* Merging Parties' Response to Interrogatory OCA-V-6, attached as Exhibit JPK-14.

⁹ Kalt Direct Testimony at 19-21 (describing the auction process).

¹⁰ Hieronymus Rebuttal Testimony at 37.

1 the energy withheld must be nuclear.¹¹ Fossil fuel facilities could be withheld and
2 benefits could be obtained by simply elevating the next month or two's forward
3 prices at the time of the auction. In fact, these auctions are not sufficiently long-term
4 in order for such near-term forward prices to have no bearing on the offers received
5 by the merged entity for its nuclear contracts. Regardless of how the merged entity
6 specifies the pricing for offers to purchase the virtually divested energy (e.g., yearly,
7 monthly, levelized for three years, etc.), the entities that participate in the auctions
8 can be expected to carefully incorporate currently reported wholesale electricity
9 forward prices and supply projections into their offers. To the extent near-term
10 forward prices can be strategically increased by the merged entity, the price for the
11 virtually divested capacity, which could be 900 MW every year, will be elevated as
12 well – and will be captured in the recurring annual auctions by the merged entity. On
13 the other hand, if the nuclear assets were actually divested, as the PPL Companies
14 urge, the incentives for strategic supply withholding by the merged entity would be
15 considerably diminished because it would no longer be able to capture any given
16 induced increases in forward prices on the substantial quantity of power represented
17 by the indicated nuclear capacity; someone else (i.e., the owner of the actually
18 divested nuclear capacity) would capture the benefit of such price increases.

¹¹ *Id.*

1 Q: WHAT ARE THE IMPLICATIONS OF YOUR ANALYSIS FOR THE
2 PaPUC'S REVIEW OF THIS MERGER APPLICATION?

3 A: Appropriate public policy for merger review must consider the merged entity's post-
4 merger incentives to exercise market power. This means that one must not ignore the
5 underlying profit maximization strategies that post-merger management can
6 implement. Because the merger cannot, realistically, be unwound once
7 consummated, it is essential that the PaPUC evaluate these strategies, whether or not
8 they are presently intended or contemplated by current management. The only means
9 by which the PaPUC can be sure that these strategies will not be profitable for the
10 post-merger entity is if much, if not all, of the virtual divestiture is replaced by real
11 asset sales.

12 **II.B Dr. Hieronymus' Rebuttal Of My Contention That PJM Classic**
13 **Must Be Considered A Relevant Geographic Market Does Not**
14 **Address The Findings Presented In My Direct Testimony.**

15 Q: WHAT IS THE IMPORTANCE OF ANALYZING THE PJM CLASSIC, OR
16 MID-ATLANTIC, MARKET?

17 A: The screening analysis submitted by the Merging Parties reveal that the merger
18 actually has considerably more trouble passing the screening tests for the larger PJM
19 Pre-2004 relevant geographic market than for PJM East.¹² As I have shown, analysis
20 of PJM Classic indicates that even higher HHI changes than those calculated for the

¹² When divestiture is taken into account, the reported HHI changes for PJM East are lower than the HHI changes reported for PJM Pre-2004. Thus, the mitigation is more effective in PJM East.

1 PJM Pre-2004 market can occur in PJM Classic depending on who acquires the
2 divested (including virtually divested) assets.¹³

3 The reason for these results is readily apparent: the PJM Pre-2004 market
4 includes the Allegheny Power System (“APS”), and Dr. Hieronymus’ analysis
5 assumes that APS is able to supply all of its generating capacity into the “classic”
6 Pennsylvania/New Jersey/Maryland region without constraint. Including APS’s
7 supplies in the screening analysis increases the supply in the market, thereby
8 lowering the Merging Parties’ combined market share. Proper examination of PJM
9 Classic, however, requires the Merging Parties to treat APS-owned generation as
10 competing for scarce transmission imports. This decreases APS’s presence in the
11 market, and correspondingly decreases the amount of competing generation that is
12 not affiliated with the Merging Parties. Thus, if a slightly smaller geographic market
13 like PJM Classic is examined, the Merging Parties have a larger market share – an
14 outcome that materially impacts the results of the screening analysis. Clearly,
15 knowing the sensitivity of the screening analysis to the relevant geographic market
16 assumption is important when reviewing the merger application.

17 **Q: WHAT IS DR. HIERONYMUS’ EXPLANATION OF HIS APPROACH FOR**
18 **DEFINING RELEVANT GEOGRAPHIC MARKETS FOR THIS ANALYSIS?**

19 **A:** Dr. Hieronymus argues that his relevant geographic market selections are supported
20 by PJM’s management of western interface constraints.¹⁴ Notwithstanding

¹³ Kalt Direct Testimony at 19.

1 protestations to the effect that PJM *tries* to avoid congestion that restricts APS power
2 from accessing PJM Classic, the fact remains that substantial price differences exist
3 at the APS/PJM Classic interface.¹⁵ It is clear that APS power is constrained, at
4 material times, in its ability to compete in PJM Classic.¹⁶ Thus, PJM Classic clearly
5 warrants consideration as a relevant geographic market. Dr. Hieronymus' rebuttal
6 does not reply meaningfully to my testimony.

7 Dr. Hieronymus suggests that average price differentials shown in Exhibit
8 JPK-2 of my Direct Testimony may indicate that PEPCO is isolated at times from the
9 rest of PJM, and notes that FE Penelec and APS are interconnected.¹⁷ To the extent
10 FE Penelec and APS are interconnected, and thus collectively able to be considered

¹⁴ Hieronymus Rebuttal Testimony at 22-23, 25; *see also* Joint Application of PECO Energy Company and Public Service Electric and Gas Company for Approval of the Merger of Public Service Enterprise Group Incorporated With and Into Exelon Corporation, Docket No. A-110550F0160, Exhibit WHH-2, Supplemental Testimony and Exhibits of William H. Hieronymus on behalf of Exelon Corporation (filed May 27, 2005) at 32-33 ("Hieronymus Supplemental Testimony").

¹⁵ *See* Kalt Direct Testimony at 14-15. Dr. Hieronymus places a great deal of emphasis on the fact the PJM can re-dispatch generation facilities to manage constraints, such as the Bedington-Black Oak constraint between APS and PJM. Hieronymus Rebuttal Testimony at 25. He and I do not dispute this fact. *See* Hieronymus Dep. Transcript at 37 (agreeing with Dr. Kalt that the Bedington-Black Oak line is the most constrained interface in PJM). However, Dr. Hieronymus ignores the consequences of re-dispatch, which, as I noted in my Direct Testimony, are to call on more expensive units on the high-price side of the constraint. Kalt Direct Testimony at 16. *See also* Hieronymus Dep. Transcript at 31 (admitting that re-dispatch generally involves higher prices on the downstream side of the interface). Re-dispatching more expensive units on the high-price side of the constraint is not evidence supporting a single geographic market where supply from APS is able to discipline prices in PJM Classic. To the contrary, the evidence indicates that higher prices are sustained on the eastern side of the western interface.

¹⁶ Exhibit JPK-2 in my Direct Testimony presents this information. Dr. Hieronymus appears to misinterpret the arrows in this exhibit. Hieronymus Rebuttal Testimony at 24. The arrows drawn between zones do not depict transmission interconnections. Rather, they simply indicate the direction from lower to higher prices.

¹⁷ Hieronymus Rebuttal Testimony at 24.

1 combined when both are lower-priced relative to the eastern side of the western
2 interface, it may well be the case that any generation located north of the APS service
3 territory – primarily what Dr. Hieronymus calls PJM Far West in Exhibit J-6 to his
4 Original Testimony – should also be considered outside of PJM Classic. As I have
5 indicated, the zone depictions I have employed are associated with PJM price-
6 reporting protocol that uses historic zones as aggregation points. However, intention
7 has been to focus on the western interface. Thus, to the extent there is, at times, a
8 relevant geographic market even smaller than PJM Classic (that is, excluding
9 generation in the FE/Penelec zone as well as the APS zone), this should be
10 considered separately.¹⁸

11 **II.C Dr. Hieronymus Inappropriately Dismisses FTR Ownership As A**
12 **Relevant Consideration For The Analysis Of The Allocation Of**
13 **Imports Into PJM East.**

14 **Q: HOW DOES DR. HIERONYMUS RESPOND TO YOUR ANALYSIS OF**
15 **FTRs?**

16 **A:** Dr. Hieronymus mischaracterizes my analysis of FTRs. I do not claim that FTRs
17 provide physical import rights.¹⁹ Instead, I indicate that having FTRs, “in effect,”
18 allows the holder preferential access enabling the holder to “sink” generation from a
19 point outside PJM East (such as PJM’s western hub) to within PJM East.²⁰ As Dr.

¹⁸ Additionally, Dr. Hieronymus has not suggested any reason why the PEPCO zone would be considered separately. Hieronymus Rebuttal Testimony at 24.

¹⁹ Hieronymus Rebuttal Testimony at 20-21.

²⁰ Kalt Direct Testimony at 24.

1 Hieronymus admits, FTRs allow a holder to financially hedge any congestion costs
2 that may exist, in this instance, between PJM’s western hub and PJM East.²¹ Thus,
3 FTR holders are able to ensure that their costs are predictable when buying power
4 outside of PJM East to meet their obligations within PJM East. This ability to hedge
5 against congestion costs directly affects an FTR holder’s ability to compete
6 effectively in PJM East, and thus has a direct impact on the overall competitiveness
7 of that market. Because the Merging Parties have preferential access to significant
8 quantities of FTRs, they compete, in effect, as if their generation resources located
9 outside PJM East were actually located in PJM East. During times of interface
10 congestion, would-be sellers with resources in the west, but lacking FTRs, are
11 effectively precluded as effective competitors in the east.

12 **Q: PLEASE EXPLAIN WHAT YOU MEAN BY “PREFERENTIAL ACCESS”**
13 **TO FTRS.**

14 **A:** The PJM Open Access Transmission Tariff provides a means by which so-called
15 “network service users” (primarily load-serving entities, “LSE”) may request auction
16 revenue rights (“ARRs”) in relation to the load they serve using network service.²²
17 Load-serving entities in a zone may elect ARR that source from a list of generators
18 that existed in 1998, and sink at the distributed load in the zone, up to the LSE’s

²¹ Hieronymus Dep. Transcript at 63-64.

²² For a precise description of how the grandfathering process works, *see* PJM Interconnection, L.L.C., FERC Electric Tariff, Sixth Revised Volume No. 1, Attachment K – Appendix, Section 7.4.2.

1 prorated share of the load in the zone. While ARR's entitle their holder to receive a
2 share of the revenue from the annual PJM auction of FTRs, they also can be "self
3 scheduled," i.e., converted into an FTR along the same source/sink path as the
4 ARR.²³ Because the Merging Parties own generation west of the PJM East constraint
5 that has historically (as of 1998) been used to serve load in PJM East, they are in a
6 position to match this generation with their self-scheduled FTRs and are hedged
7 against congestion charges when moving that generation into PJM East. To the
8 extent the merged entity will continue to serve relevant load, preferential rights
9 (ARRs) are available that will allow the merged company to obtain these financial
10 hedges with considerable certainty. Exelon's large number of FTRs is an indication
11 that they likely convert their ARR's to FTRs. Certainly, given Exelon's historic use of
12 transmission to serve their large PJM East load from pre-1998 generation, this
13 strategy has been available to them. There is no reason to believe that, going
14 forward, the merged entity will not continue to do so as well.

15 **Q: ASSUMING THAT ARRS ARE CONVERTED BY PECO INTO FTRS, HOW**
16 **CAN THE FTRS THEN BE USED BY PECO?**

17 **A:** As an example, PECO holds FTRs that inject (source) power at the Three Mile Island
18 and Peach Bottom nuclear unit buses and deliver (sink) power in the PECO service
19 territory. By holding these rights, PECO can schedule an injection of power in PJM
20 west of the eastern interface and a companion delivery into its service territory.

²³ See, e.g., Hieronymus Dep. Transcript at 65-66 (acknowledging that ARR's can be converted to FTRs, if there is a source available, or sold).

1 Although there is no physical right or path whereby the power is necessarily
2 delivered over the transmission system to PECO's service territory (although some of
3 the generation surely reaches its service territory), financially PECO's costs for this
4 transaction are predictable (as Dr. Hieronymus notes at page 20 of his Rebuttal
5 Testimony) and enable it, in economic effect, to compete on the congested side of the
6 affected interface. When competing and pricing power for future delivery into PJM
7 East, PECO can take into account the merged entity's generation located outside PJM
8 East.

9 **Q: HOW DO YOU RESPOND TO DR. HIERONYMUS' ASSERTION THAT,**
10 **BECAUSE FTRS ONLY HAVE A ONE-YEAR TERM, THEY ARE**
11 **IRRELEVANT TO THE MERGER ANALYSIS?**

12 A: Dr. Hieronymus' assertion that there is no way to forecast future FTR ownership, and
13 therefore there is no need to evaluate the Merging Parties' current holdings of FTRs
14 (which do expire annually) in the context of this merger proposal, ignores the reality
15 of the underlying grandfathering process by which the Merging Parties obtain vast
16 quantities of their FTRs.²⁴ Despite years of retail competition in the Commonwealth,
17 PECO continues to serve more than 90% of the load in its service territory under
18 capped rates as a provider of last resort.²⁵ As a result, PECO can reasonably count on

²⁴ Hieronymus Rebuttal Testimony at 21-22.

²⁵ Pennsylvania Public Utility Commission, *Electric Power Outlook for Pennsylvania, 2003-2008*
(Aug. 2004), at 38, available at
http://www.puc.state.pa.us/general/publications_reports/pdf/EPO_2004.pdf.

1 receiving a significant amount of ARRs (which are then convertible into FTRs, as
2 discussed above) each year. The FTRs that link generation located west of the
3 eastern constraint are part of the means by which it serves its load at predictable
4 costs. Absent the sale of generation assets located west of the eastern interface,
5 PECO and PSE&G will likely continue to have grandfathered rights to ARRs
6 (convertible to FTRs) for years into the future.²⁶ Without evidence that they will no
7 longer continue to serve substantial load in PJM East, the Merging Parties' current
8 holdings of FTRs, and thus their effective ability to import into PJM East, must be
9 considered in the merger analysis.

10 **Q: ARE THERE OTHER REASONS IT IS APPROPRIATE TO CONSIDER**
11 **FTRS IN THE MERGER ANALYSIS?**

12 **A:** FTRs play an essential role in energy markets such as PJM East and clearly
13 contribute to the Merging Parties' presence in the marketplace. Unlike Dr.
14 Hieronymus' portrayal, they are not mere financial instruments unrelated to the
15 competitive functioning of energy markets. They therefore must be considered in a
16 merger analysis, particularly when (as I demonstrated) the Merging Parties control
17 over 40% of the PJM East market.²⁷ Whether the Merging Parties control 1 MW of
18 generation within PJM East or hold a 1 MW FTR that sources from the western hub

²⁶ Although the New Jersey basic generation service auctions impact PSE&G load-serving obligations, PSE&G has continued to retain various levels of obligation over the years, and the merged entity will have an incentive to carefully consider its ability to request ARRs.

