



3. The sole purpose of this Affidavit is to inform the Commission that demand response programs – even those programs that are cost effective on an economic basis – cannot eliminate the need to buy and sell balancing energy. For operational reasons, a proposal that attempts to replace balancing energy with demand response would not work. Adopting a plan that attempts to replace balancing energy with a demand response program would ultimately subject customers to additional costs for deviations between flawed day-ahead estimates and actual real-time purchases.

4. The Citizens Utility Board (“CUB”) argues that “Demand Response Resources Can Effectively Balance Loads.” CUB Supp. at 3. ComEd’s filings recognize that effective demand response programs have an important role. However, it is critical that the Commission understand the operational limitations of these programs. In particular, demand response programs simply cannot supplant the need to acquire or sell energy as required to balance load with generation, essentially in real time.

5. Especially in the context of a procurement process where supply is to be procured using “standard wholesale products,” ComEd will of operational necessity be required to purchase and, in all likelihood, also sell significant quantities of spot market energy throughout the year in order for demand and supply to be balanced.

6. The need to buy and sell energy to balance load and supply does not depend on the limitations of particular demand response programs, on a lack of time to implement such programs, or on a lack of money to fund it. Even if additional demand resources could theoretically be acquired and deployed by June 1, 2008, even if such resources were fully dispatchable (many demand response programs are not), and even if potential customers would continue to participate if their load was interrupted with the high degree of frequency required if

ComEd were to attempt to use such programs as an hourly load balancing tool, demand resources could not eliminate spot market purchases and sales for balancing purposes. Even with such an idealized and unrealistic demand response program in place, real-time demands simply could not be measured and fully met by demand resources for operational reasons.

7. There are several reasons why demand response programs cannot eliminate the differences between actual demand and pre-arranged supply that must be offset in the balancing energy market.<sup>1</sup> **First**, for an electric system to be operated in balance, load (including transmission and distribution losses) must equal generation at all times under all conditions. The demand of loads connected to the ComEd system is dynamic, *i.e.*, it changes day-to-day, hour to hour, minute to minute, and second to second. When the PJM RTO balances the load and supply on ComEd's system (and on the other systems that it also operates) as required by national NERC Standards, ComEd will be required to either purchase energy to make up a deficit or sell energy to offset a surplus. Moreover, ComEd will have to maintain that balance at all times. Thus, even if ComEd could perfectly estimate its peak loads a day ahead, for example, and could procure energy (net of any demand resources deployed) based on this predicted peak, the energy actually needed not just from hour to hour, but also at different times within each hour (PJM sets prices every five minutes), would still always be different. That difference must be made up by balancing energy.

8. **Second**, much of the energy required under ComEd's plan (the portion that is not procured under pre-existing SFCs) will be acquired using "standard products." Such products are not load following and, by definition, are not shaped intra-hour or intra-day. Even

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<sup>1</sup> To the extent that Mr. Thomas defines using demand resources to balance loads as using it "to reduce demand when prices are high" (CUB Exhibit 1.0 at lines 249-250), he misunderstands the function of balancing load with generation. Using demand response programs in an effort to mitigate total energy purchases during atypically high priced hours is a different function entirely from attempting to use demand response to balance the system.

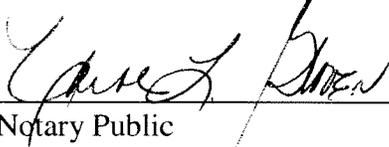
if Mr. Thomas were correct that there are "standard" demand side products, those products would be no more effective at eliminating the inevitable imbalances between predicted load and arranged supply than standard supply products. The fact remains that any attempt to meet or reduce the supply obligation in advance, whether using supply or demand resources, will except by wild coincidence not match the actual hourly load and will thus not eliminate the need to participate in the day-ahead and real-time spot markets for balancing energy.

9. **Third**, as a practical matter, demand response cannot be dispatched with sufficient speed and agility to eliminate the need for balancing energy. To accomplish that, the quantity of demand reduction would have to be -- literally -- continually adjusted to keep total demand pegged to the sum of the pre-arranged supply. Even with perfect metering, telemetry, and control systems, that is simply not realistic. Demand response resources, especially ones that rely on voluntary participation, cannot substitute for the ability of supply resources to respond continuously and precisely, up and down, numerous times each and every day.

10. Finally, there is no explanation in either CUB's supplemental comment or in Mr. Thomas' supplemental affidavit of how he believes a demand response resource could be used for load balancing. While effective demand response programs have important roles, supplanting the need for balancing energy is not one of them.

FURTHER AFFIANT SAYETH NOT.

