

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Astoria Generating Company, L.P., NRG)	
Power Marketing LLC, Arthur Kill Power)	
LLC, Astoria Gas Turbine Power LLC,)	
Dunkirk Power LLC, Huntley Power LLC,)	
Oswego Harbor Power LLC and TC)	
Ravenswood, LLC)	
)	
Complainants,)	Docket No. EL11-42-000
)	
vs.)	
)	
New York Independent System Operator,)	
Inc.)	
)	
Respondent.)	

**REQUEST FOR LEAVE TO SUBMIT SUPPLEMENTAL ANSWER
AND SUPPLEMENTAL ANSWER OF THE
NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.**

In accordance with Rules 212 and 213 of the Commission’s Rules of Practice and Procedure,¹ the New York Independent System Operator, Inc. (“NYISO”) respectfully requests leave to submit and submits this Supplemental Answer in response to the: (1) *Answer of the New York ISO’s Market Monitoring Unit* (“MMU Answer”); and (2) *Complainants’ Motion for Leave to Answer and Answer* (“Complainants Answer”) filed on July 21, 2011 in the above captioned proceeding regarding the NYISO’s implementation of the “In-City Buyer-Side Mitigation Measures.”²

¹ 18 C.F.R. §§ 385.212, 385.213 (2011).

² Consistent with the NYISO’s other filings in this proceeding, the NYISO uses “In-City Buyer-Side Mitigation Measures” to refer to the currently-effective buyer-side capacity market mitigation provisions in Attachment H to its Market Administration and Control Area Services Tariff (“Services Tariff”), including those that were accepted by the Commission in its series of orders in Docket No. ER10-3043.

The MMU Answer states that the independent MMU³ has “reviewed and provided comments on the In-City Buyer-Side Mitigation Exemption Tests performed by NYISO” and that “[t]hrough the course of this review, we have not identified any compliance concerns with respect to the NYISO’s implementation of the In-City Buyer Side Mitigation Measures.”⁴ It also states that the Commission should not hold the NYISO’s implementation of the In-City Buyer-Side Mitigation Measures, or the related Class Year Facilities Study allocation process, in abeyance. The NYISO is submitting its Supplemental Answer in response to the MMU’s recommendation that it: (i) disclose certain information regarding mitigation exemption determinations; and (ii) escalate Offer Floors after they are established.⁵

The Complainants’ Answer opposes the NYISO’s Answer and makes a new allegation regarding a supposed additional flaw in the NYISO’s administration of its tariff. The NYISO is requesting that the Commission reject the Complainants’ Answer as it does nothing to justify or substantiate the Complaint, but instead confuses the record through repeated mischaracterizations of fact and law. To the extent that the Commission accepts Complainants’ Answer, the NYISO requests that it accept this Supplemental Answer, in order to clarify the record.

I. REQUEST FOR REJECTION OF COMPLAINANTS’ ANSWER

Given the multiple inaccuracies in the Complainants’ Answer, the NYISO believes that the best course of action for the Commission would be to reject it pursuant to Rule 213(a). The Commission has made it clear many times that it will accept answers to answers only when they

³ The independent MMU for the NYISO is Potomac Economics, Ltd.

⁴ MMU Answer at 2.

⁵ Capitalized terms that are not otherwise defined herein shall have the meaning specified in the NYISO’s Services Tariff and if not defined therein they shall have the meaning specified in the NYISO’s Open Access Transmission Tariff (“OATT”).

correct inaccuracies, clarify complex issues, provide additional information, or are otherwise helpful in the development of the record in a proceeding.⁶ The Complainants' Answer satisfies none of these criteria, and, in fact, has the opposite effect. It obscures complex issues even more than the Complaint, provides no helpful additional information, and otherwise does not contribute to the development of a useful record.⁷ Accordingly, the NYISO requests that the Commission summarily reject the Complainants' Answer.

II. REQUEST FOR LEAVE TO ANSWER

The Commission has discretion to accept answers to answers when they are helpful to its decision-making process.⁸ To the extent that the Commission accepts the Complainants' Answer, the NYISO respectfully requests leave to answer in order to correct the numerous factual and legal misrepresentations set forth therein, as well as to allow the development of a more complete record.⁹ The NYISO should also be permitted to answer that pleading so that it may respond to an argument that was raised for the first time therein. In addition, the Commission should accept the NYISO's answer to the MMU Answer because it will help to clarify the issues and the record.

⁶ See e.g., *New York Independent System Operator Inc.*, 133 FERC ¶ 61,178 at P 11 (2011) (allowing answers to answers and protests "because they have provided information that have assisted [the Commission] in [its] decision-making process"); *Morgan Stanley Capital Group, Inc. v. New York Independent System Operator, Inc.*, 93 FERC ¶ 61,017 at 61,036 (2000) (accepting an answer that was "helpful in the development of the record. . .").

⁷ Complainants' Answer misstates the law regarding competitive suppliers' entitlement to recover their costs and their burden of proof under section 206 of the Federal Power Act, see Complainants' Answer at 7-8 and 21. It misstates the facts regarding past communications with the NYISO, the NYISO's use of inflation in its calculations, and the NYISO's past statements concerning gas pricing adjustments, see Complainants' Answer at 5-7, 10-11, and *Second Supplemental Affidavit of Mark D. Younger* at PP 5-8 ("Younger Second Supplemental Affidavit").

⁸ See *supra* n. 6.

⁹ To the extent the Commission deems Rule 213(d) applicable to this answer, the NYISO respectfully seeks permission to file this answer one business day out-of-time.