²⁷ See Kalt Direct Testimony, Exhibit JPK-6a.

1 and sinks into PJM East, a price increase in PJM East benefits the Merging Parties
2 equally in both cases. Thus, as Dr. Hieronymus admits, FTRs create a strong
3 *incentive* for the Merging Parties to withhold, as both their generation and their FTRs
4 will increase in value from such withholding.²⁸ Accounting for this incentive in the
5 competitive screen analyses is essential and, unlike Dr. Hieronymus' hypothetical *pro*
6 *rata* allocations of import capability, is a far better method by which to obtain an
7 accurate picture of marketplace competition.

8 III. COMMISSIONERS' DIRECTED QUESTIONS

9 Q: WHAT ARE THE "DIRECTED QUESTIONS" OF THE COMMISSIONERS?

10 A: The Commissioners requested that the following additional questions (matters) be
11 addressed in this proceeding:

12 1. Neighboring states have availed themselves of opportunities to enhance
13 their economic competitiveness through access to economical energy
14 resources. What opportunities exist from this proposed merger in terms of
15 economic development for Pennsylvania? Specifically, does this proposed
16 merger present us with an opportunity to strengthen the State's ability to
17 remain competitive during periods of economic recession and volatile energy
18 pricing?

19 2. The innovative and controversial nuclear "virtual divestiture" component
20 of the FERC decision appears to present intriguing opportunities for the
21 Commonwealth. Does the proposed merger present this Commission with an
22 opportunity to create an additional economic development program designed
23 to improve Pennsylvania's business climate by creating strategic partnerships
24 with the public and private sector [*sic*] that support product development and
25 the use of energy-efficient technologies?

²⁸ See Hieronymus Dep. Transcript at 72-73, 78.

1 3. Would it be possible to set aside 10% or some relatively small share of the
2 “virtually” divested generation to augment economic development and
3 economic competition within the Commonwealth? For example, could the
4 parties consider and comment on creating a pool of energy and capacity of at
5 least 260 MWs which could be used at the discretion of the Secretary of the
6 Department of Community and Economic Development to attract and retain
7 business in the Commonwealth?

8 4. Could the Commonwealth through one of its agencies and/or in
9 conjunction with a licensed Electric Generation Supplier facilitate the use of
10 the output of this generation?

11 5. Would the combination of the PSE&G gas division with the PECO gas
12 division and the Philadelphia Gas Works provide critical mass for a viable,
13 profitable, shareholder owned public utility, assuming a revenue stream from
14 off system sales from an LNG facility, and separate resolution of the problem
15 of a billion dollar debt?

16 **Q: PLEASE EXPLAIN YOUR UNDERSTANDING OF THE COMMISSIONERS’**
17 **CONCERNS.**

18 **A:** It appears clear that the Commissioners are interested in determining if it is possible
19 to use the merger proposal as a means for creating a particular economic benefit for
20 the Commonwealth. The first four questions describe an interest in obtaining rights
21 to the output from the Merging Parties’ nuclear generation plants, while the fifth
22 envisions the consideration of an even more expanded gas supply company than
23 would result from the merger (and apparently suggests the potential for a jointly
24 owned LNG facility). I am concerned that affirmative answers to the proposed
25 questions will likely introduce deleterious distortions into the Commonwealth’s
26 economy.

27 **Q: WHAT ARE YOUR CONCERNS?**

28 **A:** I believe that sound public policy answers the Directed Questions in the negative.
29 From an economic perspective, while it is appropriate that the Commonwealth focus

1 on the health of its economy, subsidizing the use of one particular resource – electric
2 energy – by particular politically acceptable users is actually contrary to the goal of a
3 healthy state economy. Research into industry location decisions finds no support for
4 the proposition that variations in energy prices are significant determinants of plant
5 location or employment growth.²⁹ In this case, if it had any effect, below-market
6 pricing of electricity would not be expected to generate *net* increases in jobs and
7 economic activity for Pennsylvania. Rather, subsidized pricing of power for favored
8 industries would tend to shift the Commonwealth’s economy toward electric-
9 intensive development at the expense of less electric-intensive industries that
10 compete for the labor, land, and other resources that expansion of favored electric-
11 intensive industries would garner.

12 As the Directed Questions themselves note, we live in a time of notably
13 volatile energy prices. Such volatility implies that increasing dependence on energy-
14 intensive industries (*e.g.*, electric energy-intensive industries) is unwise management
15 of the Commonwealth’s portfolio of industries and employers. In fact, the very
16 reforms that the Commonwealth has adopted in the electric power sector have been
17 designed to foster a system in which market forces set electric prices so that market
18 forces can determine choices of the users of electric power.

19 This is wise policy, for the kind of social engineering and economic planning
20 that seeks to select who should be using power and in what quantities is a vain effort

²⁹ See, *e.g.*, Michael Wasylenko, “Taxation and Economic Development: The State of the Economic Literature,” *New England Economic Review*, March/April 1997, at 37-52.

1 if the goal is to foster a healthy state economy. Time and time again, across country
2 after country, state after state, we find that, if a government is to foster economic
3 development, its attention is most effectively devoted to ensuring a stable and
4 consistent rule of law, providing necessary political, legal, and physical
5 infrastructure, and implementing an efficient tax and public expenditure system that
6 maintains a level, and competitive, economic playing field.³⁰

7 To the extent that the PaPUC has authority to resolve ongoing specific
8 problems at Philadelphia Gas Works, it should use that authority to work directly
9 with the company to better the situation. If the PaPUC determines that the merger as
10 proposed poses threats to the competitiveness and/or efficiency of relevant electric
11 power markets, it should not approve the merger as proposed, and it should employ
12 its powers to work to protect the public interest by preventing or curing threats to
13 competition and/or efficiency before approving any merger. If, on the other hand, the
14 PaPUC determines through this proceeding that the merger as proposed does not
15 portend harm to competition or efficiency, it should reject the entreaties of
16 intervenors and approve the merger. Beyond that, conditioning the merger's approval
17 on extractions of concessions from the merging parties and their investors distorts the
18 Commonwealth's economy and sends a negative signal to the capital markets about
19 dealing with Pennsylvania. As so many nations and other political jurisdictions that

³⁰ See the Nobel Prize-winning work of Douglass C. North in, e.g., *Institutions, Institutional Change, and Economic Performance* (Cambridge University Press, 1990).

1 struggle with economic development seem to have such difficulty learning, myopia
2 that ignores these effects is the path to economic underdevelopment.

3 **Q: DOES THIS CONCLUDE YOUR TESTIMONY?**

4 **A: Yes.**

PPL ~~PL~~
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Ford Foundation Professor of International Political Economy, 1992 - present

Areas of specialization include Industrial Organization, Economics of Antitrust and Regulation, Natural Resource Economics, Public Choice and Political Economy, Microeconomic Theory.

Member, Standing Committee on Higher Degrees in Political Economy and Government, 2002 - present

Faculty Chair, Interfaculty Initiative, Harvard University Native American Program, 2000 - present

Co-Director, The Harvard Project on American Indian Economic Development, 1987 - present

Chair, Economics and Quantitative Methods Cluster, 1995 - 2000

Professor of Political Economy, 1986 - 1992

Faculty Chair and Academic Dean for Research, 1992 - 1994

Chairman, Environment and Natural Resources Program, Center for Science and International Affairs, 1990 - 1994

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Assistant Director for Natural Resources, Energy and Environmental Policy Center, 1985 - 1990

Co-Director, Harvard Study on the Future of Natural Gas Policy (with Frank C. Schuller), Energy and Environmental Policy Center, John F. Kennedy School of Government, 1984 - 1986

LEXECON INC, AN FTI COMPANY (AND PREDECESSOR CONSULTING ENTERPRISES)

Senior Economist, 2003 - present (and since 1983 with predecessor enterprises)

DEPARTMENT OF ECONOMICS, HARVARD UNIVERSITY, CAMBRIDGE, MA

Associate Professor of Economics, 1983 - 1986

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Taught Economics of Antitrust and Regulation, Intermediate Microeconomics, and Principles of Economics.

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PRESIDENT'S COUNCIL OF ECONOMIC ADVISERS, WASHINGTON DC
Junior Staff Economist, 1974 - 1975

Analyzed federal energy, environmental, transportation, and tax policies.

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University of California, Los Angeles

Ph.D. in Economics, 1980

Dissertation: "Federal Control of Petroleum Prices: A Case Study of the Theory of Regulation"

M.A. in Economics, 1977

Stanford University, Stanford, CA

B.A. in Economics, 1973

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The First Nations Governance Act: Implications of Research Findings from the United States and Canada (with Stephen Cornell and Miriam Jorgensen), Report to the British Columbia Assembly of First Nations, July 2002.

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"Means-Testing Indian Governments: Taxing What Works" (with Jonathan Taylor), in Richard C. Monk, ed., *Taking Sides: Race and Ethnicity*, McGraw-Hill/Dushkin, 2001.

"Where's the Glue? Institutional and Cultural Foundations of American Indian Economic Development" (with Stephen Cornell), *The Journal of Socio-Economics*, vol. 29, 2000.

"Open Access for Railroads? Implications for a Non-Hub, Congestible Network Industry" (with Amy B. Candell), Advanced Workshop in Regulation and Competition, Center for Research in Regulated Industries, May 2000 (unpublished working paper).

"What Tribes Can Do: An Interview with Joseph P. Kalt," *American Indian Report*, March 1999.

"Sovereignty and Nation-Building: The Development Challenge in Indian Country Today" (with Stephen Cornell), *The American Indian Culture and Research Journal*, vol. 22, no. 3, February 1999.

"Making Research Count in Indian Country: The Harvard Project on American Indian Economic Development" (with Manley A. Begay, Jr., and Stephen Cornell), *Journal of Public Service and Outreach*, vol. 3, no. 1, Spring 1998.

"Successful Economic Development and Heterogeneity of Governmental Form on American Indian Reservations" (with Stephen Cornell), in Merilee S. Grindle, ed., *Getting Good Government: Capacity Building in the Public Sector of Developing Countries*, Harvard University Press, 1997.

"Cultural Evolution and Constitutional Public Choice: Institutional Diversity and Economic Performance on American Indian Reservations" (with Stephen Cornell), Faculty Research Working Paper Series, John F. Kennedy School of Government, January 1995; reprinted in John Lott, ed., *Uncertainty and Economic Evolution: Essays in Honor of Armen A. Alchian*, Routledge Press, 1997.

"Regulatory Reform and the Economics of Contract Confidentiality: The Example of Natural Gas Pipelines" (with A. B. Jaffe, S. T. Jones, and F. A. Felder), *Regulation*, 1996, No. 1.

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"Introduction: The New World of Gas Regulation" (with Jerry Ellig), J. Ellig and J. P. Kalt, eds., *New Directions in Natural Gas Deregulation*, Greenwood Press, 1995.

"Incentive Regulation for Natural Gas Pipelines" (with Adam B. Jaffe), in J. Ellig and J. P. Kalt, eds., *New Directions in Natural Gas Deregulation*, Greenwood Press, 1995.

"Where Does Economic Development Really Come From? Constitutional Rule Among the Modern Sioux and Apache" (with Stephen Cornell), *Economic Inquiry*, Western Economic Association International, Vol. XXXIII, July 1995, pp. 402 - 426.

"Insight on Oversight" (with Adam B. Jaffe), *Public Utilities Fortnightly*, April 1995.

"The Redefinition of Property Rights in American Indian Reservations: A Comparative Analysis of Native American Economic Development" (with Stephen Cornell), L. H. Legters and F. J. Lyden, eds., *American Indian Policy: Self-Governance and Economic Development*, Greenwood Press, 1994.

"Reloading the Dice: Improving the Chances for Economic Development on American Indian Reservations" (with Stephen Cornell), in J. P. Kalt and S. Cornell, eds., *What Can Tribes Do? Strategies and Institutions in American Indian Economic Development*, University of California, 1992, pp. 1 - 59.

"Culture and Institutions as Public Goods: American Indian Economic Development as a Problem of Collective Action" (with Stephen Cornell), in Terry L. Anderson, ed., *Property Rights and Indian Economies*, Rowman and Littlefield, 1992.

"The Regulation of Exhaustible Resource Markets" (with Shanta Devarajan), Environmental and Natural Resources Program, Center for Science and International Affairs, Kennedy School of Government, April 1991.

"Comment on Pierce," *Research in Law and Economics*, Vol. 13, 1991, pp. 57-61.

"Pathways from Poverty: Economic Development and Institution-Building on American Indian Reservations" (with Stephen Cornell), *American Indian Culture and Research Journal*, 1990.

"The Apparent Ideological Behavior of Legislators: Testing for Principal-Agent Slack in Political Institutions" (with Mark A. Zupan), *Journal of Law and Economics*, April 1990.

"How Natural Is Monopoly? The Case of Bypass in Natural Gas Distribution Markets" (with Harry G. Broadman), *Yale Journal on Regulation*, Summer 1989.

"Culture and Institutions as Collective Goods: Issues in the Modeling of Economic Development on American Indian Reservations" (with Stephen Cornell), *Project Report*, Harvard Project on American Indian Economic Development, June 1989.

"Public Choice, Culture and American Indian Economic Development" (with Stephen E. Cornell), *Project Report*, Harvard Project on American Indian Economic Development, July 1988.

"The Political Economy of Protectionism: Tariffs and Retaliation in the Timber Industry," in R. Baldwin, ed., *Trade Policy Issues and Empirical Analysis*, University of Chicago Press, 1988.

"The Impact of Domestic Environmental Regulatory Policy on U.S. International Competitiveness," *International Competitiveness*, A.M. Spence and H.A. Hazard, eds., Ballinger Publishing Co., 1988.

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"Natural Gas Policy in Turmoil" (with Frank C. Schuller), in J. P. Kalt and F. C. Schuller, eds., *Drawing the Line on Natural Gas Regulation: The Harvard Study on the Future of Natural Gas Policy*, Greenwood-Praeger Press/Quorum Books, 1987.

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"American Indian Gaming Policy and Its Socio-Economic Effects: A Report to the National Gambling Impact Study Commission" (with Stephen Cornell, Matthew Krepps, and Jonathan Taylor), July 31, 1998.

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"Incentives and Taxes: Improving the Proposed BTU Tax and Fostering Competition in Electric Power Generation," Harvard University and The Economics Resource Group, Inc., March 10, 1993.

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"The Redefinition of Property Rights in American Indian Reservations: A Comparative Analysis of Native American Economic Development," *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, June 1987

"A Review of the Adequacy of Electric Power Generating Capacity in the United States, 1985 - 93 and 1993-Beyond" (with James T. Hamilton and Henry Lee), *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, June 1986.

