HUNTON&
WILLIAMS

HUNTON & WILLIAMS LLP
1900 K STREET, N.W.
WASHINGTON, D.C. 20006-1109

TEL 202 • 955 • 1500
FAX 202 • 778 • 2201

TED J. MURPHY
DIRECT DIAL: 202-955-1588
EMAIL: tmurphy@hunton.com

FILE NO: 55430.000072

July 22, 2010

Ms. Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: Errata filing of New York Independent System Operator, Inc.
Docket Nos. EL07-39-006 and ER08-695-004

Dear Ms. Bose:

On July 21, 2010, the New York Independent System Operator, Inc. ("NYISO") submitted a *Request for Leave to Answer and Answer* in the above captioned proceedings. That pleading refers to the affidavits of Nicole Bouchez, Ph.D. and Eugene T. Meehan which were inadvertently omitted when the pleading was electronically filed. Attached hereto are the inadvertently omitted affidavits. I herby certify that copies of this letter, and the affidavits, will be served on all parties in these proceedings concurrent with their electronic submission to the Commission..

Sincerely,

/s/ Ted J. Murphy
Ted J. Murphy
Counsel for the
New York Independent System Operator, Inc.

AFFIDAVIT OF
NICOLE BOUCHEZ, PH.D.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc. Docket Nos. EL07-39-006
ER08-695-004

AFFIDAVIT OF NICOLE BOUCHEZ, PH.D.

1. My name is Nicole Bouchez. I am the Manager, Market Mitigation and Analysis, for the New York Independent System Operator, Inc. ("NYISO"). My responsibilities include undertaking all of the functions assigned to the NYISO and its Market Mitigation and Analysis Department under Attachments H and O of the NYISO's Market Administration and Control Area Services Tariff ("Services Tariff"). My responsibilities with respect to Attachment H include the implementation of the New York City ("In-City") Installed Capacity ("ICAP") Offer Floor market power mitigation mechanism that is now at issue in these proceedings.

2. I have worked as an economist in the energy industry for seven years and I have held my current position for three years.

3. I hold a Ph.D. and a M.A. in International Economics from the University of California, Santa Cruz and a B.A. in Economics and International Relations from the University of California, Davis.

4. I am submitting this affidavit in support of the NYISO's answer in these proceedings to the *Request for Rehearing* of the Independent Power Producers of New York, Inc. ("IPNNY Request"), the similar requests submitted by two individual ICAP Suppliers,[1] and the *Request for Leave to Answer and Answer* of the New York Transmission Owners ("NYTO Answer").

5. Specifically, it is my view, based on my years of experience implementing Attachment H, that the NYISO is correct that the Commission's May 20 Order was not unreasonable and is adequately supported by record evidence when it directed the NYISO to revise the manner in which the Offer Floor applicable to uneconomic entry by ICAP Suppliers, other than Special Case Resources ("SCRs"), is calculated.

6. In a May 6, 2008 compliance filing, the NYISO proposed[2] to set the Offer Floor at a level equal to 75% of Net CONE, which is defined in Attachment H as the "localized levelized embedded costs of a peaking unit in the New York City Locality, net of the likely projected annual Energy and Ancillary Services revenues of such unit, as determined in connection with establishing the Demand Curve for the New York City Locality . . . ." The NYISO's May 6, 2008 proposal had

---

[1] The NRG Companies and TC Ravenswood, LLC.

[2] *New York Independent System Operator Inc.*, Second Compliance Filing of and Request for Waiver of the New York Independent System Operator, Inc. Implementing New York City ICAP Market Mitigation Measures, Docket No. ER08-695-001 (filed May 6, 2008).

equated Net CONE for mitigation purposes with the price on the In-City ICAP Demand Curve that corresponded to 100 percent of the In-City ICAP Requirement.

7. The NYTOs challenged the NYISO's proposal in two 2008 filings which advanced the arguments that are summarized in the NYISO's answer. The May 20 Order accepted these arguments and ordered the NYISO to set the Offer Floor for Installed Capacity Suppliers (other than SCRs) based on 75% of a Net CONE value that equated to the price on the ICAP Demand Curve corresponding to a higher percentage of excess on the Demand Curve than the In-City ICAP requirement ("Adjusted Percentage").

8. The record in these proceedings supports the May 20 Order's determination. The NYTOs argued in their May 27, 2008 comments that "the average In-City ICAP price that will be observed, if the expectations upon which the In-City ICAP Demand Curve is based are correct, is the price on the In-City ICAP Demand Curve that corresponds to 104 percent of the In-City ICAP Requirement. . . ."[3] *i.e.*, to the same Adjusted Percentage that the May 20 Order directed the NYISO to use for mitigation purposes. The NYTOs also referred to March 2008 Order's recitation of the NYISO's December 2007 reply comments that "when the NYISO proposed setting the offer floor at 75 percent of Net CONE," it "intended to provide

[3] *New York Independent System Operator Inc.*, Comments of the New York Transmission Owners at 4, Docket No. ER08-695-001 (filed May 27, 2008) ("NYTO May 2008 Comments"), *see also New York Independent System Operator Inc.*, Request for Rehearing of the New York Transmission Owners at 5, Docket Nos. EL07-39-000 and ER08-695-000 and 001 (filed October 30, 2008).

a leeway of more than 400 MW to recognize the scale of economic new unit entry."[4]

9. The May 20 Order is also consistent with the Commission's original rationale for setting the Offer Floor at a level equal to 75 percent of Net CONE. The Commission reasoned that it was necessary to prevent uneconomic entry that would depress In-City ICAP prices below just and reasonable levels,[5] and that the proposed Offer Floor would effectively deter uneconomic entry without being so high as to deter economic entry.[6] The Commission had also concluded that setting the Offer Floor at that level was consistent with its precedent from other organized capacity markets.[7]

10. In addition, the May 20 Order's directive regarding the Offer Floor calculation is reasonable because the NYISO's most recently completed Demand Curve reset process established, with respect to the currently effective Demand Curves, that the four percent excess was reasonable over a reasonable time horizon. The 75 percent

---

[4] NYTO May 2008 Comments at 7, *citing New York Independent System Operator, Inc.*, 122 FERC ¶ 61,211 at P 96 (2008) ("March 2008 Order") and *New York Independent System Operator Inc.*, Reply Comments of the New York Independent System Operator, Inc. at 16 (filed December 12, 2007).