III. ANSWER TO THE INDEPENDENT MMU

The MMU Answer states that “the final determination of whether a resource is subject to, or exempt from, an offer floor would be beneficial”¹⁰ and the release of “the final exempt/non-exempt determinations” would not raise competitive concerns.¹¹ It further asserts that publicizing future exemption determinations would be warranted to resolve issues of “information asymmetry” that could provide “suppliers that receive the determinations a substantial advantage over other participants.”¹² The MMU Answer acknowledges that “transparency must necessarily be limited by requirements to hold a participant’s information confidential.”¹³ The NYISO has made its position on the release of confidential information clear in its filings and would have no objection if the Commission accepted the MMU’s proposal that the Commission require the NYISO to disclose the identity of the project and the final exempt/non-exempt determination.

The MMU Answer states that the Services Tariff can reasonably be read to allow for the escalation of established Offer Floors.¹⁴ The NYISO Answer stated that “the escalation of established Offer Floors could be an improvement to the current In-City Buyer Side Mitigation Measures.”¹⁵ Subject to the concerns the NYISO expressed in the NYISO Answer,¹⁶ the MMU’s proposed market design appears to be an appropriate framework.

¹⁰ MMU Answer at 3.

¹¹ *Id.* at 3-4.

¹² *Id.* at 4.

¹³ *Id.* at 2-3.

¹⁴ *Id.* at 6.

¹⁵ NYISO Answer at 53.

¹⁶ *Id.* at 53-54.

IV. ANSWER TO COMPLAINANTS

Consistent with Commission precedent urging parties that respond to answers to limit the scope of their responses, the NYISO has confined this Supplemental Answer to addressing new arguments, and its most substantial disagreements with the Complainants' Answer. The NYISO's silence on other issues should not be construed as agreement with, or an admission to, any of the other statements made in the Complainants' Answer. Those statements have either already been refuted by the NYISO Answer or do not require a response.

A. The Complainants Have Not Shown that the NYISO Violated, or Will Violate, the In-City Buyer-Side Mitigation Measures or that those Measures Are Unjust and Unreasonable

As stated in the NYISO's Answer, and as confirmed by the MMU Answer,¹⁷ the NYISO has complied with its tariff in its implementation of the In-City Buyer-Side Mitigation Measures. Complainants argue that the NYISO has not complied with its tariff but have not shown that this is the case. They also did not respond to the MMU's statement that it has reviewed the NYISO's determinations and detected no compliance concerns.¹⁸ Complainants have likewise not provided support for their allegation that the In-City Buyer-Side Mitigation Measures are not just and reasonable. The fact remains that Complainants have not met their burden of proof under sections 206 and 306 of the FPA, and the Complaint must therefore be rejected.

Complainants' references to the decline in ICAP Spot Market Auction Clearing prices from the June to July auctions are irrelevant to any determinations under the In-City Buyer-Side Mitigation Measures. The NYISO has not yet made final determinations under the In-City Buyer-Side Mitigation Measures, which are the subject of the Complaint, and the projects as to which those measures are presently being implemented, have not yet entered the market.

¹⁷ MMU Answer at 2.

¹⁸ See NYISO Answer at 2.

Moreover, there is no merit to Complainants' allegations that the price decline was the result of the mis-implementation or violation of earlier tariff provisions¹⁹ or, even if the decline were consistent with the tariff, that it somehow indicates that the Pre-Amendment Rules²⁰ were unjust, unreasonable, or otherwise unlawful.²¹ Complainants have acknowledged that this proceeding and Docket No. EL11-50-000, which has to do with the implementation of the Pre-Amendment Rules, concern entirely different questions.²² Therefore, the Commission should disregard references pertaining to earlier tariff provisions and focus in this proceeding solely on questions concerning the In-City Buyer-Side Mitigation Measures.

1. The NYISO's Approach to Gas Futures Prices is Reasonable, Consistent with Attachment H, and Does Not Need to Be "Confirmed" by Market Participants

The new arguments in the Complainants' Answer concern the use of gas price adjustments in Unit Net CONE calculations. Complainants contend that the NYISO "made adjustments for natural gas prices to the energy and ancillary services offset used in the Unit Net CONE calculation" that were rejected by its consultants in the most recent ICAP Demand Curve reset process.²³ They ask that the Commission direct the NYISO to provide information to

¹⁹ See *Answer and Request for Expedited Action of the New York Independent System Operator, Inc.*, Docket No. EL11-50-000 at 4 (filed August 3, 2011) (referring to such earlier tariff provisions as the "Pre-Amendment Rules") ("EL11-50 Answer").

²⁰ Consistent with the NYISO's other filings in this proceeding The "Pre-Amendment Rules" are the buyer-side capacity market power mitigation rules that existed in the Attachment H prior to the effective date of the In-City Buyer-Side Capacity Mitigation Measures.

²¹ EL11-50 Answer at 4.

²² *Formal Complaint of Astoria Generating Company, L.P., et. al.*, Docket No. EL11-50-000 at 49 (filed July 7, 2011).

²³ Complainants' Answer at 18.

enable the Commission and Market Participants the ability to “confirm that adjustment to gas pricing will not skew its Unit Net CONE calculations.”²⁴

However, as the NYISO Answer explained, and the Complainants have not refuted, “there are material differences between the purposes and natures of the ICAP Demand Curve Unit Net CONE and In-City Buyer-Side Mitigation Measures analyses.”²⁵ Those differences justify the use of different assumptions, such as the use of gas futures prices in the In-City Buyer-Side Mitigation Measure determinations. Although it did not specify a particular methodology, the MMU did recommend to the NYISO and NERA that 3 years of forward gas prices be used in the NERA model to compute the net energy revenues in the Unit Net CONE analysis. Further, the Affidavit of Eugene T. Meehan²⁶ in the NYISO Answer explained and demonstrated the reasonableness of the NYISO’s use of gas futures prices in the In-City Buyer-Side Mitigation Measures.