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"Old Gas Decontrol, FERC's Block Billing for Pipelines, and the Winners and Losers in Natural Gas Policy," prepared for the Natural Gas Supply Association (NGSA), December 1985.

"Possibilities for Competition in the Gas Industry: The Roles of Market Structure and Contracts," prepared for Harvard Study on the Future of Natural Gas Policy, Working Group Meeting, October 1985.

"Natural Gas Decontrol, Oil Tariffs, and Price Controls: An Intertemporal Comparison," Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, April 1985.

"Market Structure, Vertical Integration, and Long-Term Contracts in the (Partially) Deregulated Natural Gas Industry," *Discussion Paper Series*, Harvard Institute of Economic Research, Harvard University, April 1985.

"Can a Consuming Region Win under Gas Decontrol?: A Model of Income Accrual, Trade, and Stockholding" (with Robert A. Leone), *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, February 1984.

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"Television Industry Self-Regulation: Protecting Children from Competition in Broadcasting" (with George J. Holder), Harvard Institute of Economic Research, Discussion Paper No. 896, April 1982.

"The Use of Political Pressure as a Policy Tool During the 1979 Oil Supply Crisis" (with Stephen Erfle and John Pound), *Discussion Paper Series*, John F. Kennedy School of Government, Harvard University, April 1981.

"Problems of Minority Fuel Oil Dealers" (with Henry Lee), *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, April 1981.

OTHER PUBLICATIONS AND LEGISLATIVE TESTIMONY

Statement to U.S. Senate Committee on Indian Affairs, *Lessons in Economic Development, Hearings Regarding International Lessons in Economic Development*, September 12, 2002 (hearings cancelled September 11, 2002); published in U.S. Senate Committee on Indian Affairs, *Forum on Establishing a Tribally Owned Development Corporation*, July 20, 2004.

"Institution Building: Organizing for Effective Management" in *Building Native Nations: Environment, Natural Resources, and Governance*, ed. by Stephanie Carroll Rainie, Udall Center for Studies in Public Policy, The University of Arizona, 2003.

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"American Indian Economic Development," *Tribal Pathways Technical Assistant Program Newsletter*, February 1997, p. 3.

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Statement to the Energy and Natural Resources Committee, U.S. Senate, *Government Responses to Oil Supply Disruptions*, Hearing of July 28 - 29, 1981, U.S. Government Printing Office, 1981, pp. 623-630 and 787-801.

"Staff Report on Effects of Restrictions on Advertising and Commercial Practice in the Professions: The Case of Optometry," Ronald S. Bond, et al., Executive Summary, Bureau of Economics, Federal Trade Commission, September 1980.

"Redistribution of Wealth in Federal Oil Policy," *San Diego Business Journal*, August 18, 1980, pp. 22-23.

"The Energy Crisis—Moral Equivalent of Civil War" (with Peter Navarro), *Regulation*, January/February 1980, pp. 41-43.

"Windfall Profits Tax Will Reap Bonanza—But For Whom?" (with Peter Navarro), *The Miami Herald*, December 23, 1979, editorial page.

SELECTED PRESENTATIONS

"Linking Tribal Sovereignty to Economic Self-Determination in Indian Country," *The Tribal Leaders Forum*, "Sovereignty in Crisis," Las Vegas, NV, May 27, 2005.

"The State of U.S. Railroads and the Challenges Ahead," briefing of Capitol Hill staff, Association of American Railroads, April 17, 2003.

"The State of the Railroad Industry and the Challenges Ahead," briefing of Roger Nober, Chairman, US Surface Transportation Board, Association of American Railroads, January 28, 2003.

"The Wealth of American Indian Nations: Culture and Institutions," Federal Reserve Bank of Boston, December 11, 2002.

"The Roots of California's Energy Crisis: Law, Policy, Politics, and Economics," Regulation Seminar, Center for Business and Government, Kennedy School, Harvard University, November 7, 2002.

"Public Policy Foundations of Nation Building in Indian Country," National Symposium on Legal Foundations of American Indian Self-Governance," Mashantucket Pequot Nation, February 9, 2001.

"Twenty-Five Years of Self-Determination: Lessons from the Harvard Project on American Indian Economic Development," Udall Center for Studies in Public Policy, University of Arizona, November 13 - 14, 1999.

Proceedings of the Fourth Annual DOE-NARUC Natural Gas Conference, Orlando, FL, February 1995.

Keynote Address, "Sovereignty and American Indian Economic Development," Arizona Town Hall, Grand Canyon, AZ, October 1994.

"Is the Movement Toward a Less-Regulated, More Competitive LDC Sector Inexorable?, (Re)Inventing State/Federal Partnerships: Policies for Optimal Gas Use," U.S. Department of Energy and The National Association of Regulatory Utility Commissioners Annual Conference, Nashville, TN, February 1994.

"Cultural Evolution and Constitutional Public Choice: Institutional Diversity and Economic Performance on American Indian Reservations," *Festschrift* in Honor of Armen A. Alchian, Western Economic Association, Vancouver, BC, July 1994.

"Precedent and Legal Argument in U.S. Trade Policy: Do they Matter to the Political Economy of the Lumber Dispute?" National Bureau of Economic

Research, Conference on Political Economy of Trade Protection, February, September 1994.

"The Redesign of Rate Structures and Capacity Auctioning in the Natural Gas Pipeline Industry," Natural Gas Supply Association, Houston, TX, March 1988.

"Property Rights and American Indian Economic Development," Pacific Research Institute Conference, Alexandria, VA, May 1987.

"The Development of Private Property Markets in Wilderness Recreation: An Assessment of the Policy of Self-Determination by American Indians," Political Economy Research Center Conference, Big Sky, MT, December 4 - 7, 1985.

"Lessons from the U.S. Experience with Energy Price Regulation," International Association of Energy Economists Delegation to the People's Republic of China, Beijing and Shanghai, PRC, June 1985.

"The Impact of Domestic Regulation on the International Competitiveness of American Industry," Harvard/NEC Conference on International Competition, Ft. Lauderdale, FL, March 7 - 9, 1985.

"The Welfare and Competitive Effects of Natural Gas Pricing," American Economic Association Annual Meetings, December 1984.

"The Ideological Behavior of Legislators," Stanford University Conference on the Political Economy of Public Policy, March 1984.

"Principal-Agent Slack in the Theory of Bureaucratic Behavior," Columbia University Center for Law and Economic Studies, 1984.

"The Political Power of the Underground Coal Industry," FTC Conference on the Strategic Use of Regulation, March 1984.

"Decontrolling Natural Gas Prices: The Intertemporal Implications of Theory," International Association of Energy Economists Annual Meetings, Houston, TX, November 1981.

"The Role of Government and the Marketplace in the Production and Distribution of Energy," Brown University Symposium on Energy and Economics, March 1981.

"A Political Pressure Theory of Oil Pricing," Conference on New Strategies for Managing U.S. Oil Shortages, Yale University, November 1980.

"The Politics of Energy," Eastern Economic Association Annual Meetings, 1977.

WORKSHOPS PRESENTED

Federal Reserve Bank of Boston; University of Indiana; University of Montana; Oglala Lakota College; University of New Mexico; Columbia University Law School; Department of Economics and John F. Kennedy School of Government, Harvard University; MIT; University of Chicago; Duke University; University of Rochester; Yale University; Virginia Polytechnic Institute; U.S. Federal Trade Commission; University of Texas; University of Arizona; Federal Reserve Bank of Dallas; U.S. Department of Justice; Rice University; Washington University; University of Michigan; University of Saskatchewan; Montana State University; UCLA; University of Maryland; National Bureau of Economic Research; University of Southern California.

OTHER PROFESSIONAL ACTIVITIES

Board of Trustees, The Communications Institute, 2003 - present

Board of Trustees, Fort Apache Heritage Foundation, 2000 - present

Mediator (with Keith G. Allred), Nez Perce Tribe and the North Central Idaho Jurisdictional Alliance, MOU signed December 2002

Mediator, *In the Matter of the White Mountain Apache Tribe v. United States Fish and Wildlife Service*, re: endangered species management authority, May - December, 1994

Steering Committee, National Park Service, 75th Anniversary Symposium, 1991 - 1993

Board of Trustees, Foundation for American Communications, 1989 - 2003

Editorial Board, *Economic Inquiry*, 1988 - 2002

Advisory Committee, Oak Ridge National Laboratory, Energy Division, 1987 - 1989

Commissioner, President's Aviation Safety Commission, 1987 - 1988

Principal Lecturer in the Program of Economics for Journalists, Foundation for American Communications, teaching economic principles to working journalists in the broadcast and print media, 1979 - present

Lecturer in the Economics Institute for Federal Administrative Law Judges, University of Miami School of Law, 1983 - 1991

Research Fellow, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, 1981 - 1987

Editorial Board, MIT Press Series on *Regulation of Economic Activity*, 1984 - 1992

Research Advisory Committee, American Enterprise Institute, 1979 - 1985

Editor, *Quarterly Journal of Economics*, 1979 - 1984

Referee for *American Economic Review*, *Bell Journal of Economics*, *Economic Inquiry*, *Journal of Political Economy*, *Review of Economics and Statistics*, *Science Magazine*, *Journal of Policy Analysis and Management*, *Social Choice and Welfare*, *Quarterly Journal of Economics*, MIT Press, North-Holland Press, Harvard University Press, *American Indian Culture and Research Journal*

TEACHING EXPERIENCE

Native Americans in the 21st Century: Nation Building I & II (University-wide, graduate and undergraduate); Introduction to Environment and Natural Resource Policy (Graduate, Kennedy School of Government); Seminar in Positive Political Economy (Graduate, Kennedy School of Government); Intermediate Microeconomics for Public Policy (Graduate, Kennedy School of Government); Natural Resources and Public Lands Policy (Graduate, Kennedy School of Government); Economics of Regulation and Antitrust (Graduate); Economics of Regulation (Undergraduate); Introduction to Energy and Environmental Policy (Graduate, Kennedy School of Government); Graduate Seminar in Industrial Organization and Regulation; Intermediate Microeconomics (Undergraduate); Principles of Economics (Undergraduate); Seminar in Energy and Environmental Policy (Graduate, Kennedy School of Government)

HONORS AND AWARDS

First American Public Policy Award, First American Leadership Awards 2005, "Realizing the Vision: Healthy Communities, Businesses, and Economies," National Center for American Indian Enterprise Development, Phoenix, AZ, June 9, 2005.

Allyn Young Prize for Excellence in the Teaching of the Principles of Economics, Harvard University, 1978 - 1979 and 1979 - 1980

Chancellor's Intern Fellowship in Economics, September 1973 to July 1978, one of two awarded in 1973, University of California, Los Angeles

Smith-Richardson Dissertation Fellowship in Political Economy, Foundation for Research in Economics and Education, June 1977 to September 1977, UCLA

Summer Research Fellowship, UCLA Foundation, June 1976 to September 1976

Dissertation Fellowship, Hoover Institution, Stanford University, September 1977 to June 1978

Four years of undergraduate academic scholarships, 1969 - 1973; graduated with University Distinction and Departmental Honors, Stanford University

Research funding sources have included: The National Science Foundation; USAID (IRIS Foundation); Pew Charitable Trust; Christian A. Johnson Family Endeavor Foundation; The Ford Foundation; The Kellogg Foundation; Harvard Program on the Environment; The Northwest Area Foundation; the U.S. Department of Energy; the Research Center for Managerial Economics and Public Policy, UCLA Graduate School of Management; the MIT Energy Laboratory; Harvard's Energy and Environmental Policy Center; the Political Economy Research Center; the Center for Economic Policy Research, Stanford University; the Federal Trade Commission; and Resources for the Future; The Rockefeller Foundation.

EXHIBIT JPK-2

A-110550F0160

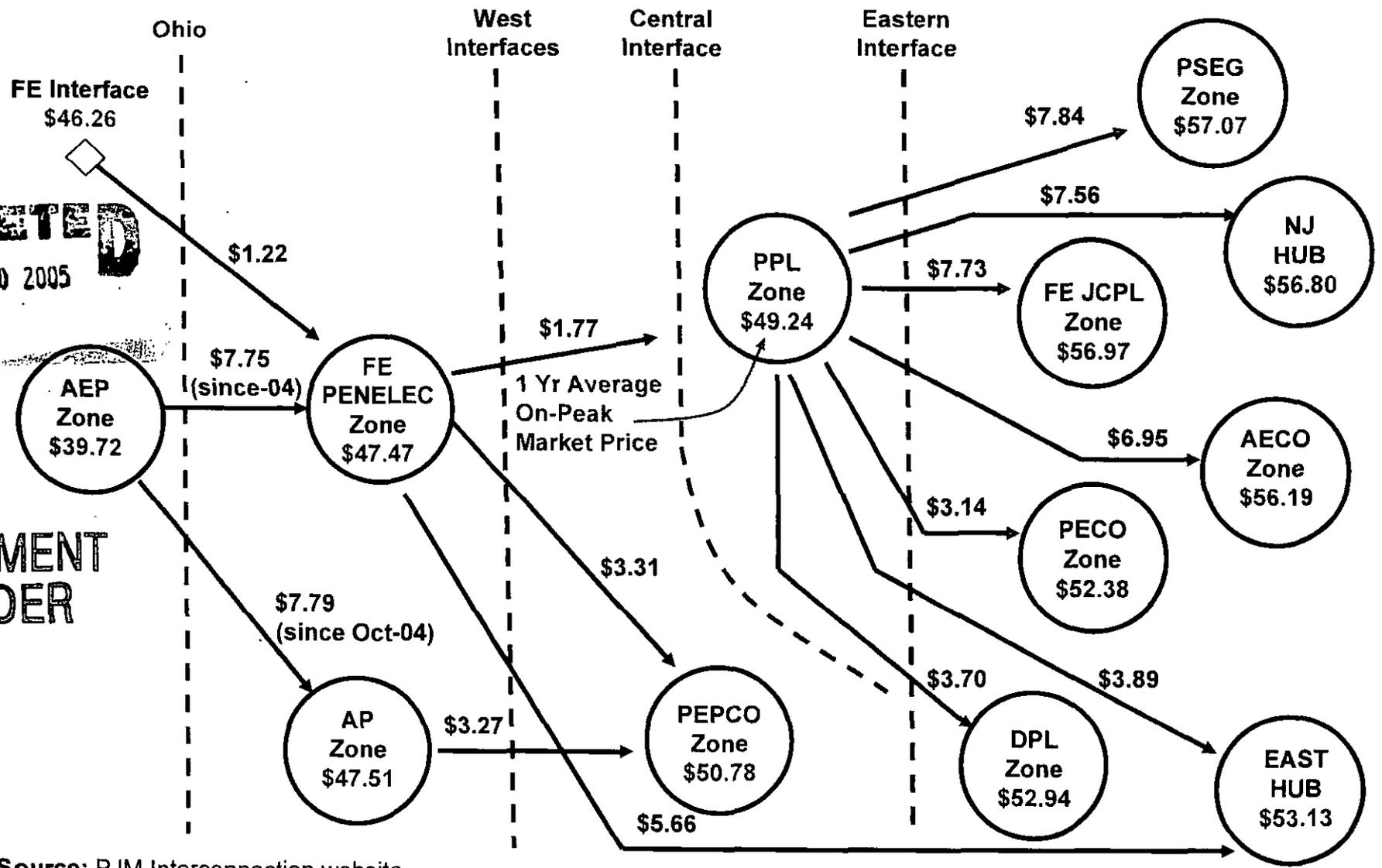
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Exhibit JPK-2