SUBSCRIBED AND SWORN to  
before me this 30<sup>th</sup> day of November, 2007

  
\_\_\_\_\_  
Notary Public

  
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Steven T. Naumann



**Steven T. Naumann**  
**Biographical Summary**

Mr. Naumann received a Bachelor of Science degree in Electric Power Engineering in 1971 and a Master of Engineering degree in Electric Power Engineering in 1972, both from Rensselaer Polytechnic Institute in Troy, New York. He received a J.D. degree from Chicago-Kent College of Law in 1988. Mr. Naumann is a Registered Professional Engineer in the State of Illinois and is licensed to practice law in the State of Illinois.

After Mr. Naumann received his Master's degree in 1972, he served as an engineering officer in the United States Air Force, and was assigned as the Base Electrical Engineer at Reese Air Force Base, Texas. Upon leaving active military duty in 1975, Mr. Naumann joined Commonwealth Edison Company ("ComEd") and has been continuously employed by ComEd until his transfer to his present position at Exelon Corporation, ComEd's ultimate parent.

Mr. Naumann's initial assignment with ComEd was as an Engineer. He was assigned to a six-month "Graduate Development Program" during which he rotated among five engineering assignments. In December 1975, Mr. Naumann was assigned to the Technical Studies Section of the System Planning Department, where his duties involved the performance of stability, dynamic, transient switching, and other detailed studies of the ComEd transmission system. In 1978, he was assigned to the office of the Vice President of Engineering.

Later in 1978, Mr. Naumann was temporarily assigned to the Mid-America Interconnected Network ("MAIN"), first as Assistant Systems Power Coordinator and later as Systems Power Coordinator. In those positions, he was responsible for interconnection and extreme disturbance studies performed by MAIN, as well as monitoring of interconnected operations. As Systems Power Coordinator, he supervised the MAIN Coordination Center, including all engineering and operations functions.

In 1980, Mr. Naumann returned to ComEd as assistant head of the Technical Studies Section. The section was then responsible for dynamic and transient analyses of the ComEd system and surrounding systems as well as reactive or voltage planning of the ComEd transmission system.

In late 1988, Mr. Naumann was assigned as Research Engineer on the staff of the Vice President of Engineering. In 1990, he returned to the System Planning Department, and was placed in charge of the Technical Studies Section. In 1991, he was promoted to Section Engineer, and the duties of the Technical Studies Section were expanded to encompass interconnection planning studies, including ComEd's participation in MAIN studies. In 1993, an Interconnection Planning Section was formed in the System Planning Department, and Mr. Naumann was named Director of that section.

As Interconnection Planning Director, Mr. Naumann supervised the activities of the Interconnection Planning Section that included all interconnection studies, including the ComEd portion of MAIN studies, analysis of the transmission system in response to requests for bulk power sales, purchases and wheeling, and analysis of impacts of parallel flows on ComEd's transmission system.

As Interconnection Planning Director, and previously as Section Engineer, Mr. Naumann was assigned as the representative of the Northern Illinois subregion of MAIN to the MAIN Transmission Task Force Steering Committee. This Committee was responsible for directing MAIN regional and interregional studies, reviewing such studies, and recommending approval of such studies to the MAIN Engineering Committee. At various times, he has been Chairman of the MAIN Transmission Assessment Studies Group, responsible for conducting seasonal transmission assessment studies, Chairman of the MAIN Future Systems Studies Group,

responsible for conducting future interchange and extreme disturbance studies, and a member of the MAIN-ECAR-TVA (“MET”) Coordination and Data Exchange Committee, responsible for devising procedures for exchanging information on transfers and identifying actions to take during transmission system emergencies.

In 1995, Mr. Naumann was transferred to the Wholesale Marketing Department as Director of Market Analysis in charge of market analyses in support of ComEd’s wholesale sales. While in that position, he also served as a representative on the Real-Time Information Networks “What” Group, which was a group of diverse industry participants that commented to the Federal Energy Regulatory Commission (“FERC” or “Commission”) on what information should be posted on the electronic information-sharing system that became known as the OASIS. He also testified at a FERC Technical Conference on Ancillary Services in 1995.

In January 1996, Mr. Naumann was named Director of T&D Regulatory Services. In that position, he directed the work of the T&D Regulatory Services Department. The Department’s responsibilities included the preparation and filing of tariffs and service agreements with FERC, administering those tariffs, and providing cost justifications where required. As part of administering ComEd’s Open Access Transmission Tariff (“OATT”), Mr. Naumann was responsible for determining the propriety of rate discounts for transmission services and interpreting the tariff. Mr. Naumann testified before FERC on independent system operator (“ISO”) issues in April 1998 and June 1998. He also served as a member of the NERC Interconnected Operations Services Working Group that issued a report in March 1997 providing additional technical information on ancillary services and other services needed for reliability of the interconnected system. In addition, he was a member of the Commercial Practices Working Group (“CPWG”) that provided an industry forum to discuss and resolve business practice issues

related to the operation of bulk power electric systems in North America. Mr. Naumann later was the MAIN representative on the Interim Market Interface Committee, the CPWG's successor and the IOU representative on the Market Interface Committee.