The Meehan Affidavit explained that the NYISO derived energy revenues using projected gas prices based on gas future prices because the intent of determining Unit Net CONE for the In-City Buyer-Side Mitigation Measures “is to capture whether the entry decision is economic as of a specified time.”²⁷ Therefore, “even with the judgments that are implicit in the gas price adjustment, it can be done with sufficient accuracy so that it more accurately represents

²⁴ *Id.* at 19-20, *see also* Younger Second Supplemental Affidavit at P 19. Complainants have thus demanded a chance to “confirm” NYISO calculations in a manner that would appear to both: (i) be inconsistent with their representations that they are not seeking confidential information, *See* Complainants’ Answer at 3; and (ii) validate the NYISO’s concern that the Complainants are seeking to impermissibly usurp market monitoring functions that should only be performed by independent entities.

²⁵ NYISO Answer at 35.

²⁶ *Id.* at Attachment 3 Affidavit of Eugene T. Meehan (“Meehan Affidavit”).

²⁷ Meehan Affidavit at P 17.

the economic entry decision as of a specified time than calculating the energy net revenues without the gas price adjustment.”²⁸

Mr. Younger’s objections to the NYISO’s use of gas futures are unreasonable. Mr. Younger incorrectly argues that the NYISO did not specify the number of years of gas futures prices used;²⁹ however, the Affidavit of Joshua Boles, also submitted as part of the NYISO Answer, clearly indicated that “the calculation of net energy revenues uses an average of forward gas prices for the years of the Mitigation Study Period.”³⁰ Additionally, as explained in the Meehan Affidavit, energy revenues are “not computed over the life of the unit but are estimates of energy revenues for a three-year period starting with initial entry.”³¹ As to Complainants’ assertion that the NYISO did not “explain why near term gas prices would dictate whether a unit entry is economic,”³² the Meehan Affidavit explained that because the timing of the development of a unit is largely discretionary, “only energy revenues in the near-term period after entry, rather than energy revenues over a longer period are germane to the decision on when to develop [a] unit.”³³

The NYISO answers the confusion created in the record by Complainants’ Answer in the attached Supplemental Affidavit of Eugene T. Meehan (hereinafter the “Supplemental Meehan Affidavit”).³⁴ The Supplemental Meehan Affidavit also explains that Mr. Younger’s Second Supplemental Affidavit is “generally misleading with respect to the impact of gas prices on

²⁸ *Id.* at P 17.

²⁹ Younger Second Supplemental Affidavit at P 6.

³⁰ NYISO Answer Attachment 2 Affidavit of Joshua Boles at P 18 (“Boles Affidavit”).

³¹ Meehan Affidavit at P 22.

³² Younger Second Supplemental Affidavit at P 6.

³³ Meehan Affidavit at P 22.

³⁴ Supplemental Meehan Affidavit at P 7

energy prices and net energy revenues in the NERA econometric model, and that, stated clearly in the NERA/S&L Demand Curve Report ‘the regression results with respect to gas prices are quite sensible generally.’”³⁵

The Supplemental Meehan Affidavit further explains that Mr. Younger is incorrect to assert that the Meehan Affidavit did “not even acknowledge the counterintuitive results that the NERA model produced when this approach was examined in the 2010 Demand Curve Reset process.”³⁶ As explained in the Supplemental Meehan Affidavit, the Meehan Affidavit incorporated by reference the explanations provided in the NERA/Sargent & Lundy Demand Curve Report, which is part of the record in Docket No. ER11-2224,³⁷ regarding the “counterintuitive results.”³⁸ The only counterintuitive result explained in the NERA/S&L Demand Curve Report, *i.e.*, the observation that the regression results for November off peak LBMPs did not respond to gas prices, was not significant, despite Mr. Younger’s suggestion that it was.³⁹

Mr. Younger’s statement “when NERA attempted to fold lower futures gas pricing assumptions into its modeling assumptions, NERA’s 2010 Demand Curve Reset Process econometric model counter-intuitively produced net energy revenues for new entrants that actually increased,” which implies that this is evidence of an anomaly in the NERA model, is also incorrect. The Supplemental Meehan Affidavit demonstrates in an example that higher gas

³⁵ *Id.* at P 6.

³⁶ Younger Second Supplemental Affidavit at P 4.

³⁷ See *New York Independent System Operator, Inc., Tariff Revisions to Implement ICAP Demand Curves for Capability Years 2011/2012, 2012/2013, and 2013/2014*, Docket No. ER11-2224-000 (filed November 30, 2010), at Attachment 2 (Meehan Affidavit) Exhibit B “Independent Study to Establish Parameters of the ICAP Demand Curve for the New York Independent System Operator” (“NERA/S&L Demand Curve Report”).

³⁸ Supplemental Meehan Affidavit at P 8.

³⁹ *Id.*

prices can result in higher net revenues for some units and lower for others, depending on the rates and other unit-specific characteristics. As explained in the Supplemental Meehan Affidavit, the result is not counterintuitive, nor is it evidence of an anomaly in the NERA model.

Mr. Younger is correct to the limited extent that energy prices are highly correlated with gas prices; however, new operating unit costs are also tightly correlated with gas prices and are much more directly correlated as the new units burn gas. Thus the correlation between net revenues and gas prices “depends on the relative impact of gas prices on the market price of energy and the relative impact of gas prices on the operating cost of the unit.”⁴⁰ That is neither a counterintuitive result nor evidence that there is an anomaly in the NERA model.