PJM 1-YEAR AVERAGE ON-PEAK ZONAL PRICES AND PRICE DIFFERENCES (\$/MWh) January 1, 2004 – December 31, 2004

DOCKETED
NOV 10 2005

**DOCUMENT
FOLDER**



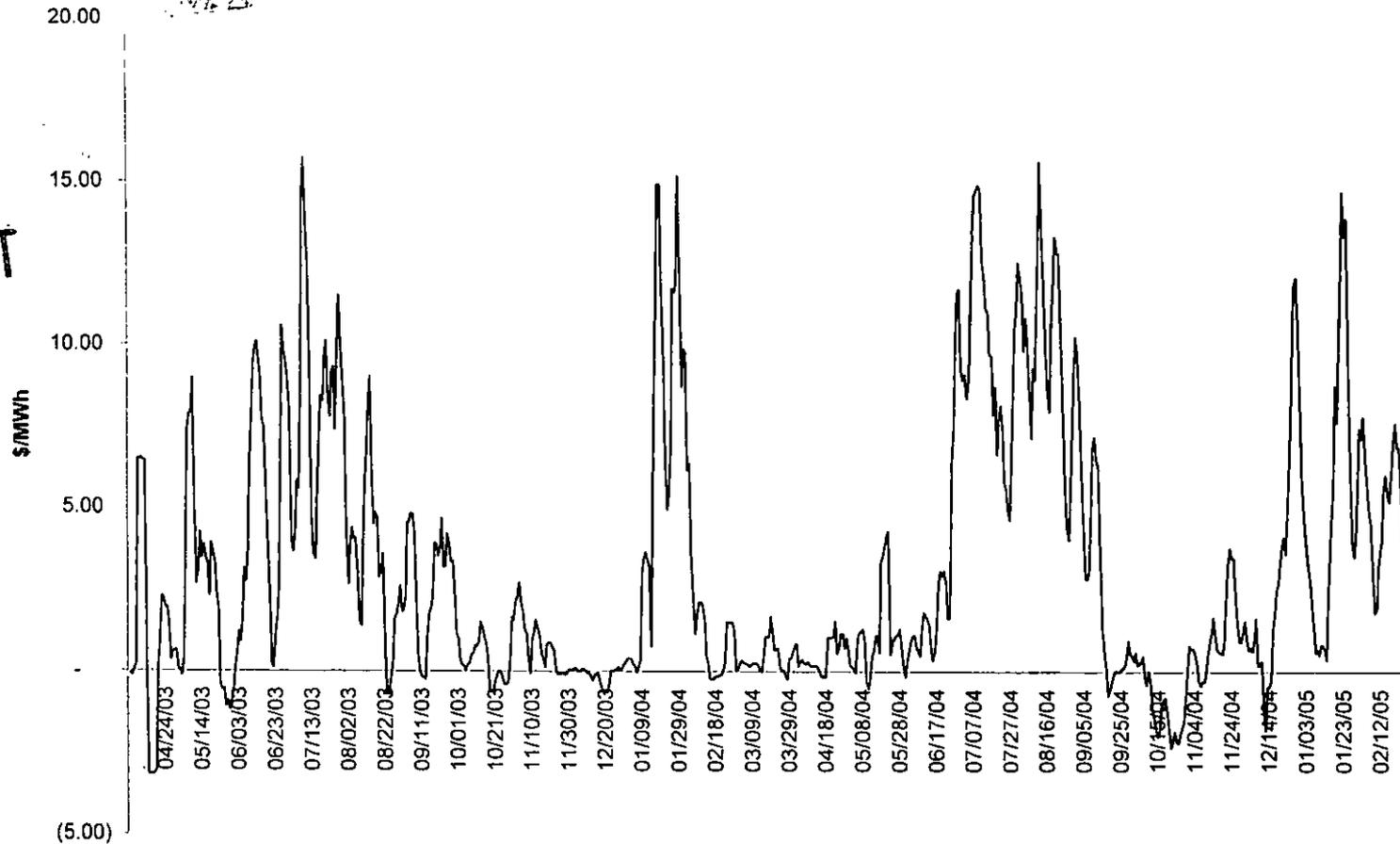
Source: PJM Interconnection website.

EXHIBIT JPK-3

DOCKETED
NOV 10 2005

PEPCO vs. AP
AVERAGE ON-PEAK ZONAL PRICE DIFFERENTIALS
April 2003 - February 2005

**DOCUMENT
FOLDER**



Note: Graph shows the price difference between the Pepco and AP (Allegheny Power) moving weekly (5-day) averages.

Source: PJM Interconnection website.

EXHIBIT JPK-4

**SENSITIVITY OF MARKET POWER ANALYSES TO RELEVANT GEOGRAPHIC MARKET DEFINITION
PJM Classic Market, Supplemental Proposal**

Economic Capacity (Post-Mitigation Results) (New Purchaser Assumptions)

Period	Price	Pre-Merger						Post-Merger				Mitigation and Post-Mitigation Results					
		Exelon		PSEG		Mkt Size	HHI	EEG		HHI Chg	Mitigation MW	Nuclear	Mkt Share	HHI	HHI Chg	Mitigation MW Summer Equivalent	
S_SP1	\$250	10,366	15.5%	11,202	16.8%			66,801	983								21,569
S_SP2	\$80	9,404	15.8%	9,281	15.6%	59,397	960	18,685	31.5%	1,455	495	4,953	2,385	23.1%	1,101	141	5,400
S_P	\$55	7,835	17.1%	7,445	16.2%	45,886	1,008	15,280	33.3%	1,562	554	4,953	2,385	22.5%	1,093	85	5,400
S_OP	\$25	6,238	28.9%	3,189	14.8%	21,576	1,395	9,427	43.7%	2,249	854	2,385	2,385	32.6%	1,483	88	2,600
W_SP	\$80	10,003	16.2%	9,357	15.1%	61,917	931	19,360	31.3%	1,420	489	5,083	2,480	23.1%	1,069	138	5,400
W_P	\$55	8,391	17.3%	7,299	15.1%	48,487	980	15,690	32.4%	1,501	521	5,083	2,480	21.9%	1,060	80	5,400
W_OP	\$30	7,880	19.8%	4,946	12.4%	39,812	1,050	12,826	32.2%	1,542	492	3,172	2,480	24.2%	1,165	115	3,300
SH_SP	\$65	7,743	18.1%	6,257	14.6%	42,820	1,016	14,001	32.7%	1,545	529	4,066	1,950	23.2%	1,134	118	5,400
SH_P	\$45	6,821	20.3%	4,064	12.1%	33,639	1,055	10,885	32.4%	1,545	490	2,454	1,950	25.1%	1,193	138	3,300
SH_OP	\$20	5,333	28.7%	2,440	13.1%	18,588	1,343	7,773	41.8%	2,096	753	1,950	1,950	31.3%	1,399	56	2,600

Source: Attachment PPL-I-9b (Revised)-2 to the interrogatory response PPL-9b

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EXHIBIT JPK-5

**SENSITIVITY OF MARKET POWER ANALYSES
TO FAILURE OF VIRTUAL DIVESTITURE AS ACCEPTABLE MITIGATION
Economic Capacity, Applicants' Supplemental Proposal**

Period	Price	Pre-Merger						Post-Merger				Mitigation and Post-Mitigation Results				
		Exelon MW	Exelon Share	PSEG MW	PSEG Share	Mkt Size	HHI	EEG MW	EEG Share	HHI	HHI Chg	Mitigation MW	Nuclear	EEG Share	HHI	HHI Chg
PJM East																
S_SP1	\$250	6,948	18.5%	9,653	25.7%	37,610	1,282	16,600	44.1%	2,230	948	3,685	0	34.3%	1,624	342
S_SP2	\$80	6,016	18.6%	7,750	23.9%	32,384	1,207	13,766	42.5%	2,096	889	2,569	0	34.6%	1,608	401
S_P	\$55	5,105	21.9%	5,948	25.5%	23,362	1,347	11,052	47.3%	2,460	1,113	2,569	0	36.3%	1,687	340
S_OP	\$25	4,887	31.0%	2,631	16.7%	15,779	1,486	7,518	47.6%	2,519	1,033	0	0	47.6%	2,519	1,033
W_SP	\$80	6,404	19.5%	7,790	23.7%	32,900	1,220	14,194	43.1%	2,142	922	2,603	0	35.2%	1,643	423
W_P	\$55	5,435	22.5%	5,762	23.8%	24,186	1,314	11,197	46.3%	2,385	1,071	2,603	0	35.5%	1,657	343
W_OP	\$30	5,167	26.8%	3,594	18.7%	19,258	1,326	8,761	45.5%	2,327	1,001	692	0	41.9%	2,057	731
SH_SP	\$65	4,877	20.4%	5,087	21.3%	23,872	1,189	9,964	41.7%	2,060	871	2,116	0	32.9%	1,539	350
SH_P	\$45	4,675	26.2%	2,935	16.4%	17,863	1,257	7,610	42.6%	2,117	860	504	0	39.8%	1,920	663
SH_OP	\$20	4,338	30.6%	2,051	14.5%	14,180	1,413	6,389	45.1%	2,298	885	0	0	45.1%	2,298	885
PJM Pre-2004																
S_SP1	\$250	10,508	13.5%	11,210	14.4%	77,815	877	21,718	27.9%	1,266	389	3,685	0	23.2%	1,095	218
S_SP2	\$80	9,545	13.7%	9,288	13.3%	69,950	865	18,834	26.9%	1,227	362	2,569	0	23.3%	1,094	229
S_P	\$55	7,976	14.5%	7,455	13.6%	54,840	934	15,431	28.1%	1,329	395	2,569	0	23.5%	1,153	219
S_OP	\$25	6,416	26.1%	3,189	13.0%	24,609	1,220	9,605	39.0%	1,896	676	0	0	39.0%	1,896	676
W_SP	\$80	9,899	14.0%	9,334	13.2%	70,720	864	19,233	27.2%	1,233	369	2,603	0	23.5%	1,098	234
W_P	\$55	8,299	14.9%	7,273	13.1%	55,722	937	15,571	27.9%	1,325	388	2,603	0	23.3%	1,153	216
W_OP	\$30	7,701	17.7%	4,946	11.4%	43,416	986	12,648	29.1%	1,390	404	692	0	27.5%	1,321	335
SH_SP	\$65	7,866	15.4%	6,263	12.2%	51,221	923	14,129	27.6%	1,299	376	2,116	0	23.5%	1,148	225
SH_P	\$45	6,936	17.3%	4,070	10.1%	40,127	1,005	11,006	27.4%	1,355	350	504	0	26.2%	1,304	299
SH_OP	\$20	5,472	26.6%	2,440	11.9%	20,590	1,209	7,912	38.4%	1,839	630	0	0	38.4%	1,839	630

Source: Exhibit J-28 to Applicants' Supplemental Proposal.

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**SENSITIVITY OF MARKET POWER ANALYSES
TO FAILURE OF VIRTUAL DIVESTITURE AS ACCEPTABLE MITIGATION
Economic Capacity, Applicants' Supplemental Proposal**

Period	Price	Pre-Merger						Post-Merger				Mitigation and Post-Mitigation Results				
		Exelon MW	Exelon Share	PSEG MW	PSEG Share	Mkt Size	HHI	EEG MW	EEG Share	HHI	HHI Chg	Mitigation MW	Nuclear	EEG Share	HHI	HHI Chg
<i>PJM Expanded</i>																
S_SP1	\$250	24,354	14.8%	12,929	7.9%	164,249	768	37,283	22.7%	1,002	234	3,685	0	20.5%	924	156
S_SP2	\$80	23,384	15.1%	11,006	7.1%	154,731	789	34,390	22.2%	1,004	215	2,569	0	20.6%	946	157
S_P	\$55	18,813	15.3%	9,153	7.4%	123,042	893	27,966	22.7%	1,120	227	2,569	0	20.6%	1,046	153
S_OP	\$25	16,950	22.3%	3,189	4.2%	75,898	1,452	20,139	26.5%	1,639	187	0	0	26.5%	1,640	188
W_SP	\$80	24,013	15.3%	11,053	7.1%	156,732	798	35,067	22.4%	1,014	216	2,603	0	20.7%	955	157
W_P	\$55	19,150	15.2%	8,973	7.1%	125,619	898	28,123	22.4%	1,116	218	2,603	0	20.3%	1,043	145
W_OP	\$30	18,373	17.9%	4,946	4.8%	102,839	1,104	23,319	22.7%	1,276	172	692	0	22.0%	1,251	147
SH_SP	\$65	19,460	16.3%	7,672	6.4%	119,305	841	27,133	22.7%	1,051	210	2,116	0	21.0%	987	146
SH_P	\$45	15,842	16.6%	5,462	5.7%	95,744	933	21,304	22.3%	1,122	189	504	0	21.7%	1,102	169
SH_OP	\$20	12,975	21.9%	2,440	4.1%	59,286	1,433	15,415	26.0%	1,613	180	0	0	26.0%	1,613	180
<i>PJM Classic</i>																
S_SP1	\$250	10,366	15.5%	11,202	16.8%	66,801	983	21,569	32.3%	1,503	520	3,685	0	26.8%	1,261	278
S_SP2	\$80	9,404	15.8%	9,281	15.6%	59,397	960	18,685	31.5%	1,455	495	2,569	0	27.1%	1,264	304
S_P	\$55	7,835	17.1%	7,445	16.2%	45,886	1,008	15,280	33.3%	1,562	554	2,569	0	27.7%	1,299	291
S_OP	\$25	6,238	28.9%	3,189	14.8%	21,576	1,395	9,427	43.7%	2,249	854	0	0	43.7%	2,250	855
W_SP	\$80	10,003	16.2%	9,357	15.1%	61,917	931	19,360	31.3%	1,420	489	2,603	0	27.1%	1,232	301
W_P	\$55	8,391	17.3%	7,299	15.1%	48,487	980	15,690	32.4%	1,501	521	2,603	0	27.0%	1,258	278
W_OP	\$30	7,880	19.8%	4,946	12.4%	39,812	1,050	12,826	32.2%	1,542	492	692	0	30.5%	1,456	406
SH_SP	\$65	7,743	18.1%	6,257	14.6%	42,820	1,016	14,001	32.7%	1,545	529	2,116	0	27.8%	1,319	303
SH_P	\$45	6,821	20.3%	4,064	12.1%	33,639	1,055	10,885	32.4%	1,545	490	504	0	30.9%	1,468	413
SH_OP	\$20	5,333	28.7%	2,440	13.1%	18,588	1,343	7,773	41.8%	2,096	753	0	0	41.8%	2,096	753