[5] March 2008 Order at P 100.

[6] *Id.* at P 107.

[7] *Id.*

level provides a reasonable amount of leeway given the potential scale of new economic entry.[8]

11. It is my understanding that the rationale supporting the calculation of the Offer Floor differs from the rationale that justifies the establishment of the reference price as part of the ICAP Demand Curve reset process. I understand that the latter subject is addressed in the affidavit of Mr. Eugene Meehan.

12. This concludes my affidavit.

---

[8] *New York Independent System Operator Inc.*, Reply Comments of the New York Independent System Operator, Inc. at 16, Docket No. EL07-39-000 (filed December 12, 2007).

ATTESTATION

I am the witness identified in the foregoing affidavit. I have read the affidavit and am familiar with its contents. The facts set forth therein are true to the best of my knowledge, information and belief.

Nicole Bouchez, Ph.D.
Manager, Market Mitigation and Analysis
New York Independent System Operator, Inc.

Subscribed and sworn to before me
this 21 day of July, 2010.

Diane L. Egan

Notary Public

My commission expires: March 21, 2013

DIANE L. EGAN
Notary Public, State of New York
Qualified in Schenectady County
No. 4924890
Commission Expires March 21, 20 13

AFFIDAVIT OF
EUGENE T. MEEHAN

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc. Docket Nos. EL07-39-006
ER08-695-004

AFFIDAVIT OF
EUGENE T. MEEHAN

1. I, Eugene T. Meehan, submit this affidavit in support of *Request for Leave to Answer and Answer* of the New York Independent System Operator, Inc. ("NYISO") in the above captioned proceedings. The NYISO's answer responds to the *Request for Rehearing* of the Independent Power Producers of New York, Inc. ("IPNNY Request"), the similar requests submitted by two individual ICAP Suppliers[1], and the *Request for Leave to Answer and Answer* of the New York Transmission Owners ("NYTOs' Answer").

2. I am a Senior Vice President at NERA Economic Consulting ("NERA"). I have over 35 years of experience consulting on regulatory and market issues related to the electricity industry and have worked for electric utilities, regulators and governments. I have provided expert testimony before this Commission, various state regulatory bodies and in courts and arbitration proceedings. Attachment 1 sets forth my qualifications in greater detail.

3. In 2007, NERA was retained by the NYISO to provide an independent perspective on the update of the Demand Curves[2] for the period from May 1, 2008 to April 30, 2011. I directed that effort and developed the methodology to "levelize" the investment in a new peaking unit

[1] The NRG Companies and TC Ravenswood, LLC.

[2] Capitalized Terms that are not otherwise defined herein shall have the meaning specified in Article II, or Attachment H, of the NYISO's Market Administration and Control Area Services Tariff ("Services Tariff").

that was used in that update. Levelization refers to the process of converting the investment to an annual value that provides for a return on and of capital.

4. I have been asked by the NYISO to prepare an affidavit that describes the calculation of the net cost of new entry used to establish the Demand Curves in NYISO's Installed Capacity ("ICAP") market and to address the issue of whether the price value on the New York City Demand Curve at 100% of the required In-City capacity level equals the localized levelized embedded costs of a peaking unit in the New York City Locality, net of the likely projected annual Energy and Ancillary Services revenues of such unit, as determined in connection with establishing the Demand Curve for the New York City Locality pursuant to § 5.14.1(b) of the Services Tariff; that is, the concept referred to in the context of the Demand Curves as "Net CONE".

5. The NYISO has asked me to address this issue in order to clarify and explain that the value of the New York City Demand Curve at 100% of the minimum required capacity level is equal to Net CONE. Absent such a clarification, it is possible that the Commission's May 20, 2010 determination on the term Net CONE for purposes of In-City ICAP mitigation could be erroneously applied to the development of the Demand Curves used in NYISO's ICAP market.

6. It is my unequivocal opinion that the value of the Demand Curve at 100 percent of the minimum required capacity level best represents the localized levelized embedded costs of a peaking unit in the New York City Locality, net of the likely projected annual Energy and Ancillary Services revenues of such unit, as determined in connection with establishing the Demand Curve for the New York City Locality pursuant to § 5.14.1(b) of the Services Tariff,

or Net CONE as that term is used in the 2008-2011 Demand Curves. I offer this opinion having developed the methodology used in the Demand Curve reset.

7. Net CONE for the 2007 Demand Curve reset for the New York City Locality was developed from the following parameters:

    - The investment required to construct an LMS 100;

    - The carrying charge or percentage of the investment that must be realized each year in order to provide a return on and of capital over the economic life of the investment;

    - Other annual fixed expenses such as fixed O&M, site leasing, insurance and property taxes; and,

    - An estimate of the annual net energy and ancillary service revenue that the LMS 100 would earn if installed capacity was just slightly above the minimum required level.