The Supplemental Meehan Affidavit responds to a number of other points in Mr. Younger’s Affidavit in detail. It continues to demonstrate the reasonableness of the gas price adjustment in the determination of energy revenues for the Unit Net CONE. Mr. Meehan’s explanations show that Complainants are wrong to claim that the NYISO’s approach to gas pricing adjustments in calculating Unit Net CONE is “a mistake” with the potential to incorrectly “influence” or “dictate” exemption determinations.⁴¹ There is no more need, and it is no more appropriate, for Complainants’ to “confirm” the NYISO’s MMU-reviewed determinations in this area than in any other.

2. The NYISO’s Approach to Reviewing Contracts Is Reasonable, Consistent with Attachment H, and Consistent With the Overall Design of In-City Buyer-Side Mitigation Measures

Complainants argue that the NYISO’s review of contracts is too narrow and thus will supposedly not “effectively protect against uneconomic entry” In their view, the NYISO has asserted that “any out-of-market payments received under contracts are irrelevant to the Unit

⁴⁰ Supplemental Meehan Affidavit at P 9.

⁴¹ Complainants’ Answer at 20.

Net CONE calculation.”⁴² Complainants assert that “such contracts remain an important check to determine if suppliers have an incentive or ability to understate their costs,” and that these kinds of subjective evaluations must be performed.⁴³

The NYISO does evaluate contracts when doing so is necessary to validate identified costs and also to determine whether a cost is appropriate to use in a project’s Unit Net CONE.⁴⁴ The NYISO reviews contracts on an objective basis, to evaluate whether the decision to enter is economic based on ICAP Spot Market Auction payments. Any “incentive or ability” to understate costs is addressed through the NYISO’s verification of claimed costs and the determination of appropriate costs. This evaluation is in keeping with the overall design of the In-City Buyer-Side Mitigation Measures. Complainants’ would depart from a principal purpose for the tariff revisions, which were designed to increase objectivity.⁴⁵ Complainants would instead have the NYISO divine the purpose and intent of the contracting parties, rather than evaluate objective facts. By injecting new subjectivity and ambiguity into the In-City Buyer-Side Mitigation Measures, the Complainants’ proposal would foster uncertainty and disputes. It should therefore be rejected. The MMU indicated to the NYISO that its approach to focus on the true entry costs for the new resource relative to the forecasted capacity market prices is correct and consistent with the intent of the buyer-side mitigation provisions.

⁴² *Id.* at 17-18.

⁴³ *Id.* at 18.

⁴⁴ NYISO Answer at 54.

⁴⁵ *See, e.g., New York Independent System Operator, Inc.*, 136 FERC ¶ 61,077 at P 20 (2011) (“requiring that all mitigation determinations be made prior to the decision to construct would undermine NYISO’s efforts with the Three-Year Rule to avoid discretionary determinations about when a developer had technically started construction.”).

B. The NYISO's Implementation of the In-City Buyer-Side Mitigation Measures Properly Balances Transparency and Confidentiality Considerations

Despite Complainants' assertions to the contrary, the NYISO has demonstrated that it is applying its In-City Buyer-Side Mitigation Measures in a manner that provides more transparency than required by the measures, while still complying with its obligations to protect confidential information.

1. The NYISO Communicated Extensively with Market Participants and Provided Greater Transparency Regarding its Implementation of the In-City Buyer-Side Mitigation Measures Than its Tariffs or Commission Policy Requires

Complainants continue to question the NYISO's implementation of the In-City Buyer-Side Mitigation Measures, renewing their claims that the measures have been implemented in an "opaque and unreasonable manner,"⁴⁶ and again base these claims on nothing but unjustified and misleading assertions. Remarkably, Complainants object that the NYISO Answer's comprehensive refutation of the testimony of Mr. Craig Hart of the US Power Generating Company ("USPG"), parent of Complainant Astoria Generating Company, engages in "semantics." In reality, it is Complainants who resorted to "semantics" and who rely on "misleading wordplay."⁴⁷ Mr. Hart inaccurately implies that the scope and number of the NYISO's communications with USPG were much narrower and fewer than they actually were. In fact, the NYISO and USPG engaged in numerous communications, including NYISO inquiries, despite Mr. Hart's inaccurate assertion that "we [*i.e.*, USPG] received just one, very limited, inquiry from the NYISO."⁴⁸ Complainants' Answer, which expressly concedes that

⁴⁶ Complainants Answer at 2.

⁴⁷ *Id.* at 5.

⁴⁸ NYISO Answer at 39, *see also* Complaint at Affidavit of Craig Hart at P 13 ("Hart Affidavit").

USPG had many communications with the NYISO,⁴⁹ is difficult to reconcile with Mr. Hart's Affidavit.

Additionally, Complainants' again suggest that Mr. Hart's "experiences" were representative of other projects' interactions with the NYISO but offer no evidence to support their claim. Rather, they simply repeat conclusory statements from the Complaint that NRG encountered a similar lack of transparency regarding its Berrians III project.⁵⁰ The NYISO and its consultants have had, and continue to have, extensive communications with, NRG and the other developers of new projects.

Similarly, Complainants point to the Hudson Transmission Project's ("HTP") comments in this proceeding in an attempt to bolster their argument.⁵¹ HTP, however, has sought leave to withdraw those comments in large part because it found that its desire for more information regarding its mitigation determination had been satisfied over the course of ongoing communications with the NYISO. HTP also made it clear that its arguments in this proceeding were "in support of open access and more market competition, so that ratepayers get the most reliable energy and capacity at more competitive prices" and not "general support for the [Complainants'] claims."⁵² Indeed, HTP specifically emphasized that it did "not agree with the Generators' assertions regarding the intent of the NYISO."⁵³

Additionally, as explained in the NYISO's July 21 Answer, and as evidenced by the HTP *Withdrawal of Comments*, challenges to the extent of the NYISO's communications with

⁴⁹ Complainants' Answer at 5.

⁵⁰ See *id.* at 6 which merely references Complaint at 23, n. 61.