Source: Exhibit J-28 to Applicants' Supplemental Proposal, Attachment PPL-I-9b (Revised)-2 to the interrogatory response PPL-9b

EXHIBIT JPK-6a

A-110550 Folio 6

Exhibit JPK-6a

**ANNUAL HOLDINGS OF FTRs WITH PJM EAST ACCESS
On-Peak, 2005-2006**

Name	Cleared MW	Share
ACN Energy, Inc.	6.6	0.08%
Allegheny Electric Cooperative, Inc.	25.1	0.32%
Amerada Hess Corporation	88.8	1.14%
Appalachian Power Company (AEP Generation)	100	1.29%
BP Energy	5.6	0.07%
Citadel Energy Products, LLC	532.8	6.85%
Commonwealth Energy	88	1.13%
ConEdison Energy	15	0.19%
Constellation Energy	864	11.11%
Coral Power	47	0.60%
Dominion Energy	31	0.40%
Edison Mission Marketing and Trading, Inc.	41.9	0.54%
Energy Cooperative Association of PA	3	0.04%
Exelon Generation Co., LLC (Power Team)	2256.1	29.01%
FPL Energy Power Marketing, Inc.	60	0.77%
FirstEnergy	207.3	2.67%
J. Aron & Company	20	0.26%
Merrill Lynch Commodities, Inc.	45	0.58%
Mirant Americas Energy Marketing (Potomac River)	25	0.32%
Morgan Stanley Capital Group, Inc.	800	10.29%
NRG New Jersey Energy Sales LLC	8.6	0.11%
Old Dominion Electric Cooperative	75	0.96%
PPL EnergyPlus, L.L.C.	86.6	1.11%
PSEG Energy Resources and Trade LLC	897	11.53%
Pepco Holdings	259.1	3.33%
Reliant Energy	42.7	0.55%
Select Energy, Inc. (Wholesale Marketing)	501.6	6.45%
Sempra Energy	39.7	0.51%
Strategic Energy L.L.C.	14.8	0.19%
Susquehanna Energy Products, LLC	292.1	3.76%
UGI Energy Services, Inc.	5	0.06%
Williams	9.8	0.13%
Others	284	3.65%
TOTAL ON-PEAK	7778.2	

Source: PJM Interconnection website.

Note:

- 1) Results represent FTR pairings that cross the PJM Eastern Interface.
- 2) Results include both on-peak and 24-hour FTRs.

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EXHIBIT JPK-6b

**ANNUAL HOLDINGS OF FTRs WITH PJM EAST ACCESS
Off-Peak, 2005-2006**

Name	Cleared MW	Share
ACN Energy, Inc.	6.6	0.10%
Allegheny Electric Cooperative, Inc.	25.1	0.37%
Amerada Hess Corporation	88.8	1.31%
Appalachian Power Company (AEP Generation)	100	1.47%
BP Energy	5.6	0.08%
Citadel Energy Products, LLC	145	2.13%
Commonwealth Energy	88	1.29%
ConEdison Energy	15	0.22%
Constellation Energy	704.9	10.36%
Coral Power	34	0.50%
Dominion Energy	31	0.46%
Edison Mission Marketing and Trading, Inc.	10	0.15%
Energy Cooperative Association of PA	3	0.04%
Exelon Generation Co., LLC (Power Team)	2303.3	33.86%
FPL Energy Power Marketing, Inc.	83	1.22%
FirstEnergy	147.3	2.17%
J. Aron & Company	20	0.29%
Merrill Lynch Commodities, Inc.	169.9	2.50%
Mirant Americas Energy Marketing (Potomac River)	115	1.69%
Morgan Stanley Capital Group, Inc.	425	6.25%
NRG New Jersey Energy Sales LLC	8.6	0.13%
Old Dominion Electric Cooperative	25	0.37%
PPL EnergyPlus, L.L.C.	86.6	1.27%
PSEG Energy Resources and Trade LLC	913	13.42%
Pepco Holdings	210	3.09%
Reliant Energy	42.7	0.63%
Select Energy, Inc. (Wholesale Marketing)	405.6	5.96%
Sempra Energy	59.7	0.88%
Strategic Energy L.L.C.	14.8	0.22%
Susquehanna Energy Products, LLC	279.9	4.11%
UGI Energy Services, Inc.	5	0.07%
Others	232	3.41%
TOTAL OFF-PEAK	6803.4	

Source: PJM Interconnection website.

Note:

- 1) Results represent FTR pairings that cross the PJM Eastern Interface.
- 2) Results include both off-peak and 24-hour FTRs.

EXHIBIT JPK-7

**EFFECT OF PROPOSED MITIGATION IN PJM EAST WITH IMPORTS ALLOCATED BY FTR HOLDINGS
Economic Capacity, Applicants' Supplemental Proposal**

Period	Exelon Capacity MW	PSEG Capacity MW	Pre- Merger HHI	Post-Merger Pre-Mitigation HHI	Change in HHI	EEG Capacity Pre-Mitigation MW	EEG Post-Mitigation Market Share	Post-Merger Post-Mitigation HHI	Change in HHI	EEG Capacity Post-Mitigation MW	Mitigated Amount MW
S_SP1	8417	10213	1491	2743	1251	18630	37%	1774	282	13571	5059
S_SP2	7450	8294	1437	2652	1214	15744	36%	1734	297	11615	4129
S_P	6557	6438	1705	3273	1567	12995	38%	1807	102	8866	4129
S_OP	5926	3082	2083	3679	1596	9008	45%	2300	217	6807	2201
W_SP	7848	8333	1455	2697	1242	16181	37%	1757	302	11938	4243
W_P	6892	6251	1643	3134	1491	13143	37%	1741	99	8900	4243
W_OP	6701	4097	1930	3516	1586	10798	43%	2150	220	7965	2833
SH_SP	6192	5615	1439	2674	1235	11807	35%	1661	223	8421	3386
SH_P	6046	3402	1705	3016	1311	9448	41%	1987	282	7252	2196
SH_OP	5349	2521	2039	3504	1465	7870	45%	2263	224	6070	1800

Mitigation assumption: FirstEnergy, Pepco, PPL and Reliant each acquire 25% of divested assets in each period.

Source: Dr. Hieronymus workpapers, Exhibit J-28 to Supplemental Testimony.

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EXHIBIT JPK-8

**SENSITIVITY OF PJM EAST MARKET POWER ANALYSES
TO FAILURE OF VIRTUAL DIVESTITURE AS ACCEPTABLE MITIGATION**

Economic Capacity, Applicants' Supplemental Proposal Including the Allocation of Imports by FTR Holdings

Period	Exelon Capacity MW	PSEG Capacity MW	Pre- Merger HHI	Post-Merger Pre-Mitigation HHI	Change in HHI	EEG Capacity Pre-Mitigation MW	EEG Post-Mitigation Market Share	Post-Merger Post-Mitigation HHI	Change in HHI	EEG Capacity Post-Mitigation MW	Mitigated Amount MW
S_SP1	8417	10213	1491	2743	1251	18630	40%	1991	499	14945	3685
S_SP2	7450	8294	1437	2652	1214	15744	41%	2032	594	13175	2569
S_P	6557	6438	1705	3273	1567	12995	45%	2268	563	10426	2569
S_OP	5926	3082	2083	3679	1596	9008	60%	3679	1596	9008	0
W_SP	7848	8333	1455	2697	1242	16181	42%	2069	615	13578	2603
W_P	6892	6251	1643	3134	1491	13143	44%	2187	545	10540	2603
W_OP	6701	4097	1930	3516	1586	10798	54%	3129	1199	10106	692
SH_SP	6192	5615	1439	2674	1235	11807	41%	1981	543	9691	2116
SH_P	6046	3402	1705	3016	1311	9448	51%	2746	1041	8944	504
SH_OP	5349	2521	2039	3504	1465	7870	58%	3504	1465	7870	0

Mitigation assumption: FirstEnergy, Pepco, PPL and Reliant each acquire 25% of divested assets in each time period.

Source: Dr. Hieronymus workpapers, Exhibit J-28 to Supplemental Testimony.

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EXHIBIT JPK-9

**COMPETITIVE PRICE LEVELS USED FOR ANALYSIS
COMPARED TO PJM MARKET DATA**

Period ⁽¹⁾	Price Level Used In Analysis	Price Level Calculated Following Merging Parties' Indicated Approach and PJM Market Data ⁽²⁾	Difference
S_SP2	\$80	\$85	\$5
S_P	\$55	\$53	-\$2
S_OP	\$25	\$30	\$5
W_SP	\$80	\$85	\$5
W_P	\$55	\$52	-\$3
W_OP	\$30	\$39	\$9
SH_SP	\$65	\$73	\$8
SH_P	\$45	\$46	\$1
SH_OP	\$20	\$31	\$11

(1) Excludes the summer top load hour which is not a calculated value.

(2) Calculations follow methodology described in Hieronymus Testimony at page 36 and are based on PJM price and load data provided by Dr. Hieronymus in his workpapers.

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EXHIBIT JPK-10a

**SENSITIVITY OF PROPOSED MITIGATION TO TIME PERIOD DEFINITION AND GENERATOR VARIABLE COST
(PJM East, Economic Capacity, Original Proposal)**

	Period	Price	Pre-Merger HHI	Post-Merger Pre-Mitigation HHI	Change in HHI	Post-Merger Post-Mitigation HHI	Change in HHI	Projected Mitigated Capacity (MW)	Change in HHI from Applicant's Proposal
Applicant's Proposal ⁽¹⁾	S_SP2	\$80	1,218	2,088	870	1,273	55	3,947	-
	S_P	\$55	1,327	2,385	1,058	1,236	(91)	3,947	-
	S_OP	\$25	1,477	2,492	1,015	1,473	(4)	2,201	-
	W_SP	\$80	1,228	2,128	900	1,291	63	4,061	-
	W_P	\$55	1,323	2,390	1,067	1,222	(101)	4,061	-
	W_OP	\$30	1,324	2,311	987	1,297	(27)	2,833	-
Minor Change Results in Screen Failure ⁽²⁾	S_SP2	\$80	1,218	2,088	870	1,100	(118)	5,147	(173)
	S_P	\$55	1,327	2,385	1,058	1,516	189	2,747	280
	W_SP	\$80	1,228	2,128	900	1,117	(111)	5,261	(174)
	W_P	\$55	1,323	2,390	1,067	1,497	174	2,861	275
Minor Change Results in Screen Failure ⁽³⁾	S_P	\$55	1,327	2,385	1,058	1,130	(197)	4,497	(105)
	S_OP	\$25	1,477	2,492	1,015	1,704	227	1,651	232
	W_P	\$55	1,323	2,390	1,067	1,119	(204)	4,611	(104)
	W_OP	\$30	1,324	2,311	987	1,456	132	2,283	159

Note:

(1) Applicants' proposal under assumed 2006 market conditions.

(2) Assume a minor change in fuel costs results in the 1,200 MW Bergen generation facility proposed for divestiture becoming uneconomic at \$55 in summer and winter peak. Thus, lower price level sees 1,200 MW less mitigation, while at higher price level mitigation increases by 1,200 MW.

(3) Assume a minor change in fuel costs results in the 550 MW Eddystone generation facility proposed for divestiture becoming uneconomic at \$25-\$30 in summer and winter off-peak. Thus, lower price level sees 550 MW less mitigation, while at higher price level mitigation increases by 550 MW.

Source: Exhibit J-14

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EXHIBIT JPK-10b

**SENSITIVITY OF PROPOSED MITIGATION TO TIME PERIOD DEFINITION AND GENERATOR VARIABLE COST
(PJM Pre-2004, Economic Capacity, Original Proposal)**

	Period	Price	Pre-Merger HHI	Post-Merger Pre-Mitigation HHI	Change in HHI	Post-Merger Post-Mitigation HHI	Change in HHI	Projected Mitigated Capacity (MW)	Change in HHI from Applicant's Proposal
Applicant's Proposal ⁽¹⁾	S_SP2	\$80	885	1,254	369	995	110	4,130	-
	S_P	\$55	971	1,371	400	1,043	72	4,130	-
	S_OP	\$25	1,217	1,885	668	1,277	60	2,385	-
	W_SP	\$80	883	1,257	374	993	110	4,252	-
	W_P	\$55	968	1,368	400	1,034	66	4,252	-
	W_OP	\$30	985	1,386	401	1,063	78	3,024	-
Minor Change Results in Screen Failure ⁽²⁾	S_SP2	\$80	885	1,254	369	943	58	5,330	(52)
	S_P	\$55	971	1,371	400	1,115	144	2,930	72
	W_SP	\$80	883	1,257	374	941	58	5,452	(51)
	W_P	\$55	968	1,368	400	1,104	136	3,052	71
Minor Change Results in Screen Failure ⁽³⁾	S_P	\$55	971	1,371	400	1,015	44	4,680	(29)
	S_OP	\$25	1,217	1,885	668	1,394	177	1,835	118
	W_P	\$55	968	1,368	400	1,006	38	4,802	(28)
	W_OP	\$30	985	1,386	401	1,105	120	2,474	42

Note:

(1) Applicants' proposal under assumed 2006 market conditions.

(2) Assume a minor change in fuel costs results in the 1,200 MW Bergen generation facility proposed for divestiture becoming uneconomic at \$55 in summer and winter peak. Thus, lower price level sees 1,200 MW less mitigation, while at higher price level mitigation increases by 1,200 MW.

(3) Assume a minor change in fuel costs results in the 550 MW Eddystone generation facility proposed for divestiture becoming uneconomic at \$25-\$30 in summer and winter off-peak. Thus, lower price level sees 550 MW less mitigation, while at higher price level mitigation increases by 550 MW.