8. Consistent with the Services Tariff requirements for establishing the Demand Curve (§5.14.1(b)), Net CONE was developed by multiplying the investment by the carrying charge rate adding other annual fixed costs and subtracting annual net energy and ancillary service revenues that would prevail if Installed Capacity was just slightly above the minimum required level.

9. The investment used in the 2007 Demand Curve reset was developed by Sargent and Lundy, LLC., ("Sargent and Lundy"), an engineering firm with expertise in estimating the cost of constructing new power plants. The net energy revenues were developed by NERA using an econometric model. The levelization of the investment costs was developed by NERA using standard levelization formulas which were executed by Sargent and Lundy based on inputs from NERA. Those inputs included the assumed capital structure, costs of capital, amortization period and inflation rate.

10. NERA assumed an investment grade capital structure of 50% debt and 50 % equity with a debt cost of 7% and an equity cost of 12.0%. Having specified an investment grade capital structure and costs of capital, these values can be observed using market data. NERA assumed an inflation rate of 2.9%. This assumption was based on prevailing consensus forecasts. NERA then asked Sargent and Lundy to calculate economic carrying charge rates for amortization periods ranging from 10 to 35 years using these inputs. An economic carrying charge is also referred to as real carrying charge as it is developed in constant or real dollars and assumes that each year will see the nominal revenue recovery rise at the rate of inflation. This is the reason that the rate of inflation is an input in the development of the carrying charge.

11. The calculation described above provides only various possible values for the carrying charge. In order to determine a single value it is necessary to select a single value for the amortization period. Unlike the other inputs which are guided by observable third party forecasts or market data, the amortization period cannot be observed. It is the period over which the investor will seek to fully recover the capital invested and a return on that capital.

It is a critical value as the amortization period directly affects the carrying charge rate. Just as a 15 year mortgage will have a higher monthly payment than a 30 year mortgage, the economic carrying charge rate for a 15 year amortization period will be higher than that for a 30 year amortization period.

12. The amortization period does not necessarily correspond to the potential physical life of the facility. It is an economic concept. While a house may well last for well over a century, mortgages tend to be limited to 30 years. The amortization period corresponds to the period over which an investor would reasonably seek to recover invested capital.

13. The most typical method for determining the amortization period would be to make an assumption using informed judgment. PJM, for example, makes such an assumption and uses 20 years as the amortization period in developing the net cost of new entry for the Reliability Pricing Model ("RPM") demand curves. The Commission has approved those curves and hence at least implicitly approved that assumption in connection with a new peaking unit. PJM uses a nominal as opposed to real levelized carrying charge[3] method and a 20 year nominal amortization period is equivalent to an approximately 16 year real amortization period. A real levelized charge is the equal annual percentage of the investment that if escalated at inflation will yield the required return on and of capital over the amortization period. A nominal levelized charge is the equal annual percentage of the investment not escalated that will yield the required return on and of capital over the

[3] The report prepared for PJM states that "the total levelized value represents constant, non-escalating annual capacity revenues over the 20-year project life". See page 6 of the "2008 Update of Cost of New Entry Combustion Turbine Power Plant Revenue Requirements For PJM Interconnection, LLC. Pasteris Energy, Inc, dated January 7, 2008.

amortization period. Hence a nominal levelized charge will in the first year, which is the relevant year, be considerably higher than a real levelized charge.

14. In performing the 2007 Demand Curve reset, I considered determining the amortization period by simply making an assumption, but rejected that alternative in favor of a methodology that would determine an amortization period by explicitly modeling some of the risks that are associated with the investment in a peaking unit. Among, the risks that were explicitly modeled were the risks of excess capacity caused by an institutional bias toward having more then the minimum required level of capacity, regulatory risk and the risk of technological progress lowering real price in the future. In addition to risk, I also considered value adding items such as the residual value of the investment at the end of its potential physical life. This modeling yielded values for the amortization period of between 13.5 and 18.5 years for the NYISO localities with a value of 13.5 for the New York City Locality. The NYISO Board of Directors adjusted some of the items, including removing the regulatory risk value and, ultimately, the Demand Curves were reset in 2007 using amortization period between 17.5 and 24.5 years, with the New York City Locality set based upon a 17.5 year amortization period and a real levelized carrying charge methodology.[4] This means that the Net CONE at the reference point (the minimum required capacity level) for New York City reflects a levelization of the investment developed using a 50% debt/50% equity capital structure, a debt cost of 7%, an equity cost of 12.0 %, and an amortization period of 17.5 years. This is the correct representation of the localized levelized embedded

[4] As noted above a 20 year nominal amortization period is approximately equal to a 16 year real amortization period. Hence, the 17.5 year real amortization period used in the last Demand Curve reset for the New York City Locality would translate to approximately a 22 year nominal amortization period, a longer period which would result in a lower carrying charge than that approved by the Commission for PJM's RPM demand curves.

costs of a peaking unit in the New York City Locality and it corresponds to the value on the Demand Curve at the minimum required capacity level of 100% not the value at 104%.

15. I developed the amortization period using a model as opposed to simply using judgment, because there is another parameter that needs to be considered in establishing the Demand Curve. This parameter is the slope of the Demand Curve. A steeper Demand Curve increases risk as the consequences of excess capacity are greater. Given that procedures are in place to stimulate a market solution or implement a regulated solution if capacity in the NYISO is not adequate, and hence there is little chance for an upside related to a steep Demand Curve, a steep Demand Curve will increase risk and all else equal will result in an investor using a shorter amortization period to set the price at which it is willing to enter. The model developed is primarily a tool that enables an objective relationship to be established between the slope of the Demand Curve and the carrying charge by solving for the amortization period used to develop the value of the Demand Curve at the reference point or minimum required capacity level.