⁵¹ *Id.* at 6-7.

⁵² *Withdrawal of Comments of Hudson Transmission Partners, LLC* at 3, Docket No. EL11-42-000 (filed July 29, 2011).

⁵³ *Comments of Hudson Transmission Partners, LLC* at 2, Docket No. EL11-42-000 (filed July 7, 2011).

developers under the In-City Buyer-Side Mitigation Measures are premature.⁵⁴ Because the exemption determination process is still ongoing, communications between developers and the NYISO concerning projects under review are not complete.

Finally, there is no merit to Complainants' suggestion that the NYISO's administration of the In-City Buyer-Side Mitigation Measures somehow lacked transparency because the NYISO did not previously have stakeholder discussions regarding its approach to gas pricing adjustments.⁵⁵ Complainants' own witness, Mr. Younger, acknowledges in his affidavit that this point was in fact mentioned during the stakeholder process.⁵⁶ In summary, the NYISO has explained its administration of the In-City Buyer-Side Mitigation Measures at a level of detail greater than that required under the tariff, and has also agreed to provide a numerical example in the near future. Complainants' "transparency" concerns are not driven by their lack of understanding of the NYISO's methodology. Rather they are an attempt to insert themselves into NYISO's mitigation determinations *concerning specific projects* which the Commission should summarily reject.

2. The NYISO Did Not Make Inconsistent Statements Regarding the Escalation in the Computation of a Project's New Entrant Offer Floors Compared to Established Offer Floors

Complainants confuse the record by pointing to a purported inconsistency in the NYISO's statements regarding its use of inflation in computing a new entrant's Offer Floor and

⁵⁴ *Answer of the New York Independent System Operator, Inc. To Comments* at 3-4, Docket No. EL11-42-000 (filed July 22, 2011).

⁵⁵ *See New England Power Pool and ISO New England, Inc.* 103 FERC ¶ 61,304 at P 48 (2003) ("We do not require complete transparency of ISO-NE's mitigation, as some of the information is competitively and commercially sensitive."); *see also NSTAR Electric & Gas Corporation v. Sithe Edgar LLC*, 101 FERC ¶ 61064 (2002) (rejecting demands for greater transparency in ISO-NE monitoring and mitigation procedures).

⁵⁶ *See Younger Affidavit* at 7.

in the escalation of established Offer Floors.⁵⁷ However, as explained in the NYISO Answer, Complainants have drawn incorrect inferences and conflate two distinct concepts that require separate consideration.⁵⁸ The NYISO has clearly demonstrated through the use of a numerical example that it accounts for inflation in the computation of an Offer Floor for a new entrant,⁵⁹ which is a distinct issue from the escalation of established Offer Floors. The NYISO's statement that it does not escalate Unit Net CONE refers to the issue of whether established Offer Floors should be escalated. The NYISO has not changed its position with respect to escalation of established Offer Floors and the Complainants' mischaracterizations of the NYISO's statements should be disregarded.

C. The Potential Impact of New Entry on ICAP Spot Market Auction Prices Is Not a Legally Cognizable Harm to the Complainants

Complainants assert that their filing of the Complaint was justified, despite its admittedly speculative nature, because they have been, or will be harmed by, the supposed flaws in the NYISO's administration of the In-City Buyer-Side Mitigation Measures.⁶⁰ They point to the results of the July 2011 In-City ICAP Spot Market Auction to try to support their claim.

As stated above, and in the NYISO's answer in Docket No. EL11-50-000, the NYISO has not yet made any determinations under the In-City Buyer-Side Market Mitigation Measures, and projects to which those measures are being applied have not entered the market. The results of the July 2011 ICAP Spot Market Auctions therefore have nothing to do with the implementation of the In-City Buyer-Side Mitigation Measures and fall within the scope of

⁵⁷ Complainants' Answer at 10.

⁵⁸ NYISO Answer at 44.

⁵⁹ *Id.* and Boles Affidavit at PP 12-23.

⁶⁰ Complainants' Answer at 7.

Docket No. EL11-50-000. Even if it were relevant here, Complainants' unhappiness with current market conditions is not a legally cognizable harm.⁶¹

The NYISO also disputes Complainants' suggestion that they are entitled to capacity prices that are sufficiently high so as to "provide enough revenue not only for operating expenses but also for the capital costs of the business" and to allow a competitive seller to "maintain its credit and to attract capital."⁶² The NYISO also disagrees with Complainants' asserted entitlement to ICAP revenues that would effectively guarantee their economic viability under all circumstances. The ICAP Demand Curves are designed to result in capacity revenues over time, based on an assumed level of excess capacity, that are sufficient to attract new generation and retain existing generation needed to maintain reliability.⁶³ Intermittent, market-driven price changes do not by themselves demonstrate that revenues from the ICAP Spot Market Auction are inadequate for an individual Installed Capacity Supplier to meet the objective stated above.

As the Commission recently emphasized, the establishment of competitive markets has resulted in a fundamental paradigm shift in the way that the Commission regulates electricity

⁶¹ Furthermore, the cases cited in the Complainants' Answer do not support their request for extraordinary Commission action in this proceeding. *Nevada Power Co. v. Duke Energy Trading and Mktg, LLC*, 99 FERC ¶ 61,047 (2002) involved a dispute over contracts that had been negotiated using market prices that had already been found to be unjust and unreasonable. *Mirant Energy Trading, LLC v. PJM Interconnection, LLC*, 122 FERC ¶ 61,007 (2008) was a case where an ISO agreed that future prices would be unjust and unreasonable and agreed that a hearing was warranted, unlike here where the NYISO strongly opposes Complainants' request for relief. *PSEG Power Connecticut LLC v. ISO New England, Inc.*, 132 FERC ¶ 61,022 (2010) and *TransCanada Power Mktg. Ltd. v. ISO New England Inc.*, 122 FERC ¶ 61,010 (2008) are distinguishable because they involved whether parties would be able to take part in auctions, not the impact of other market participants' entry on future auctions. *H-P Energy Res., LLC*, 115 FERC ¶ 61,216 (2006) concerned developers' eligibility for auction revenue rights with respect to upgrades proposed under an interconnection agreement. Finally, *Wisconsin Power Inc. v. FERC*, 493 F.3d 239 (D.C. Cir. 2007) is inapplicable because it had nothing to do with section 206 complaints and its holding regarding the justiciability of issues in the Court of Appeals is irrelevant to the question of when the Commission may act on complaints.