Source: Exhibit J-14

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EXHIBIT JPK-11

ExelonSM

Legal Department

Exelon Business Services Company
2301 Market Street / S23-1
P.O. Box 8699
Philadelphia, PA 19101-8699

Telephone 215.841.5544
Fax 215.568.3389
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Business Services
Company

Direct Dial: 215 841 4941

June 2, 2005

Melanie J. Sabo
Preston, Gates, Ellis & Rouvelas, Meeds LLP
1735 New York Avenue, NW
Suite 500
Washington, DC 20006-5209

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**RE: Joint Application of PECO Energy Company and Public Service
Electric And Gas Company for Approval of the Merger of Public
Service Enterprise Group Incorporated with and into Exelon Corporation
Docket No. A-110550F0160**

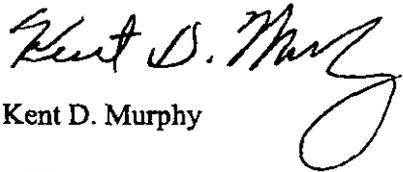
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Dear Ms. Sabo:

Enclosed please find PECO Energy Company's and Public Service Electric and Gas Company's answers to the following discovery requests:

PPL-I, Nos. 6, 9, 28, and 31

Sincerely,



Kent D. Murphy

KDM:mb
Enclosure

Service List

PECO Energy Company and
Public Service Electric & Gas Company
Docket No. A-110550F0160

PPL-I-9.

Identify any market definitions that were considered but not included in Dr. Hieronymus' analysis discussed in Exhibit J-1.

- a. Was the PJM Mid-Atlantic market considered by Dr. Hieronymus in a market concentration analysis? If so please provide the results of the analysis.
- b. If the PJM Mid-Atlantic market was not considered by Dr. Hieronymus in a market concentration analysis, please provide a detailed analysis of this market, as has been conducted on other markets in Exhibit J-1, and explain how the proposed mitigation is adequate for alleviating market concentration concerns.

Response:

Dr. Hieronymus did not analyze other market definitions. Early in the analysis, data were reviewed to determine which markets should be analyzed, so in that sense Dr. Hieronymus considered a multitude of possible definitions.

- a. See above response. See also Exhibit J-17 (pages 32-34).
- b. Dr. Hieronymus does not have sufficient information to conduct such an analysis. Specifically, Dr. Hieronymus is not aware of any recent study of the simultaneous import capability into PJM Mid-Atlantic market and hence does not have the requisite information to conduct a study of this market.

Responsible Witness: William H. Hieronymus



Business Services
Company

Legal Department

Exelon Business Services Company
2301 Market Street / S23-1
P.O. Box 8699
Philadelphia, PA 19101-8699

Telephone 215.841.5544
Fax 215.568.3389
www.exeloncorp.com

Direct Dial: 215 841 4941

June 17, 2005

Melanie J. Sabo
Preston, Gates, Ellis, Rouvelas & Meeds, LLP
1735 New York Avenue, NW
Suite 500
Washington, DC 20006-5209

**RE: Joint Application of PECO Energy Company and Public Service
Electric And Gas Company for Approval of the Merger of Public
Service Enterprise Group Incorporated with and into Exelon Corporation
Docket No. A-110550F0160**

Dear Ms. Sabo

Enclosed please find PECO Energy Company's and Public Service Electric and Gas Company's answers to the following discovery requests:

PPL No. 9(b) – Revised.

Thank you for your attention to this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Kent D. Murphy". The signature is fluid and cursive, written over the typed name.

Kent D. Murphy

KDM:mb
Enclosure

Service List

PECO Energy Company and Public Service Electric and Gas Company
Docket No.: A-110550F0160

PPL – I – 9b:

9b. If the PJM Mid-Atlantic market was not considered by Dr. Hieronymus in a market concentration analysis, please provide a detailed analysis of this market, as has been conducted on other markets in Exhibit J-1, and explain how the proposed mitigation is adequate for alleviating market concentration concerns.

Response (Revised)

Since the integration of Allegheny into PJM and the corresponding dispatch of Allegheny as part of PJM, Dr. Hieronymus does not believe PJM Classic is a relevant market (see Exhibit J-17, pages 32-37).

Nevertheless, pursuant to correspondence between Exelon counsel and PPL counsel, Dr. Hieronymus has completed the analysis requested using the import capability information he relied upon in previous pre-PJM expansion analyses conducted in connection with the ComEd/PECO merger. See Attachment PPL-I-9b (Revised)-1.

Dr. Hieronymus notes that the import capability is not reliable to the extent that Allegheny's integration into PJM (and the corresponding dispatch of Allegheny as part of PJM) alters the simultaneous import capability into PJM Mid-Atlantic (i.e., PJM Classic).

Because Dr. Hieronymus does not agree that "PJM Classic" is a relevant market, there is no basis for Dr. Hieronymus to demonstrate that "proposed mitigation is adequate for alleviating market concentration concerns." Such a demonstration is required only for relevant markets.

Responsible Witness: William H. Hieronymus

Economic Capacity (Post-Mitigation Results) (Original Purchaser Assumptions)

Period	Price	Pre-Merger						Post-Merger				Mitigation and Post-Mitigation Results					
		Exelon		PSEG		Mkt Size	HHI	EEG		HHI Chg	Mitigation MW	Nuclear	Mkt Share	HHI	HHI Chg	Mitigation MW Summer Equivalent	
MW	Mkt Share	MW	Mkt Share	MW	Mkt Share			MW	Mkt Share								MW
<i>PJM Classic</i>																	
S_SP1	\$250	10,386	15.5%	11,202	16.8%	66,801	983	21,569	32.3%	1,593	520	6,070	2,385	23.2%	1,054	71	6,600
S_SP2	\$80	9,404	15.8%	9,281	15.6%	59,397	969	18,685	31.5%	1,455	495	4,953	2,385	23.1%	1,046	86	5,400
S_P	\$55	7,835	17.1%	7,445	16.2%	46,888	1,008	15,289	33.3%	1,582	554	4,953	2,385	22.5%	1,020	12	5,400
S_OP	\$25	6,238	28.9%	3,189	14.8%	21,578	1,395	9,427	48.7%	2,249	854	2,385	2,385	32.6%	1,467	72	2,600
W_SP	\$80	10,003	16.2%	9,357	15.1%	61,917	931	19,360	31.3%	1,420	489	5,083	2,480	23.1%	1,017	86	5,400
W_P	\$55	8,391	17.3%	7,289	15.1%	48,487	980	15,690	32.4%	1,501	521	5,083	2,480	21.9%	988	9	5,400
W_OP	\$30	7,880	19.8%	4,946	12.4%	39,812	1,050	12,828	32.2%	1,542	492	3,172	2,480	24.2%	1,127	77	3,300
SH_SP	\$65	7,743	18.1%	6,257	14.6%	42,829	1,016	14,001	32.7%	1,545	529	4,066	1,950	23.2%	1,081	45	5,400
SH_P	\$46	6,821	20.3%	4,064	12.1%	33,639	1,055	10,885	32.4%	1,545	490	2,454	1,950	25.1%	1,156	101	3,300
SH_OP	\$20	5,333	28.7%	2,440	13.1%	18,568	1,343	7,773	41.8%	2,098	753	1,950	1,950	31.3%	1,384	41	2,600

Economic Capacity (Post-Mitigation Results) (New Purchaser Assumptions)

Period	Price	Pre-Merger						Post-Merger				Mitigation and Post-Mitigation Results					
		Exelon		PSEG		Mkt Size	HHI	EEG			HHI Chg	Mitigation MW	Nuclear	Mkt Share	HHI	HHI Chg	Mitigation MW Summer Equivalent
		MW	Mkt Share	MW	Mkt Share			MW	Mkt Share	HHI							
<i>PJM Classic</i>																	
S_SP1	\$250	10,368	15.5%	11,202	16.8%	66,801	983	21,588	32.3%	1,503	529	6,070	2,365	23.2%	1,122	139	6,800
S_SP2	\$80	9,404	15.8%	9,281	15.6%	58,387	869	18,685	31.5%	1,485	485	4,883	2,365	23.1%	1,101	141	5,400
S_P	\$55	7,835	17.1%	7,445	16.2%	45,886	1,005	15,289	33.3%	1,882	594	4,883	2,365	22.6%	1,093	88	6,400
S_OP	\$25	6,238	28.8%	3,189	14.8%	21,578	1,385	8,427	43.7%	2,289	804	2,365	2,365	32.8%	1,483	58	2,600
W_SP	\$80	10,003	16.2%	9,357	15.1%	61,917	831	18,358	31.5%	1,480	459	5,083	2,480	23.1%	1,069	138	5,400
W_P	\$55	8,391	17.3%	7,299	15.1%	48,487	686	15,600	32.4%	1,501	521	5,083	2,480	21.9%	1,080	80	5,400
W_OP	\$30	7,880	19.8%	4,948	12.4%	38,812	1,058	12,828	32.2%	1,542	482	3,172	2,480	24.2%	1,185	115	3,300
SH_SP	\$85	7,743	18.1%	6,257	14.8%	42,820	1,018	14,901	32.7%	1,545	526	4,068	1,950	23.2%	1,134	118	5,400
SH_P	\$45	6,821	20.3%	4,064	12.1%	33,689	1,085	10,885	32.4%	1,545	486	2,454	1,950	25.1%	1,188	138	3,300
SH_OP	\$20	5,333	28.7%	2,440	13.1%	18,588	1,343	7,773	41.8%	2,096	753	1,950	1,950	31.5%	1,399	58	2,600

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Joint Application of Peco Energy Company)
And Public Service Electric and Gas)
Company for Approval of the Merger of)
Public Service Enterprise Group)
Incorporated With and Into Exelon)
Corporation)

Docket No. A-110550F0160

AFFIDAVIT OF JOSEPH P. KALT

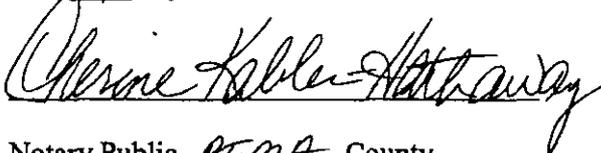
State of Arizona)
County of PIMA)

I, Joseph P. Kalt, being duly sworn, depose and say that the statements contained in the testimony and supporting exhibits of Joseph P. Kalt served on behalf of PPL Electric Utilities Corporation; PPL EnergyPlus, LLC; PPL Brunner Island, LLC; PPL Holtwood, LLC; PPL Martins Creek, LLC; PPL Montour, LLC; PPL Susquehanna, LLC; PPL University Park, LLC and Lower Mount Bethel Energy, LLC in these proceedings are true and correct to the best of my knowledge, information and belief, and I hereby adopt said testimony and supporting exhibits as if given by me in a formal hearing, under oath.

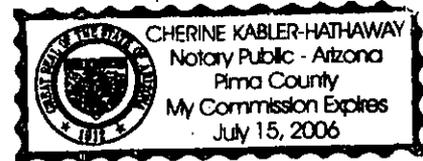


Joseph P. Kalt

SUBSCRIBED AND SWORN to before me
This 24 day of June, 2005



Notary Public PIMA County,
State of Arizona



My Commission expires: 7-15-2006

EXHIBIT JPK-12



U.S. Department of Justice

A-110550F0160
Exhibit JPK-12

Page 1 of 12

Antitrust Division

*Liberty Place Building
325 Seventh Street NW
Washington, DC 20530*

July 21, 2005

**CERTIFIED MAIL
RETURN RECEIPT REQUEST**

Vincent P. Duane
Deputy General Counsel
PJM Interconnection, LLC
955 Jefferson Avenue
Valley Forge Corporate Center
Norristown, PA 19403

DOCKETED
NOV 10 2005

Re: Civil Investigative Demand No.-23713

**DOCUMENT
FOLDER**

Dear Vince:

This letter accompanies a civil investigative demand ("CID") requiring responses to interrogatories and the production of certain documents by PJM Interconnection, LLC ("PJM"), in connection with our investigation of the proposed merger of Exelon Corporation and Public Service Enterprise Group Inc.

Instructions for complying with the CID are contained in the CID form and the attached Schedule. I would also like to call your attention to the certificate of compliance printed on the reverse side of the CID.

The response to the CID is due August 22, 2005. You may produce the materials by delivering them to me at U.S. Department of Justice, Antitrust Division, TEA Section, 325 Seventh Street, N.W., Suite 500, Washington, D.C. 20004.

We do not intend to impose any unnecessary burden on PJM. Therefore, after you have reviewed each request and determined what documents and information are available, the form in which they are available, and the extent of the search required to comply with the CID, please contact me at (202) 307-6318 or Tracy Fisher at (202) 616-1650.

Sincerely,

Mark J. Niefer
Trial Attorney

Enclosure

cc: Paul M. Flynn, Esq.
Wright & Talisman, P.C.

**CIVIL INVESTIGATIVE DEMAND SCHEDULE
PJM INTERCONNECTION, LLC**

Unless modified by agreement with the staff of the Department of Justice, each specification of the Schedule to this Civil Investigative Demand ("Demand") requires a complete search of "the company" as defined in Paragraph "A" of the Definitions and Instructions that appear after the following Specifications. If the company believes that the required search or any other part of the Schedule can be narrowed in any way that is consistent with the Department's need for documents and information, you are encouraged to discuss possible modifications with the Department representatives identified on the last page of this Schedule. All modifications to this Schedule must be agreed to in writing by those representatives.

DEFINITIONS

For purposes of this Demand, the following definitions apply:

1. "PJM," "your company," "the company," "you," or "your" means PJM Interconnection, L.L.C., its domestic and foreign parents, predecessors, divisions, subsidiaries, affiliates, partnerships and joint ventures, and all directors, officers, employees, agents and representatives of the foregoing. The terms "subsidiary," "affiliate," and "joint venture" refer to any person in which there is partial (25% or more) or total ownership or control between the company and any other person.
2. "Exelon" means Exelon Corporation, its domestic and foreign parents, predecessors, divisions, subsidiaries, affiliates, partnerships and joint ventures, and all directors, officers, employees, agents and representatives of the foregoing.
3. "PSEG" means Public Service Enterprise Group Inc., its domestic and foreign parents, predecessors, divisions, subsidiaries, affiliates, partnerships and joint ventures, and all directors, officers, employees, agents and representatives of the foregoing.
4. "Documents" means all written, recorded, and graphic materials and all electronic data of every kind in the possession, custody or control of the company. The term "documents" includes electronic correspondence, drafts of documents, metadata, embedded, hidden and other bibliographic or historical data describing or relating to documents created, revised, or distributed on computer systems, and all duplicates of documents (whether or not identical) in the files of or in the files maintained on behalf of all directors, officers, managers, or other supervisory employees, duplicates of documents in all other files that are not identical duplicates of the originals, and duplicates of documents the originals of which are not in the possession, custody or control of the company. The term "documents" also includes data stored in, or accessible through, computer or other information retrieval systems. Thus, the company should produce documents that exist in electronic form, including data stored in personal computers, portable computers,

workstations, minicomputers, personal data assistants, archival voice storage systems, group and collaborative tools, electronic messaging devices, portable or removable storage media, mainframes, servers, backup disks and tapes, archive disks and tapes, and other forms of online or offline storage, whether on or off company premises. Electronic mail messages should also be provided, even if only available on backup or archive tapes or disks. Unless otherwise agreed to by Department representatives, electronic data shall be printed and produced in hard copy and produced in electronic form. Electronic data shall be produced in a format that allows the Department to use them, together with instructions and all other materials necessary to use or interpret the data. Unless otherwise specified, the term "documents" excludes bills of lading, invoices, purchase orders, customs declarations, and other similar documents of a purely transactional nature and also excludes architectural plans and engineering blueprints.