16. In order to solve for the impact of the slope of the Demand Curve, the model must be provided with an assumption of the average level of excess capacity that will result from the bias toward never being short. This assumed value was 104% of the minimum required level for the New York City Locality. The model was executed using this assumption and the slope of the Demand Curve for the sole purpose of determining how these factors and several other less significant risk factors would affect the amortization period, which as described above is an essential element in calculating the carrying charge rate. The NYTOs' Answer could be read as claiming that the value on the Demand Curve at the assumed level of excess

capacity (104%) is equal to the levelized localized embedded cost of a peaking unit. This would be incorrect and would imply an unrealistically long 30 year amortization period for the carrying charge used to develop the levelized localized embedded cost of a peaking unit. It is important to understand that although the Demand Curve model examines the recovery investment over a 30 year period assuming an average level of excess capacity in order to solve for the amortization period, the value of the Demand Curve at that average level of excess capacity is not representative of the levelized localized embedded cost of a peaking plant assuming a carrying charge based on a realistic and consistent assumptions.

17. The 2007 Demand Curve reset process set the value of the Demand Curve for the New York City Locality at the minimum required capacity level (*i.e.*, 100%) based upon the investment cost of a new LMS100 unit at a two unit site, based upon an econometric model of net energy and ancillary service revenues and based on realistic and consistent assumptions as to the parameters used to develop the carrying charge. It is my understanding that the NYTOs previous filings in this docket, and their Answer recommended that the point on the Demand Curve at 104% be utilized for purposes of In-City Capacity mitigation measures. I am not expressing an opinion on that point in this Affidavit, nor am I expressing an opinion on whether the same point be used for purposes of mitigation as is used for the Demand Curve reset. However, as described by the NYISO's Answer and above in this Affidavit, any inference drawn from the NYTOs previous filings that Net CONE corresponds to the value of the Demand Curve at 104% of the minimum required capacity level, or in fact at any value other than 100% of the minimum required capacity level, is not accurate.

18. Further affiant saieth not.

ATTESTATION

I am the witness identified in the foregoing affidavit. I have read the affidavit and am familiar with its contents. The facts set forth therein are true to the best of my knowledge, information and belief.

Eugene T. Meehan

Subscribed and sworn to before me
this 21st day of July, 2010.

SS: District of Columbia

Notary Public

Rosalind Brown
Notary Public, District of Columbia
My Commission Expires 12/14/2014

My commission expires:

ATTACHMENT I

NERA
Economic Consulting

Eugene T. Meehan
Senior Vice President

National Economic Research Associates, Inc.
1255 23rd Street NW
Washington, DC 20037
+1 202 466 3510 Fax +1 202 466 3605
Direct dial: +1 202 466 9287
gene.meehan@nera.com
www.nera.com

EUGENE T. MEEHAN
SENIOR VICE PRESIDENT

Mr. Meehan is a Senior Vice President at NERA. He has over thirty years of experience consulting with electric and gas utilities and has testified as an expert witness before numerous state and federal regulatory agencies, as well as appeared in federal court and arbitration proceedings.

At NERA, Mr. Meehan's practice concentrates on serving energy industry clients, with a focus on helping clients manage the transition from regulatory to more competitive environments. He has performed consulting assignments for over fifty large electric, gas, and combination utilities in the areas of retail access, regulatory strategy, strategic planning, financial and economic analysis, merger and acquisition advisory services, power contract analysis, market power and market definition, stranded cost analysis, power pooling, power markets and risk management, ISO and PX development, and costing and pricing. In addition, he has advised numerous utilities on power procurement issues and administered power procurements on behalf of utilities and regulators.

Mr. Meehan has experience leading NERA's advisory work on several major restructuring and unbundling assignments. These assignments were multi-year projects that involved integration of regulatory and business strategy, as well as development of regulatory filings associated with the recovery of stranded cost and rate unbundling.

Education

Boston College, BA, Economics, *cum laude*
New York University (NYU), Graduate School of Business, completed core courses for the doctoral program.

Professional Experience

	NERA Economic Consulting
1999-	Senior Vice President
1996-1999	Vice President
1973-1980	Senior Economic Analyst; Research Assistant
	Deloitte & Touche Consulting Group
1994-1996	Principal
	Energy Management Associates, Inc.
1980-1994	Vice President

Areas of Expertise

Restructuring/Stranded Cost Recovery

Mr. Meehan has directed several multi-year projects associated with restructuring and stranded cost recovery. These projects involved facilitating the development of an integrated regulatory and business strategy and formulating regulatory filings to accomplish strategy. As part of these assignments, Mr. Meehan facilitated sessions with senior management to set and track filing strategy. Clients include Public Service Gas & Electric and Baltimore Gas and Electric.

Unbundling/Generation Pricing

Mr. Meehan has formulated unbundling strategies, with a specialization in generation pricing. He has advised several utilities in standard offer pricing and has testified on shopping credits on behalf of First Energy and Baltimore Gas and Electric.

Power Procurement

Mr. Meehan has been involved in power procurement activities for a variety of utilities and regulatory agencies. He has advised utilities in developing and implementing evaluation processes for new generation, with the objective of achieving the best portfolio evaluation. He has helped regulators in Ireland and Canada design and implement portfolio evaluation processes. He has testified before FERC and state regulatory agencies on competitive power procurement. In addition, Mr. Meehan helped to design and implement the New Jersey BGS auction process.