⁶² Complainants Answer at 7-8.

⁶³ *New York Independent System Operator, Inc.*, 134 FERC ¶ 61,058 at P 118 (2011) ("Therefore, it is reasonable to establish demand curve parameters that produce revenues over time that allow a new entrant a reasonable opportunity to recover its costs in light of an assumed level of excess capacity.").

service. There is no question that competitive suppliers must have a “reasonable opportunity to recover their costs” but the Commission does not guarantee full cost recovery to them. As the Commission recently stated:

Rather than requiring utilities and their customers to remain locked into a business relationship in perpetuity, we have endorsed -- and been upheld by courts in endorsing -- competition among utilities to serve customers as a mechanism to bring about just and reasonable rates. And, as in all markets, regardless of what ‘investment-backed expectations’ a resource may have had at the time that it chose to enter the ISO-NE markets, each market entrant was aware of the possibility that at some times, it might earn substantially more than a traditional cost-based rate, but that at other times, it might earn less than its costs. The Commission has made clear that ‘in a competitive market, the Commission is responsible only for assuring that [a resource] is provided the *opportunity* to recover its costs, not a guarantee of cost recovery.’⁶⁴

Thus, the fluctuation of prices in a competitive market, by itself, is not sufficient to establish that a generator lacks the opportunity to recover its costs. Indeed, it is fully expected that where prices are set by competitive forces, rather than by regulatory order, prices will go up and down as market conditions change and new entry and retirements occur. The fact that In-City ICAP Spot Market Auction clearing prices for July and August were lower than those in June, or during Summer 2010, is fully consistent with the Commission’s reliance on competitive forces to regulate prices, and does not prove that generators are not able to recover their costs in the NYISO-administered markets.⁶⁵ Nor is it evidence that a “regulatory taking” has occurred.⁶⁶

⁶⁴ *ISO New England, Inc. and New England Power Pool Participants Committee*, 135 FERC ¶ 61,029 at P 254 (2011).

⁶⁵ *See also* EL11-50 Answer at 11-16.

⁶⁶ In order to prove a “regulatory taking,” generators would also have to show, in addition to establishing that they are being deprived of a reasonable opportunity to recover their costs -- that the market rules “amount to a deprivation of all or most economic use or a permanent physical invasion of property” *Full Value Advisors, LLC v. Securities and Exchange Commission*, 633 F.3d 1101, 1109 (D.C. Cir. 2011) (citing *Lingle v. Chevron U.S.A. Inc.*, 544 U.S. 528 (2005)). Complainants have not come close to establishing that such a deprivation of property rights has occurred.

D. It Is Complainants' Who Fail to Correctly Articulate the Burden of Proof Applicable to Parties Proposing Tariff Revisions Under Section 206 of the FPA

Complainants' allege that the NYISO has misstated the law regarding the burden of proof applicable to tariff changes proposed under section 206 of the FPA. Under section 206, a complainant must "satisfy a dual burden in order to obtain the relief it seeks in a complaint. The complainant must establish that the current rate is unjust and unreasonable and the complainant must then establish that its alternative rate proposal is just and reasonable."⁶⁷ Complainants' cite as support for their attempt to rewrite decades of well-established Commission precedent a *per curiam* opinion of the Court of Appeals of the D.C. Circuit.⁶⁸ However, *Maryland Public Service Commission v. FERC* does not overturn the "dual burden" standard. Instead, the Court's statement, contained in a footnote, indicates that it is the Commission that ultimately bears the responsibility to determine a just and reasonable rate, if complainants do not propose one.⁶⁹ The

⁶⁷ *Arkansas Public Service Commission v. Entergy Corporation, et al.*, 128 FERC ¶ 61,020 at P 23 (2009); *see also, Louisiana Public Service Commission v. Entergy Corporation, et al.*, 132 FERC ¶ 61,003 (2010) (same) *Calpine Corporation, et al. v. California Independent System Operator Corporation*, 128 FERC ¶ 61,271 at P 39 (same) (2009); *NRG Energy, Inc. v. Entergy Services, Inc.*, 126 FERC ¶ 61,053 at P 31 (stating that "Section 206 of the FPA requires the complainant to satisfy a dual burden in order to obtain the relief it seeks in a complaint. The complainant must establish that the current rate is unjust and unreasonable and the complainant must then establish that its alternative rate proposal is just and reasonable"); *Ameren Services Co. and Northern Indiana Public Service Co. v. Midwest Independent Transmission System Operator, Inc.*, 121 FERC ¶ 61,205 at P 32 (2007) (finding that "[i]n a section 206 matter, the party seeking to change the rate, charge or classification has a dual burden - it must first provide substantial evidence that the existing rate is unjust, unreasonable or unduly discriminatory, and then demonstrate through substantial evidence that the new rate is just, reasonable and not unduly discriminatory," citing, *FPC v. Sierra Pacific Power Co.*, 350 U.S. 348 (1956); *Michigan Electric Transmission Co., LLC*, 116 FERC ¶ 61,164 at P 12 (2006)).