5. "Including" means including but not limited to.
6. "Identify" means a statement of:
 - (1) In the case of a natural person: his or her name, employer, title or position, business address and telephone number;
 - (2) In the case of a person other than a natural person: its name, type of entity, principal address and telephone number; and
 - (3) In the case of a generating unit: (i) the name by which it is commonly known, (ii) its owners, (iii) its location, and (iv) its in-service and planned retirement dates.
7. "Or" and "and" have both conjunctive and disjunctive meanings.
8. "Person" means any natural person, corporate entity, partnership, limited liability company, association, joint venture, government entity, or trust.
9. "ARR" means Auction Revenue Right as that term is defined in the Amended and Restated Operating Agreement of PJM Interconnection, L.L.C.
10. "FTR" means Financial Transmission Right as that term is defined in the Amended and Restated Operating Agreement of PJM Interconnection, L.L.C.
11. "Ancillary Services" means regulation, spinning reserves, black start service, and capacity.
12. "Energy" means wholesale electricity.
13. "Capacity" means capacity credit as that term is defined in the Amended and Restated Operating Agreement of PJM Interconnection, LLC.

14. "Capacity Market" means the PJM Capacity Credit Market, as defined in the Amended and Restated Operating Agreement of PJM Interconnection, L.L.C., and the bilateral capacity market comprising all bilateral purchases and sales of capacity credits or capacity resources.
15. "PJM Control Area" means the PJM Control Area as that term is defined in the Reliability Assurance Agreement Among Load Serving Entities in the PJM Control Area.
16. The singular form of a noun or pronoun includes within its meaning the plural form of the noun or pronoun, and vice versa.

INSTRUCTIONS

1. The response to this Demand shall be submitted in the following manner:
 - a. Documents provided shall be complete and, unless privileged, unredacted, submitted as found in the company's files (*e.g.*, documents that in their original condition were stapled, clipped or otherwise fastened together or maintained in separate file folders shall be produced in such form). The company may submit photocopies (with color photocopies where necessary to interpret the document), in lieu of original documents, provided that such copies are accompanied by an affidavit of an officer of the company stating that the copies are true, correct, and complete copies of the original documents, and the original documents are maintained by the Company in their original condition until such time that the copies submitted under this Demand are returned to the Company.
 - b. Number each box and mark each box with corporate identification and the name(s) of the person(s) whose files are contained in that box. Documents shall be submitted in sturdy cartons not larger than 1.5 cubic feet.
 - c. Documents submitted shall be produced in the order in which they appear in the company's files and shall not be shuffled or otherwise rearranged. Mark each page with corporate identification and consecutive document control numbers. Place all documents produced in file folders. Mark each file folder with corporate identification, the name of the person whose documents are in the folder and how the original file was labeled. Submit documents that have been printed, for purposes of your response to this Demand, from a common electronic source, such as a central server or an e-mail backup disk, in file folders that are marked with (a) a description of the enclosed documents' electronic source (*e.g.*, "Documents from Backup Tape No. 3 for E-mail Server XYZ, 3/1/04 - 3/31/04"); and (b) the name of each natural person whose electronic documents are contained in that file folder. For data submitted electronically, submit a description of the

data's source.

- d. Provide any index of documents prepared by any person in connection with your response to this Demand. If the index is available in electronic form, provide it in that form.
 - e. If search terms are used to conduct all or any part of the search, provide a list of search terms that were used, along with a glossary of industry and company terminology. In addition, describe the search methodologies and the applications used to execute the search(es).
 - f. If you intend to utilize any deduplication software or services when collecting or reviewing information that is stored in your company's computer systems or electronic storage media in response to this Demand, or if your company's computer systems contain or utilize such software, you must contact the attorneys for the government to determine, with the assistance of the appropriate government technical officials, whether and in what manner your company may use such software or services.
2. Before you prepare documents or information for production in electronic form (for example, before you attempt to copy, for your response to this Demand, documents or information from an electronically stored source onto a disk or other electronic storage medium) you must contact a Department representative to arrange a meeting or conference call with your company's personnel who are familiar with the electronic files in which the documents or information are stored, to explain to Department representatives the manner in which the documents or information are stored, and the types of information that are available on the electronic source. Department representatives must approve the format and production method for electronic data in advance of the submission by the Company of its response to this Demand.
 3. If any documents are withheld from production based on a claim of privilege, provide a statement of the claim of privilege and all facts relied upon in support thereof in the form of a log that includes each document's document control number(s), author(s), addressee(s), all recipients of the original and any copies, date, a description of the subject matter of each document, and the document request(s) of this Schedule to which the document is responsive. In addition:
 - a. Each document withheld must be marked with corporate identification and consecutive document numbers;
 - b. Attachments to a document should be identified as such and entered separately on the log;
 - c. For each author, addressee, and recipient, state the person's full name, title, and

- employer or firm (the company may supply this information on a legend separate from the privilege log);
- d. All attorneys acting in a legal capacity with respect to the communication shall be identified on the log with an asterisk;
 - e. The description of the subject matter shall include the number of pages of each document and shall describe the nature of each document in a manner that, though not revealing information itself privileged, provides sufficiently detailed information to enable the Department to assess the applicability of the privilege claimed;
 - f. For each document withheld under a claim that it constitutes or contains attorney work product, also state whether the company asserts that the document was prepared in anticipation of litigation or for trial and, if so, identify the anticipated litigation or trial upon which the assertion is based;
 - g. Submit all nonprivileged portions of any responsive document (including nonprivileged or redactable attachments) for which a claim of privilege is asserted (except where the only nonprivileged information has already been produced in response to this instruction), noting where redactions in the document have been made;
 - h. The privilege log shall be produced in both hard-copy and electronic form; and
 - i. Documents authored by outside lawyers representing the company that were not directly or indirectly furnished to the company or any third-party, such as internal law firm memoranda, may be omitted from the log.
4. If documents responsive to a particular specification no longer exist for reasons other than the ordinary course of business or the implementation of the company's document retention policy, state the circumstances under which they were lost or destroyed, describe the documents to the fullest extent possible, state the interrogatories or document requests to which they are responsive, and identify persons having knowledge of the content of such documents.
 5. If the company is unable to answer any question fully, supply such information as is available. Explain why such answer is incomplete, the efforts made by the company to obtain the information, and the source from which the complete answer may be obtained. If books and records that provide accurate answers are not available, enter best estimates and describe how the estimates were derived, including the sources or bases of such estimates. Estimated data should be followed by the notation "est." If there is no reasonable way for the company to make an estimate, provide an explanation.

6. Unless otherwise specified, the information and documents requested by this Demand are information and documents in the possession, control or custody of the company that were applicable, effective, prepared, written, sent, dated, or received at any time between January 1, 2002 and thirty days prior to the date of the company's compliance with this request.
7. In order for the company's response to this Demand to be complete, the attached certification form must be executed by the official supervising compliance with this Demand, notarized, and submitted along with the responsive materials.

SPECIFICATIONS

1. Identify, as of the most recent available period, (i) each generating unit in the PJM Control Area, and (ii) the Energy, Capacity, Ancillary Services, or other products the unit is capable of providing.
2. List and describe (i) each reactive transfer limit in the PJM Control Area; and (ii) each transmission system constraint on the 230-kV and above system in the eastern Mid-Atlantic Area Council ("MAAC") portion of the PJM Control Area. For each such limit or constraint:
 - a. provide an overview of the factors significantly affecting hourly transfer capability;
 - b. for every hour the constraint or limit was binding, list the amount of transfer capability and actual flow across the constraint or limit; and
 - c. describe (i) the factors significantly affecting the limit or constraint, (e.g. major transmission line and generating unit outages) and (ii) the sensitivity of the limit or constraint to each factor.
3. For each generating unit or generating plant affecting the limits or constraints identified in your response to Specification 2, list all distribution factors relative to the limits and constraints identified in your response to Specification 2 and an identified reference bus.
4. Describe each element of ARR supply and demand and provide all data regarding requests for ARRs.
5. Describe how ARR revenues are generated and allocated.
6. Identify all persons receiving ARRs and, for each person, state the quantity of ARRs, if any, that were converted to FTRs.

7. For each person receiving ARR revenues:
 - a. identify the person;
 - b. state the time period covered by the ARR revenues;
 - c. state the path covered by the ARR; and
 - d. list the amount of ARR revenues received by path.
8. Describe each element of FTR supply and demand and submit all data related to offers to purchase FTRs.
9. Describe how FTR revenues are generated and allocated.
10. For each person holding FTRs:
 - a. identify the person;
 - b. state the time period covered by the FTRs;
 - c. state the path covered by the FTR; and
 - d. list the amount of FTR revenues received by path.
11. Describe the procedures PJM employs regarding announced retirements of generating units or plants, including (i) procedures regarding evaluation of the need for such units to remain in service to maintain reliability; (ii) procedures regarding compensation for such units determined to be necessary for reliability, and the relation of such compensation to determination of market clearing prices; and (iii) procedures regarding assessments of the economic rationale offered for such retirements. Submit copies of any assessment prepared by PJM of an announced retirement of generating units or plants.
12. For each generating unit or plant in the PJM Control Area, provide (i) the cost data or cost curve and (ii) the market price offer data or offer curve submitted by the unit or plant operator to PJM.
13. List each input price or input price index PJM relies on to perform its market monitoring function, including such prices or indexes used to assess the reasonableness of (i) the cost data or cost curve, or (ii) the market price offer data or offer curve submitted by the unit or plant operator to PJM.
14. With respect to imports into or exports out of the PJM Control Area of Energy or Ancillary Services: (i) describe the major factors affecting the level of such imports and

exports; (ii) list the net imports from or exports to PJM for each hour since October 1, 2004; and (iii) list the available transmission capability to import from or export to each adjacent control area for each hour since October 1, 2004.

15. For each generating unit in the PJM Control Area, list each outage, the reason for the outage, the starting date and time, and the ending date and time of the outage.
16. List load by hour for all electric distribution company ("EDC") zones within the PJM Control Area and, if available, by load serving entity ("LSE") within each zone by hour and submit cross-reference tables needed to identify such EDCs and LSEs.
17. Separately for each block of Energy or Ancillary Services offered for sale or bid for purchase in any PJM market, state:
 - a. the name of the company that submitted the offer or bid;
 - b. the date of the offer or bid;
 - c. the time, day, month, or multi-month period covered by the bid or offer;
 - d. the quantity offered or bid;
 - e. the price offered or bid;
 - f. the extent to which the unit that was the subject of the bid or offer operated to provide the Energy or Ancillary Services;
 - g. the clearing prices for energy and spinning reserves applicable to the unit; and
 - h. whether the bid or offer was mitigated.
18. Separately for each block of Capacity offered for sale or bid for purchase in any PJM market, state:
 - a. the name of the company that submitted the offer or bid;
 - b. the date of the offer or bid;
 - c. the time, day, month, or multi-month period covered by the bid or offer;
 - d. the quantity offered or bid;
 - e. the price offered or bid; and

- f. the clearing prices for capacity applicable to the unit.
19. Submit the following information from PJM's eSchedules system related to bilateral Energy transactions for: (i) all transactions covering any periods from January 1, 2002 to thirty days before your response to which Exelon or PSEG was a party; (ii) all transactions of any party in effect during a recent representative day from each of the spring, summer, fall, and winter seasons; and (iii) all transactions of any party in effect during the period from November 19, 2004 through December 31, 2004. For each such transaction, list:
- a. the name each party and counterparty to the transaction;
 - b. the date of the transaction;
 - c. the time, day, month, or multi-month period covered by the transaction; and
 - d. the quantity specified in the transaction.
20. For each (i) import or export covering any periods from January 1, 2002 to thirty days before your response to this Demand, to which either of Exelon or PSEG was a party, (ii) import or export of any party in effect during a recent representative day from each of the spring, summer, fall, and winter seasons, and (iii) import or export of any party in effect during the period from November 19, 2004 through December 31, 2004:
- a. state the name of the company that imported or exported the Energy;
 - b. state the date the imported or exported Energy was acquired;
 - c. state the time, day, month, or multi-month period covered by the imported or exported Energy;
 - d. state the quantity of imported or exported Energy; and
 - e. describe the firm PJM transmission services used to deliver the Energy to the metered boundaries of the PJM control area
21. Describe each element of Capacity Market supply and demand.
22. Describe how Capacity Market deficiency charges are generated and allocated.
23. Identify each person receiving Capacity Market deficiency charges and for each such person state the amount of deficiency charges received.
24. List all Capacity Market delistings and for each delisting, state:

- a. the name of the delisted unit;
 - b. the reason for the delisting; and,
 - c. the responsible party.
25. Submit all studies, and any workpapers supporting such studies, concerning the proposed acquisition of PSEG by Exelon.
26. Submit all formal studies analyzing market power for Energy, Capacity, Ancillary Services, FTRs, or ARRs in PJM, and submit all supporting workpapers for such analyses; include all documents and supporting workpapers related to analyses of market power under the proposed Reliability Pricing Model.
27. Identify the person(s) responsible for preparing the response to this Demand and submit a copy of all instructions prepared by the company relating to the steps taken to respond to this Demand. Where oral instructions were given, identify the person who gave the instructions and describe the content of the instructions and the person(s) to whom the instructions were given. For each specification, identify the individual(s) who assisted in the preparation of the response, with a listing of the person(s) (identified by name and corporate title or job description) whose files were searched by each.

Any questions you have relating to the scope or meaning of anything in this Demand or suggestions for possible modifications thereto should be directed to Mark J. Niefer at (202) 307-6318 or Tracy L. Fisher at (202) 616-1650. The response to the Request shall be addressed to the attention of Mark J. Niefer and delivered between 8:30 a.m. and 5:00 p.m. on any business day to the Department of Justice, Antitrust Division, Transportation, Energy and Agriculture Section, Suite 500, 325 7th Street, NW, Washington, DC 20004. If you wish to submit your response by United States mail, please call the person listed above for mailing instructions.

EXHIBIT JPK-13

A-110550F0160

William H. Hieronymus - August 17, 2005

Joint Application of PECO Energy Co. and Public Service Electric and Gas Company et al.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

-----x
JOINT APPLICATION OF PECO ENERGY :
ENERGY COMPANY AND PUBLIC SERVICE : Docket Number
GAS COMPANY FOR APPROVAL OF THE : A-110550F0160
MERGER OF PUBLIC SERVICE :
ENTERPRISE GROUP INCORPORATED WITH :
AND INTO EXELON CORPORATION :
-----x

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**DOCUMENT
FOLDER**

DEPOSITION OF WILLIAM H. HIERONYMUS

Washington, DC
Wednesday, August 17, 2005

REPORTED BY:
CARMEN SMITH

William H. Hieronymus - August 17, 2005

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1 redispatches?