Power Contracts

Mr. Meehan has extensive experience with power contracts and power contract issues. He has reviewed and testified on the three principal types of power contracts: integrated utility to integrated utility contracts, IPP to utility contract, and integrated or wholesale utility to distribution utility contracts. He has testified in power contracts disputes on behalf of Carolina Power and Light, Duke Power Company, Southern Company, Orange and Rockland Utilities, and Tucson Electric Power. He has also advised Oglethorpe Power Corporation in the reform of its wholesale contracts with its distributor cooperative members.

Retail and Wholesale Settlements

In addition to his expertise on power pooling issues, Mr. Meehan has significant experience with assignments related to the settlement process. He has focused on the issues of credit management as new entrants appear in retail and wholesale markets and has designed efficient specifications for retail settlement systems, including the use of load profiling, and examined the risk and cost allocation issues of alternative settlement systems.

Risk Management

Mr. Meehan has advised several large utilities on price risk management. These assignments have included evaluation of price management service offers solicited from power marketers in association with management of assets and entitlements, as well as provision of price managed service for various terms.

Marginal Costs

Mr. Meehan has provided comprehensive marginal cost analyses for over 25 North American Utilities. These assignments required detailed knowledge of utility operations and planning.

Power Supply and Transmission Planning

Mr. Meehan has advised electric utilities on economic evaluations of generation and transmission expansion. He has testified on the economics of particular investments, the prudence of planning processes, and the prudence of particular investment decisions.

Generation Strategy

Mr. Meehan has led NERA efforts on a client task force charged with developing an integrated generation asset/power marketing strategy.

Power Pooling

Mr. Meehan has in-depth working knowledge of the operating, accounting, and settlement processes of all United States power pools and representative international power pools. He has provided consulting services for New York Power Pool members on a continuous basis since

1980, advising the Pool and its members on production cost modeling, transmission expansion, competitive bidding and reliability, and marginal generating capacity cost quantification. In NEPOOL, he has quantified the benefits of continued utility membership in the Pool and the impact of the Pool settlement process on marginal cost. He has worked with a major PJM utility to explore the impact of PJM restructuring proposals upon generating asset valuation and examine the implications of alternative restructuring proposals. He has consulted for Central and Southwest Corporation, Entergy, and Southern Company on issues that involved the internal pooling arrangements of the utility operating companies of those holding companies, as well as for various utilities on the impact of pooling arrangements on strategic alternatives.

Representative Assignments

Worked with Public Service Electric & Gas Company (PSE&G) to direct a three year NERA advisory effort on restructuring. Facilitated a two-day senior management meeting to set regulatory strategy in 1997. Throughout 1997 and 1998, worked over half time at PSE&G to help implement that strategy and advised on testimony preparation, cross-examination, and briefing. Also advised PSE&G on business issues related to securitization, energy settlement and credit requirements for third party suppliers. During 1999, advised PSE&G during settlement negotiations and litigation of the settlement. PSE&G achieved a restructuring outcome that involved continued ownership of generation by an affiliate and the securitization of $2.5 billion in stranded costs.

Worked on separate assignments for a large utility in the Northeast and a large utility in the Southeast, advising on the evaluation of risk management offers from power marketers. The assignments included reviewing proposals, attending interviews with marketers and providing advice on these, and the developing analytical software to evaluate offers.

Worked with government of Ontario beginning in 2004 to help design the RFP and economic evaluation process for the solicitation of 2500 Mw of new generating capacity. Supervising NERA's portfolio-based economic evaluation on behalf of the Ontario Ministry of Energy.

Testified on behalf of Pacific Gas & Electric Company before the FERC in a case benchmarking the PSA between the distribution utility and a soon-to-be-created generating company. This effort involved developing detailed expertise in applying the Edgar standard and a detailed review of DWR procurement during the western power crisis. In addition, this effort involved the review of more than 100 power contracts in the WECC.

Directed NERA's efforts, on behalf of the electricity regulator in Ireland, to design an RFP and implementation process for the purchase of 500 Mw of new generating capacity in 2003. NERA advised on the RFP, the portfolio evaluation method, and the power contract and also conducted the economic evaluation.

Reviewed the economic evaluation conducted by Southern Company Service for affiliated operating companies in connection with an RFP for over 2000 Mw of new generating capacity. Submitted testimony before FERC on behalf of Southern Company Service.

Worked with Baltimore Gas and Electric (BG&E) to conduct a one and one-half year consulting assignment that involved providing restructuring advice. The project began in March/April 1998 with senior management discussions and workshops on plan development and filing strategy. Advised BG&E in the development of testimony, rebuttal testimony, and public information dissemination. Worked to review and coordinate testimony from all witnesses and offered testimony on shopping credits and in defense of the case settlement. BG&E achieved a restructuring outcome enabling it to retain generation ownership. As part of this assignment, advised BG&E on generation valuation and unregulated generation business strategy.

Directed the efforts of a large Southeastern utility to develop a short-term power contract portfolio and to evaluate the relative value of power options, forwards, and unit contracts to determine the optimal mix of instruments to manage price risk.

Testified for XCEL Energy on the use of competitive bids for new generation needs. Examined whether XCEL was prudent not to explore a self-build plan and the reasonableness of relying on ten-year or shorter contracts as opposed to life-of-facility contracts, in order to meet needs and facilitate a possible future transition to competition. This project addressed the comparability of fixed bids to rate base plant additions.

Advised and testified on behalf of First Energy in the Ohio restructuring proceeding on the issues of generation unbundling and stranded cost. Defended the First Energy shopping credit proposal.

Advised Consolidated Edison and Northeast Utilities on merger issues and testified in Connecticut and New Hampshire merger proceedings. Testimony focused on retail competition in gas and electric commodity markets.