⁶⁸ *See* Complainants' Answer at 21, n. 85, citing, *Maryland Pub. Serv. Comm'n v. FERC*, 632 F.3d 1283, 1285 n.1 (D.C. Cir. 2011), *Tennessee Gas Pipeline Co. v. FERC*, 860 F.2d 446, 454 (D.C. Cir. 1988).

⁶⁹ *Maryland Pub. Serv. Comm'n v. FERC*, 632 F.3d 1283, 1285 n.1 (D.C. Cir. 2011). *Tennessee Natural Gas Pipeline v. FERC* is also distinguishable, as it addresses the question of whether the Commission could impose a new rate on a finding that a proposed rate is unjust and unreasonable. *Tennessee Gas Pipeline Co. v. FERC*, 860 F.2d 446, 453-454 (D.C. Cir. 1988).

Court's statement does not alter the Commission's long-standing precedent⁷⁰ requiring complainants, to the extent that they propose a rate, to provide support proving such proposal is just and reasonable.⁷¹ Thus, Complainants' incorrectly articulate the applicable legal precedent.

E. The NYISO Is Not Seeking "Blind Deference" to its In-City Buyer-Side Mitigation Determinations and Is Prepared to Fully Address Any Questions that the Commission May Have

Complainants' contention that the "Commission cannot defer blindly to the NYISO"⁷² is irrelevant because the NYISO has never suggested that the Commission should do so. In Docket No. EL11-50-000, the NYISO acknowledged that parties should be able to challenge NYISO buyer-side mitigation determinations. The NYISO also proposed that the Commission strike a balance between the confidentiality concerns of new entrants, the interests of other market participants, and the Commission's own interests in promoting economic investment, and conserving its resources, by using its standard investigatory procedures to consider such challenges. There is a large gap between Complainants' claim that the NYISO is seeking the Commission's blind deference, and the reality that the NYISO has invited Commission review -- including the initiation of Part 1b investigations -- to consider past buyer-side exemption determinations.

Nor is the NYISO suggesting that the Commission should "blindly defer" to the NYISO's position in this proceeding. Rather, the NYISO Answer asked that the Complaint be rejected because Complainants had failed to meet their burden of proof or to justify the extraordinary relief that they sought. It also emphasized that Complainants' stated concerns that the NYISO's implementation of the In-City Buyer-Side Mitigation Measures would be flawed

⁷⁰ *California Municipal Utilities Association, et al. v. California Independent System Operator Corporation*, 126 FERC ¶ 61,315 at P 71 (2009) (delineating the long standing Commission precedent).

⁷¹ NYISO Answer at 20 (internal citations omitted).

⁷² Complainants' Answer at 8.

was belied by the involvement of the independent MMU in the process as well as by the various responses to Complainants' claims that were included in the NYISO Answer.⁷³ There is nothing in the Complainants' Answer that should cause the Commission to reach a different conclusion now.

If the Commission were to decide, however, that it needs additional information regarding determinations under the In-City Buyer-Side Mitigation Measures, notwithstanding the fact that they have not yet been completed, the NYISO would be prepared to submit the necessary information to the Commission on a confidential basis. The Commission could then proceed in a manner similar to what the NYISO outlined in Docket No. EL11-50-000. Given the Complainants' representation that they "do not seek" and have not sought "the confidential cost information or other data that the NYISO has received regarding any other supplier",⁷⁴ they should have no objection to this proposed procedure.

As discussed in the NYISO Answer, the Commission should not adopt a process that converts the Complainants, or other market participants, into redundant *de facto* market monitors.⁷⁵ Complainants profess that they are not seeking to usurp roles properly left to the NYISO and the MMU and merely seek to better understand the NYISO mitigation procedures. Such representations are belied by their Complainants' past statements,⁷⁶ statements previously made by their supporters,⁷⁷ and by the Complainants' Answer itself, which demands that the NYISO "be directed to provide detailed information necessary for . . . market participants to

⁷³ Complainants Answer at 8.

⁷⁴ *See id.* at 3.

⁷⁵ *See* NYISO Answer at 8, 67.

⁷⁶ Complaint at 46 (stating that their objective is to be in a position to "confirm that the NYISO is, in fact, complying with the requirements of the Services Tariff").

⁷⁷ *See* IPPNY Comments at 7, 9, 11.

confirm that adjustments to gas pricing will not skew its Unit Net CONE calculations.”⁷⁸

Indeed, Complainants appear at times to be unwilling to rely even on the Commission itself to oversee the NYISO’s mitigation determinations.⁷⁹ The fact remains that allowing Complainants to routinely second-guess market power mitigation determinations made by independent entities is inappropriate and threatens to discourage economic entry.

V. CONCLUSION

For all of the reasons specified above, the Commission should accept this Supplemental Answer and deny all relief sought by the Complainants.

Respectfully submitted,

/s/ Gloria Kavanah

Gloria Kavanah
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August 8, 2011

⁷⁸ Complainants’ Answer at 20.

⁷⁹ See *id.* at 9-10 (“Moreover, as explained in the Complaint, even though the Commission could and should act to address the effects of uneconomic entry even after such entry has occurred, the Commission’s demonstrated reluctance to do so made it imperative for Complainants to ensure that the Buyer-Side Market Power Rules were correctly implemented prior to the finalization of the NYISO’s mitigation determinations.”)

CERTIFICATE OF SERVICE

I hereby certify that I have this day caused the foregoing document to be served on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, DC, this 8th day of August, 2011.

/s/ Vanessa A. Colón
Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037
(202) 955-1500

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

New York Independent System Operator, Inc.