2 A Well, it goes -- it goes through -- my
3 nonelectrical engineer's understanding is it goes
4 through an optimization, which is very complicated,
5 that takes into account the shift factors on the
6 constrained -- or constrainable interfaces, the
7 interfaces that are getting tight, redispatching
8 units which may be on either side of the interface
9 but more typically are on the downstream side of the
10 interface.

11 Q The high side?

12 A Yeah. In order to allow more power to
13 flow across it. And so the cost of doing that is
14 optimized up to the limit of where it's no longer
15 economic to do.

16 Q Does that necessarily involve higher
17 prices on downstream side of the interface?

18 A In most cases. I can conceive of a case
19 where you've got a shift factor such that it's
20 actually -- it actually has a negative cost. But as
21 a general matter, I think yes.

22 Q And PJM is a general matter, that is

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1 A More than the East interface taken as a
2 whole, yes. I don't know about lines within the
3 East.

4 Q Do you understand that -- have you -- are
5 you familiar with -- I believe it might have been
6 the market monitor report, if you would bear with me
7 a second. Do you know whether it is the most
8 constrained interface in PJM?

9 A That's what Dr. Kalt says. I have no
10 specific reason to dispute it.

11 Q Now, on page 25 of your testimony, your
12 rebuttal testimony, you note that PJM dispatches
13 around the Bedington-Black Oak constraint.

14 A Sure.

15 Q Why is -- can you explain why you don't
16 divide a market, do a market separation, across that
17 constraint, why that's different from PJM East?

18 A Well, it's not a constraint. I mean, it's
19 a constrainable line. It's not an interface. It's
20 just a path. So I'm not sure how I would have done
21 it in the first place frankly, because I don't know
22 what else to do with the geography if I did it.

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1 Q In that situation?

2 A Yes.

3 Q So he couldn't get it for 50?

4 A That's right.

5 Q If it tried to deliver -- if it promised
6 to deliver in PJM East at 40, it would lose money?

7 A I don't know what promise to deliver in
8 PJM East means. You mean it has a bilateral
9 contract to sell at the PJM bus price?

10 Q Yes. Well, if it had a bilateral -- if it
11 made a contract at 40, if a generator -- or let's
12 say a marketer. If a marketer made a contract to
13 sell at the same price, let's make it simple, I
14 guess, doesn't own the generator, he buys at 40 in
15 the West and sells at 40 or 41 in the East and the
16 LMP price is 50, that marketer would lose his shirt;
17 right?

18 A Yes, they would.

19 Q All right. Now, that -- how would that
20 marketer -- could that marketer hedge that
21 congestion risk? What would a marketer do?

22 A Well, in some notional sense, yes and no.

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1 I mean, obviously, the marketer could buy an FTR,
2 which would pay him the basis differential for the
3 amount of FTRs he bought. You can think of that as
4 a related -- if you want to think of that as a
5 hedge, it's a related transaction, or you can think
6 of it as an unrelated transaction, which is simply
7 betting on what congestion will be worth compared to
8 what you paid for the FTR.

9 Q But the price that a generator or the
10 marketer in this hypothetical paid for the FTR would
11 be essentially a cost of his deal?

12 A Sure.

13 Q You have to add that to the cost of the
14 power itself that he purchased in the West?

15 A That would be his take on it, yes. If --
16 if he viewed them as related transactions.

17 Q And if he didn't view them as related but
18 overall in his business, he'd have to -- if that's
19 the conduct he engaged in he'd have to purchase FTRs
20 so that he didn't -- his bottom line at the end of
21 the year was not negative?

22 A Yeah. All I'm saying is that, you know, a

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1 power marketer can and does purchase FTRs for the
2 year. He may or may not have any power contracted
3 for at the time he buys them, or he may have more
4 power contracted for when he buys. You know,
5 they're not paired transactions, typically.

6 Q Now, you talked in your testimony about
7 ARR. What's your understanding of how ARR are
8 allocated at PJM?

9 A My understanding -- and candidly, my
10 understanding on ARR is a little weak -- is that
11 they were allocated to people who turned over
12 transmission to PJM in the first instance, and that
13 they go with load so that a new load-serving entity
14 that takes part of, say, PSEG's load gets a pro rata
15 share of all the positively valued ARR during the
16 period of time when they served that load.

17 Q And it's your understanding that they're
18 given that free to the load?

19 A Yes. To the load-serving entity.

20 Q To the load-serving entity, right. And
21 how -- what can one do with these ARR within your
22 knowledge?

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1 A As I understand it, you can convert them
2 to FTRs or you can sell them.

3 Q And how would one convert them to FTRs?

4 A I don't know the mechanism exactly. I
5 assume you would just nominate them as such, or you
6 could -- if that doesn't work, you simply bid the
7 highest price and pay it to yourself.

8 Q Well, do you need generation to -- do you
9 need a source to convert it to an FTR?

10 A I think so.

11 Q And FTR is the difference between a point
12 and point?

13 A Point to point.

14 Q So you would need a source. So if you
15 owned -- if you were a load-serving entity --

16 A Well --

17 Q Well, let me step back. Finish your
18 answer.

19 A You need a source point. If you're -- I'm
20 sorry, I may have lost the question. If I've got an
21 FTR, it's point to point and the source is simply
22 the point, and it's the locational price at that

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1 spread, whether or not it could affect it, it would
2 certainly benefit from a higher price spread?

3 A Considering nothing else, like whether
4 they have to serve load at that higher price, for
5 example, that's probably right.

6 Q Well, if they do have to serve load at the
7 higher price, having the FTR hedges the cost of
8 serving load at that higher price?

9 A Up to the amount of the FTR.

10 Q And would -- if a -- an entity held FTRs
11 across that eastern interface, would its ownership
12 of FTRs provide an incentive --

13 A A --

14 Q An incentive to exercise market power if
15 it had the ability to exercise market power?

16 A Considered narrowly, perhaps. But I think
17 the key point is it doesn't impart any ability to do
18 so.

19 Q But it could provide an incentive?

20 A Yes. If I get -- if I have more megawatts
21 that get effectively the east price, again
22 considering nothing else, I'm better off than if I

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1 had fewer megawatts. But, you know, the key point
2 in allocating transmission is not that. It's who
3 has the ability to affect price in the constrainable
4 or in the downstream market by the way they price or
5 withhold generation.

6 Q But you wouldn't -- let me see if I
7 understand. You're not suggesting that we only look
8 at the -- in determining market shares, for example,
9 conducting HHI analyses and concentration analyses,
10 you're not suggesting, are you, that we only look at
11 units that are capable of being withheld, are you?

12 A I'm not sure I followed the question.

13 Q Well, let me give you an interrogatory
14 answer you gave, not to us but to someone else.
15 Let's mark this as number 8.

16 (PPL Exhibit 8 identified.)

17 MR. KAPLAN:

18 Q It was an OCA, sorry. Have you had a
19 chance to look at that? Do you recall the --

20 A Yes.

21 Q And could you describe your understanding
22 of the question and the answer? Because I will tell

William H. Hieronymus - August 17, 2005

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1 excluding -- it's not appropriate to exclude the
2 units that have no ability, you should include the
3 units that have -- that provide the incentive as
4 well in the analysis?

5 A Well, what I basically am saying, this is
6 what FERC tells us to do. But that's the reason,
7 presumably, why they're telling us to do it.

8 Q And in this particular instance, the
9 nuclear -- you counted the nuclear units, because
10 the nuclear units provide that incentive?

11 A Well, they also -- it's more than that. I
12 mean, the nuclear units -- well, nuclear units may
13 be a bad example. But nonmarginal units also
14 contribute to price formation. They do matter. I
15 accepted the hypothetical in the question, which is
16 to say I can't withhold them. That's broadly true
17 of nuclear units.

18 But in general, everything that is in the
19 supply stack has some implication for what the price
20 is.

21 Q And the nuclear unit obviously has --
22 would have a high opportunity cost for withholding a

William H. Hieronymus - August 17, 2005

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1 nuclear unit?

2 A Sure.

3 Q That's one of the reasons why you normally
4 would not?

5 A That's right.

6 Q Very high economic penalty for
7 withholding?

8 A Yes.

9 Q But it could provide the incentive to
10 withhold something else, as you just said?

11 A That's right.

12 Q Would it be appropriate to look at an FTR
13 ownership in the same light, can't withhold it but
14 you profit by price increase?

15 A It has that characteristic. Again, we've
16 got to decide -- what we're talking about here, at
17 least in the dispute with Professor Kalt, is how I
18 allocate imports. And I've got to choose. Do I
19 allocate them according to who can withhold
20 generation or bid up generation, or who is the
21 holder of the passive FTR that kind of benefits from
22 that, insofar as they're different.

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1 nonnuclear generation, by reason of combining the
2 generation, nuclear generation, was fully mitigated.
3 And that is the sense in which it disciplines
4 prices.

5 Q It goes entirely to the incentive, not the
6 ability?

7 A Well, it goes also to -- I'm not sure how
8 to parse ability. It goes to my incentive to do it
9 and to my ability to do it, insofar as one believes
10 I could have actually withheld nuclear capacity. It
11 assures basically that the capacity will be made
12 available to the market, at least gives me a very
13 strong incentive to do that. And the megawatts are
14 there. I don't quite know what more to say about
15 it.

16 Q Well, it's clear that the buyers on this
17 virtually divested capacity, they all have no say
18 over how the units are run.

19 A No direct say, that's correct.

20 Q And they won't decide maintenance
21 schedules. Do you agree?

22 A That's likely.

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Joint Application of PECO Energy Co. and Public Service Electric and Gas Company et al.

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1 Q Okay. And they won't, for example,
2 participate in decisions as to whether or not to
3 increase the capacity of a nuclear unit?

4 A No, my understanding is that they get a
5 fixed amount because there are not unit
6 entitlements. Now, some of the bilateral contracts
7 that are hypothetically available without a market
8 party may have a different -- but when you're
9 talking about the three-year auction, that certainly
10 is the case.

11 Q Do you have any views on the likelihood
12 that the 15-year product will be attractive?

13 A I can tell you the commercial people in
14 the company insisted on keeping that flexibility,
15 because they think it has considerable market
16 attraction.

17 Q What kind of buyers?

18 A I don't know whether I ought to be saying
19 all of this, whether it's commercially sensitive.

20 Q We're all subject to the protective order,
21 and we have no market people here in the deposition.

22 A Well, you know, but I think part of what

EXHIBIT JPK-14

A-110550F0160

Exhibit JPK-14
Page 1 of 2

Direct Dial: 215 841 4941

April 11, 2005

Tanya J. McCloskey, Esquire
Sr. Assistant Consumer Advocate
Commonwealth of Pennsylvania
Office of Consumer Advocate
Forum Place – 5th Floor
555 Walnut Street
Harrisburg, PA 17101-1923

DOCKETED
NOV 10 2005

**DOCUMENT
FOLDER**

**RE: Joint Application of PECO Energy Company and Public Service
Electric And Gas Company for Approval of the Merger of Public
Service Enterprise Group Incorporated with and into Exelon Corporation
Docket No. A-110550F0160**

Dear Ms. McCloskey:

Enclosed please find PECO Energy Company's answers to the following discovery requests:

OCA Set V – Nos. 1 – 16, 19 – 20, 22 - 23 and 26.

Sincerely,

Kent D. Murphy

KDM:mb
Enclosure

cc: Service List

OCA-V-6

Dr. Hieronymus states (page 6, line 11) that in his analysis of PJM market competitiveness, essentially all generation is economic and counted as being in the market. Since nuclear units are poor choices for withholding of output or other strategic bidding behavior (see Exhibit J-1, page 4), please explain why is it appropriate to include them (and the load that they effectively serve) in an analysis of market competitiveness. Similarly, why is it appropriate to include other deep baseload resources (e.g., must-take power purchase contracts, generating units with variable costs far below the typical market clearing price) and the load that they serve in the market competitiveness analysis?

Response to OCA-V-6

Note first that the statement is taken out of context and refers only to the summer superpeak period. In other periods, only subsets of capacity are counted as being in the market. Structural market power measures are used to evaluate both the ability and incentive to exercise market power. While a lack of *ability* to exercise market power may exist with respect to some units, there may theoretically remain an *incentive* to exercise market power (e.g., nuclear units may earn extra profits if other units can be withheld to raise market prices). For this reason, it is appropriate when measuring market shares to include all capacity that receives market prices. Moreover, Dr. Hieronymus's analysis is consistent with the Delivered Price Test ("DPT") required by FERC. Indeed, it is the analysis that FERC's regulations require. Under the DPT, the Economic Capacity analysis requires consideration of all supply that is economic and deliverable. The Available Economic Capacity analysis takes into account native load obligations and assumes that the lowest-cost resources (e.g., baseload generation and must-take purchases) are used to serve native load.

Responsible Witness: William H. Hieronymus

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

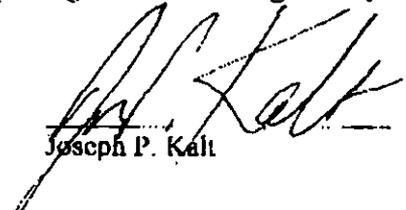
Joint Application of Peco Energy Company)
And Public Service Electric and Gas)
Company for Approval of the Merger of)
Public Service Enterprise Group)
Incorporated With and Into Exelon)
Corporation)

Docket No. A-110550F0160

AFFIDAVIT OF JOSEPH P. KALT

State of Montana)
County of Carbon)

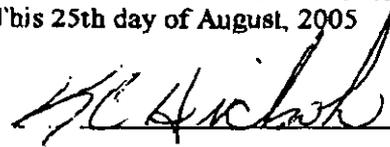
I, Joseph P. Kalt, being duly sworn, depose and say that the statements contained in the surrebuttal testimony and supporting exhibits of Joseph P. Kalt served on behalf of PPL Electric Utilities Corporation; PPL EnergyPlus, LLC; PPL Brunner Island, I.I.C; PPL Holtwood, I.I.C; PPL Martins Creek, LLC; PPL Montour, I.I.C; PPL Susquehanna, LLC; PPL University Park, LLC and Lower Mount Bethel Energy, LLC in these proceedings are true and correct to the best of my knowledge, information and belief, and I hereby adopt said testimony and supporting exhibits as if given by me in a formal hearing, under oath.


Joseph P. Kalt

SUBSCRIBED AND SWORN to before me
This 25th day of August, 2005



K.C. HICKOK
NOTARY PUBLIC - MONTANA
Residing in Bridger, Montana
My Commission Expires: _____


Notary Public Carbon County,
State of MT

My Commission expires: 7-2-2007