Directed NERA's effort to train selected representatives of a major European power company in American power marketing and risk management practices. The project involved numerous meetings and interviews with power marketing firms.

Led NERA's effort to advise the New England ISO on the development of an RTO filing. Examined performance-based ratemaking for transmission and market operator functions.

Examined ERCOT power market conditions during the period of time from 1997 to 1999 and testified on behalf of Texas New Mexico Power Company for the prudence of its power purchase activity.

Advised a Midwestern utility on restructuring of a wholesale contract with an affiliate. Involved forecasting of the unbundled wholesale cost-of-service and market prices, as well as development of a regulatory strategy for gaining approval of contract restructuring and the transfer of generation from regulated to EWG states.

Performed market price forecasts for numerous utility clients. These forecasts have employed both traditional modeling and newly developed statistical approaches.

Examined the credit issues associated with the entry of new entities into retail and wholesale settlement market. These assignments involved a review of current Pool credit procedures, examination of commodity and security trading credit requirements, coordination with financial institutions, and recommendations concerning credit exposure monitoring, credit evaluation processes, and credit requirements.

Oversight of EMA's consulting and software team in designing and implementing the LOLP capacity payment, a portion of the UK wholesale settlement system.

Advised Oglethorpe Power Corporation in the reform of its contracts with its distribution cooperative members and the evolution of full requirement power wholesale power contracts into contracts that preserve Oglethorpe's financial integrity and are suitable for a competitive environment.

Developed long run marginal and avoided costs of natural gas service, as well as avoided cost methods and procedures. These costs have been used primarily for the analysis of gas DSM opportunities. Clients include Consolidated Edison Company, Southern California Edison Company, Niagara Mohawk Power Corporation, and Elizabethtown Gas Company.

Review of power contracts and testimony in numerous power contract disputes.

Development of long run avoided costs of electricity service and avoided cost methods and procedures. These costs have been used to assess DSM and cogeneration, as well as to develop integrated resource plans. Clients include Public Service Company of Oklahoma, Central Maine Power Company, Duquesne Light Company, and the New York investor-owned utilities.

Advised Central Maine Power Company (CMP) on the development of a competitive bidding framework. This framework was implemented in 1984 and was the first of its kind in the nation. CMP adopted the framework outlined in EMA's report and won prompt regulatory approval.

Advised a utility in the development of an incentive ratemaking plan for a new nuclear facility. This assignment involved strategic analysis of alternate proposals and quantification of the financial impact of various ratemaking alternatives. Presented strategic and financial results in order to convince senior management to initiate negotiations for the incentive plan.

Advised and testified on behalf of the New York Power Pool utilities on the methodology for measuring pool marginal capacity costs. This work included development of the methodology and implementation of the system for quantifying LOLP-based marginal capacity costs.

Provided testimony on behalf of the investor-owned electric utilities in New York State, concerning the proper methodology to use when analyzing the cost-effectiveness of conservation programs. This methodology was adopted by the Commission and used as the basis for DSM evaluation in New York from 1982 through 1988.

Developed the functional design of a retail access settlement system and business processes for a major PJM combination utility. This design is being used to construct a software system and develop business procedures that will be used for retail settlements beginning January 1999.

Reviewed the power pool operating and interchange accounting procedure of the New York Power Pool, the Pennsylvania, New Jersey, Maryland Interconnection, Allegheny Power System, Southern Company, and the New England Power Pool as part of various consulting assignments and in connection with the development of production simulation software.

Summarized and analyzed the operational NEPOOL to examine the feasibility of incorporating NEPOOL interchange impacts with Central Maine and accounting procedure of the New England Power Pool Power Company's buy-back tariffs.

Developed and presented a two-day seminar delivered to electric industry participants in the UK (prior to privatization), outlining the structure and operation of power pools and bulk power market transactions in North America.

Benchmark analysis and FERC testimony of PGE's proposed twelve-year contract between PG&E and Electric Gen LLC (contract value in excess of $15 billion).

Responsible for NERA's overall efforts in advising New Jersey's Electric Distribution Companies on the structuring and conduct of the Basic Generation Service auctions (the 2002 auction involved $3.5 billion, and the 2003 and 2004 auctions involved over $4.0 billion).

Publications, Speeches, Presentations, and Reports

Capacity Adequacy in New Zealand's Electricity Market, published in *Asian Power*, September 18, 2003

Central Resource Adequacy Markets For PJM, NY-ISO AND NE-ISO, a report written February 2004

Ex Ante or *Ex Post*? Risk, Hedging and Prudence in the Restructured Power Business, The Electricity Journal, April 2006

Distributed Resources: Incentives, a white paper prepared for Edison Electric Institute, May 2006

Restructuring Expectations and Outcomes, a presentation presented at the Saul Ewing Annual Utility Conference: The Post Rate Cap and 2007 State Regulatory Environment, Philadelphia, PA, May 21, 2007

Making a Business of Energy Efficiency: Sustainable Business Models for Utilities, prepared for Edison Electric Institute, August 2007

Restructuring at a Crossroads, presented at Empowering Consumers Through Competitive Markets: The Choice Is Yours, Sponsored by COMPETE and the Electric Power Supply Association, Washington, DC, November 5, 2007

Competitive Electricity Markets: The Benefits for Customers and the Environment, a white paper prepared for COMPETE Collation, February 2008

The Continuing Rationale for Full and Timely Recovery of Fuel Price Levels in Fuel Adjustment Clauses, The Electricity Journal, July 2008