In October 1999, Mr. Naumann was promoted to Vice President, Transmission Services. In that position, he had executive responsibility for transmission service provided by ComEd to third parties, including the interconnection of new generation to the ComEd transmission system, and had executive responsibilities for ISO and later regional transmission organization ("RTO") development.

In February 2003, Mr. Naumann assumed his present position as Vice President, Wholesale Market Development of Exelon Corporation. He has executive responsibilities for development of markets nationwide, and is one of a team of Exelon executives involved in development of RTO policy, including the integration of ComEd into the PJM Interconnection, L.L.C. ("PJM"), completed in May 2004. Mr. Naumann directs the development of Exelon policy on numerous market issues related to PJM, Midwest Independent Transmission System Operator, Inc. ("MISO"), and the Southwest Power Pool, and in other areas of the country. These issues include questions of capacity requirements, generation retirements, station power, ancillary services markets, reliability must run rules, reactive power compensation, transmission cost allocation and general market structure and development. Mr. Naumann previously served as Vice Chairman of the MAIN Board of Directors and was on the Interim Board of Directors of ReliabilityFirst Corporation. He is one of the representatives for the Investor-owned Utility Sector on the NERC Member Representatives Committee, served for a number of years on the NERC Stakeholders Committee and starting in 2008 will be Vice Chairman of the NERC Member Representatives Committee.

**Testimony**Before the Federal Energy Regulatory Commission

Commonwealth Edison	ER93-777-000, ER95-1545-000, ER95-1539-000, and ER95-371-000
Ancillary Services	RM95-8 (Oct. 26, 1995)
IES Utilities (Alliant Merger)	EC96-13-000, ER96-1236-000, and ER96-2560-000
Midwest ISO	ER98-1438-000, EC98-24-000
ISO Policy	PL98-5-000 (Apr. 16, 1998) PL98-5-004 (June 4, 1998)
AEP-CSW	EC98-40-000, ER98-2770-000 and ER98-2786-000 (withdrawn)
Commonwealth Edison	ER01-2992-000
Unicom-PECO Merger	EC00-26-000
SMD	RM01-12
	RTO Markets and Design: Optional RTO Markets (Oct. 15, 2001)
	Transmission Rights and Financial Rights (Feb. 5, 2002)
AEP Integration Into PJM	ER03-262-009
Joint Boards on Security	AD05-13-000 (PJM/MISO)
Constrained Economic Dispatch	
PJM Rate Design	EL05-121
SECA Case	EL02-111 et. al
PJM RPM Technical Conference	EL05-148
OATT Reform Technical Conference	RM05-17, RM05-25

Before the Illinois Commerce Commission

Docket No. 95-0314/0338	
Docket Nos. 98-0147/0148 (State IDC/Standards of Conduct)	
Docket No. 98-0649 (ARES Certification)	
Docket No. 98-0680 (ComEd Unbundled Tariff Provisions)	
Docket No. 98-0745 (ComEd Elwood CCPN)	
Docket No. 98-0818 (MISO)	
Docket No. 98-0894 (ComEd Transmission/Distribution Refunctionalization)	
Docket No. 99-0117 (ComEd DST)	
Docket Nos. 99-0124/0125/0132/0133 (Alliant DST)	
Docket No. 00-0259 (ComEd MVI)	
Docket No. 01-0423 (ComEd DST)	
Docket No. 05-0159 (ComEd Procurement)	
Docket No. 06-0800 (Auction Improvement)	
Electric Policy Committee (FERC SMD)	Oct. 15, 2002

Public Service Commission of Wisconsin

Docket Nos. 6630-UM-100, 4420-UM-101 (Primergy Merger)
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Other

McHenry Co. Zoning Board of Appeals (Special Use Permit re: Reliant IPP)

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Naumann, S.T., *Transmission Expansion, Boom or Bust*, Presented at Energy Bar Association, Midwest Energy Conference (March 7, 2007).

Naumann, S.T., *Planning and Siting Under Various Transmission Business Models*, Presented at the National Commission on Energy Policy (July 18, 2006). Available at [http://www.energycommission.org/files/contentFiles/21\\_Naumann\\_-\\_Business\\_Models\\_Exelon\\_44c1254e9b090.ppt](http://www.energycommission.org/files/contentFiles/21_Naumann_-_Business_Models_Exelon_44c1254e9b090.ppt)

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