Impact of EU Electricity Competition Directives on Nuclear Financing presented to: SMI – Financing Nuclear Power Conference, London, UK, May 20, 2009

Testimony

Forums

Arkansas Public Service Commission

Federal Energy Regulatory Commission

Florida Public Service Commission

Maine Public Utilities Commission

Minnesota Public Service Commission

Nevada Public Service Commission

New York Public Service Commission

Nuclear Regulatory Commission – Atomic Safety and Licensing Board

Oklahoma Public Service Commission

Public Service Commission of Indiana

Public Utilities Commission of Ohio

Public Utilities Commission of Nevada

Public Utilities Commission of Texas

Public Utilities Commission of New Hampshire

United States District Court

United States Senate Committee on Energy and Natural Resources

Various arbitration proceedings

Clients

Arkansas Power & Light Company

Baltimore Gas & Electric

Carolina Power & Light Company

Central Maine Power

Consolidated Edison Company of New York, Inc.

Dayton Power and Light Company

Florida Coordinating Group

Houston Lighting & Power Company

Minnesota Power and Light Company

Nevada Power Company

Niagara Mohawk Power Corporation

Northern Indiana Public Service Company

Oglethorpe Power Corporation

Pacific Gas and Electric Company

Power Authority of the State of New York

Public Service and Electric Company

Public Service Company of Oklahoma

Sierra Pacific Power Company

Southern Company Services, Inc.

Tucson Electric Power Company

Texas-New Mexico Power Company

Recent Expert Testimony and Expert Reports

Supplemental Testimony on behalf of Texas-New Mexico Power Company, Docket No. 15660, September 5, 1996.

Direct Testimony on behalf of Long Island Lighting Company before the Federal Energy Regulatory Commission, September 29, 1997.

Rebuttal Testimony on behalf of Texas-New Mexico Power Company, SOAH Docket No. 473-97-1561, PUC Docket No. 17751, March 2, 1998.

Prepared Testimony and deposition testimony on behalf of Central Maine Power Company, United Stated District Court Southern District of New York, 98-civ-8162 (JSM), March 5, 1999.

Prepared Direct Testimony Before the Public Service Commission of Maryland on behalf of Baltimore Gas & Electric Company, PSC Case Nos. 8794/8804, June 1999.

Rebuttal Testimony Before the Maryland Public Service Commission, on behalf of Baltimore Gas & Electric Company, PSC Case Nos. 8794/8804, March 22, 1999.

NORCON Power Partners LP v. Niagara Mohawk Energy Marketing, before the United States District Court, Southern District of New York, June 1999.

Prepared Supplemental Testimony Before the Maryland Public Service Commission, on behalf of Baltimore Gas & Electric Company, PSC Case Nos. 8794/8804, July 23, 1999.

Prepared Supplemental Reply Testimony Before the Maryland Public Service Commission, on behalf of Baltimore Gas & Electric Company, PSC Case Nos. 8794/8804, August 3, 1999.

Direct Testimony on behalf of Niagara Mohawk, Before the New York State Public Service Commission, PSC Case No. 99-E-0681, September 3, 1999.

Rebuttal Testimony on behalf of Niagara Mohawk, PSC Case No. 99-E-0681 Before the New York State Public Service Commission, November 10, 1999.

Arbitration deposition on behalf of Oglethorpe Power Corporation, last quarter of 1999.

Direct Testimony Before the Public Utilities Commission of Ohio on behalf of FirstEnergy Corporation, Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company, Case No. 99-1212-EL-ETP re: Shopping Credits.

Direct Testimony on behalf of Niagara Mohawk, Before the New York State Public Service Commission, PSC Case No. 99-E-0990, February 25, 2000.

Testimony on behalf of Consolidated Edison Company of New York, Inc., State of Connecticut, Department of Public Utility Control, Docket No.: 00-01-11, April 28, 2000 and June 30, 2000.

Testimony on behalf of Texas-New Mexico Power Company, Fuel Reconciliation Proceeding before the Texas PUC, June 30, 2000.

Testimony on behalf of Consolidated Edison Company of New York, Inc., Before the New Hampshire Public Service Commission, Docket No.: DE 00-009, June 30, 2000.

Rebuttal Testimony Before the Public Utilities Commission of the State of Colorado, Docket No. 99A-549E, November 22, 2000.

Testimony Before the Public Utilities Commission of the State of Colorado, Docket No. 99A-549E, January 19, 2001.

DETM Management, Inc. Duke Energy Services Canada Ltd., And DTMSI Management Ltd., Claimants vs. Mobil Natural Gas Inc., And Mobil Canada Products, Ltd., Respondents. American Arbitration Association Cause No. 50 T 198 00485 00, August 27, 2001.

State of New Jersey Board of Public Utilities, In the Matter of the Provision of Basic Generation Service Pursuant to the Electric Discount and Energy Competition Act of 1999, Before President Connie O. Hughes, Commissioner Carol Murphy on Behalf of the Electric Distribution Companies (Public Service Electric and Gas Company, GPU Energy, Consolidate Edison Company and Conectiv) Docket No.: EX01050303, October 4, 2001.

Direct Testimony Before the Federal Energy Regulatory Commission on behalf of Pacific Gas and Electric Company, Docket No.: ER02-456-000, November 30, 2001.

Fourth Branch Associates/Mechanicville vs. Niagara Mohawk Power Corporation, January 2002 (Expert Report).

Arbitration Deposition on behalf of Oglethorpe Power Corporation, March 2002.

Direct Testimony and Deposition Testimony Before the Federal Energy Regulatory Commission on behalf of Electric Generation LLC in Response to June 12 Commission Order, Docket No.: ER02-456-000, July 16, 2002.

Rebuttal Testimony Before the Federal Energy Regulatory Commission on behalf of Electric Generation LLC in Response to June 12 Commission Order, Docket No.: ER02-456-000, August 13, 2002.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company, in the matter of the Application of Nevada Power Company to Reduce Fuel and Purchased Power Rates, PUCN Docket No. 02-11021, November 8, 2002 and subsequent Deposition Testimony.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, Docket No. 03-1014, January 10, 2003.

Direct Testimony Before the Public Utility Commission Of Texas on behalf of Texas-New Mexico Power Company, Application Of Texas-New Mexico Power Company For Reconciliation Of Fuel Costs, April 1, 2003.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company, PUCN Docket No. 02-11021, April 1, 2003.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company, Docket No. 03-1014, May 5, 2003.

Testimony on behalf of Consolidated Edison Company of New York, Inc., Before the Public Service Commission of New York, Case No.: 00-E-0612, September 19, 2003.

State of New Jersey Board of Public Utilities, In the Matter of the Provision of Basic Generation Service Pursuant to the Electric Discount and Energy Competition Act of 1999, Before President Connie O. Hughes, Commissioner Carol Murphy on Behalf of the Electric Distribution Companies (Public Service Electric and Gas Company, GPU Energy, Consolidate Edison Company and Conectiv), September 2003.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's Deferred Energy Case, November 12, 2003.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, January 12, 2004.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, May 28, 2004.

Direct Testimony on behalf of Texas-New Mexico Power Company, First Choice Power Inc. and Texas Generating Company LP to Finalize Stranded Cost under PURA § 39.262, January 22, 2004.

Rebuttal Testimony on behalf of Texas-New Mexico Power Company, First Choice Power Inc. and Texas Generating Company LP to Finalize Stranded Cost under PURA § 39.262, April, 2004.

State of New Jersey Board of Public Utilities, In the Matter of the Provision of Basic Generation Service Pursuant to the Electric Discount and Energy Competition Act of 1999, Before President Connie O. Hughes, Commissioner Carol Murphy on Behalf of the Electric Distribution Companies (Public Service Electric and Gas Company, GPU Energy, Consolidate Edison Company and Conectiv), September 2004.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's Deferred Energy Case, November 9, 2004.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, January 7, 2005.

Expert Report on behalf of Oglethorpe Power Corporation, March 23, 2005.

Arbitration deposition on behalf of Oglethorpe Power Corporation, April 1, 2005.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's December 2005 Deferred Energy Case.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2006 Deferred Energy Case, January 13, 2006.

Remand Rebuttal for Public Service Company of Oklahoma before the Corporation Commission of the State of Oklahoma, Cause No. PUD 200200038, **Confidential**, March 17, 2006

Answer Testimony on behalf of the Colorado Independent energy Association, AES Corporation and LS Power Associates, LP, Docket No. 05A-543E, April 18, 2006.

Cross-Answer Testimony on behalf of the Colorado Independent energy Association, AES Corporation and LS Power Associates, LP, Docket No. 05A-543E, May 22, 2006.

Distributed Resources: Incentives, a report prepared for Edison Electric Institute, May 2006

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2006 Deferred Energy Case, Docket No. 06-01016, June 2006.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Deferred Energy Case, December 2006.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's Application for Recovery of Costs of Achieving Final Resolution of Claims Associated with Contracts Executed During the Western Energy Crisis, December 2006.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's Application for Recovery of Costs of Achieving Final Resolution of Claims Associated with Contracts Executed During the Western Energy Crisis, December 2006.

Direct Testimony Before the Public Utilities Commission of the State of Hawaii, on behalf of Hawaiian Electric Company, Inc., Docket No. 2006-0386, December 22, 2006.

Direct Testimony Before the Public Utilities Commission of the State of Hawaii, on behalf of Hawaiian Electric Company, Inc., Docket No. 05-0315, December 29, 2006.

Rebuttal Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2007 Deferred Energy Case, January 2007.

Declaration Before the State of New York Public Service Commission, on behalf of Consolidated Edison Company of New York, Inc.'s Long Island City Electric Network, Case 06-E-0894 – Proceeding on Motion of the Commission to Investigate the Electric Power Outage and Case 06-E-1158 – In the Matter of Staff's Investigation of Consolidated Edison Company of New York, Inc.'s Performance During and Following the July and September Electric Utility Outages. July 24, 2007

Direct Testimony Before The Public Utilities Commission of Colorado, In The Matter of the Application of Public Service Company of Colorado for Approval of its 2007 Colorado Resource Plan, April 2008

Answer Testimony Before the Public Utilities Commission of the State of Colorado on behalf of Trans-Elect Development Company, LLC, and The Wyoming Infrastructure Authority, Docket No. 07A-447E, April 28, 2008

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's 2008 Deferred Energy Case, February 2009.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2008 Deferred Energy Case, February 2009.

Direct Testimony Before the Public Utilities Commission of Texas, on behalf of Entergy Texas, Inc. Docket No. 33687, April 29, 2009

Direct Testimony Before The Public Utilities Commission Of Nevada On Behalf of Nevada Power Company D/B/A Nevada Energy, 2010 – 2029 Integrated Resource Plan, June 26, 2009

Before the Public Service Commission of New York, Case 09-E-0428 Consolidated Edison Company of New York, Inc. Rate Case, Rebuttal Testimony, September 2009

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Sierra Pacific Power Company's 2009 Deferred Energy Case, February 2010.

Direct Testimony Before the Public Utilities Commission of Nevada on behalf of Nevada Power Company's 2009 Deferred Energy Case, February 2010