Docket Nos. EL11-42-000

SUPPLEMENTAL AFFIDAVIT OF JOSHUA A BOLES

Mr. Joshua A. Boles declares:

1. I have personal knowledge of the facts and opinions herein and if called to testify could and would testify competently hereto.¹

I. Purpose of this Affidavit:

2. I submit this affidavit in support of the NYISO's Answer to the Comments submitted by Hudson Transmission Partners (the "HTP Comments") in response to the Complaint filed by Astoria Generating Company, L.P., the NRG Companies, and TC Ravenswood, LLC (collectively, the "Complainants").
3. I provided an Initial Affidavit in this proceeding. In the Initial Affidavit, I refuted the claims made by the Complainants that the NYISO's implementation of the "In-City Buyer-Side Mitigation Measures,"² has been flawed or will be flawed in the future. I demonstrated that the NYISO's implementation adheres to all aspects of Attachment H and Attachment O to the Services Tariff and Commission Orders.

¹ My professional and educational qualifications were summarized in PP 4-8 of my Initial Affidavit in this proceeding which I incorporate here by reference.

² As the NYISO does in the Answer, I use the term "In-City Buyer-Side Mitigation Measures" to refer to the currently-effective buyer-side capacity market mitigation provisions in Attachment H to its Market Administration and Control Area Services Tariff ("Services Tariff"), including those that were accepted by the Commission in its series of orders in Docket ER10-3043.

4. The purpose of this Supplemental Affidavit is to confirm that the NYISO does account for differences between generators and Unforced Capacity Deliverability Right³ (“UDR”) projects when conducting Unit Net CONE calculations. My Supplemental Affidavit also demonstrates that the methodology the NYISO uses to determine Unit Net CONE for UDR projects is consistent with Attachment H and Commission Orders.

II. Unit Net CONE Methodology for a UDR Project

5. The HTP Comments use the more general phrase “merchant transmission facility” to describe the HTP project when expressing concerns regarding the NYISO’s analysis of a merchant transmission facility. I will use the phrase UDR projects in my affidavit because that is the term used in the In-City Buyer-Side Mitigation Measures which specify the projects the NYISO is to examine.⁴ My Affidavit will only address UDR projects, such as the HTP project, that connect a neighboring Control Area to New York City.
6. Attachment H to the Services Tariff defines Unit Net CONE for purposes of the In-City Buyer-Side Mitigation Measures as the “localized levelized embedded costs of a specified Installed Capacity Supplier, including interconnection costs, and for an Installed Capacity Supplier located outside the New York City Locality including embedded costs of transmission service, in either case net of likely projected annual Energy and Ancillary Services revenues, as determined by the ISO, translated into a seasonally adjusted monthly

³ Capitalized terms that are not otherwise defined herein shall have the meanings specified in the Services Tariff.

⁴ See, for example, Services Tariff Attachment H § 23.4.5.7.3.

UCAP value using an appropriate class outage rate.”⁵ The NYISO applies this definition in determining the Unit Net CONE for UDR projects.

7. The methodology the NYISO uses to determine Unit Net CONE for a UDR project has been reviewed and commented on by the Independent Market Monitoring Unit (“MMU”) for the NYISO, Potomac Economics, Ltd. The MMU has not identified any compliance concerns with respect to the NYISO’s implementation of the In-City Buyer Side Mitigation Measures.
8. The NYISO’s approach to Unit Net CONE calculations for a UDR project is similar to its approach for a new generation project in a number of ways. Both classifications of projects are evaluated based on their reasonably anticipated costs minus their reasonably anticipated revenues to determine if they are exempt or subject to an Offer Floor. For a UDR project that connects to a neighboring Control Area, the costs and revenues associated with a UDR project will be different from a new generator located within the New York Control Area.
9. The NYISO’s methodology includes looking at the levelized embedded costs of the transmission facility, including the required upgrades necessary to make the facility deliverable in New York City, and the costs of upgrades in the neighboring Control Area that are required to export firm energy. The project is evaluated for the amount of MW for which CRIS rights have been awarded at the NYCA interconnection point.
10. Costs, if any, for the project to be deliverable to the NYCA interface are a component of Unit Net CONE because establishing deliverability is a prerequisite to obtaining UDRs. The Services Tariff provides that “[t]o the extent the NYCA interface is with an External Control Area the Unforced Capacity associated with UDRs must be

⁵ See Attachment H§23.2.1 at definition of Unit Net CONE.

deliverable to the Interconnection Point."⁶ In addition, a project must be deliverable to qualify as an In-City capacity resource: "[t]o be counted towards the locational component of the LSE Unforced Capacity Obligation, Unforced Capacity owned by the holder of UDRs or contractually combined with UDRs must be deliverable to the NYCA interface with the UDR transmission facility pursuant to NYISO requirements and consistent with the election of the holder of the rights to the UDRs set forth in this Section."⁷

11. In addition to the costs of the transmission facility itself, the NYISO's analysis of a UDR project connecting to a neighboring Control Area takes into account the cost of the capacity in the neighboring Control Area. This analysis is required because the In-City Buyer-Side Mitigation Measures are utilized to make determinations for In-City capacity resources. Without procuring capacity, a transmission line is not capable of receiving ICAP revenues in the NYC capacity market. The NYISO would use a reasonable estimate of the cost of capacity in the neighboring Control Area based on that Control Area's capacity market clearing prices for the respective location from which the capacity could be withdrawn.
12. To determine Unit Net CONE, the NYISO subtracts from the costs identified above, the reasonably anticipated energy and ancillary services revenues. The model used to determine energy revenues for a UDR project takes into account the price spread between the respective locations in the Control Areas from which the power is

⁶ See Services Tariff §2.21 at definition of Unforced Capacity Deliverability Rights.

⁷ See Services Tariff §5.11.4.

exported and the location to which it is imported. In order to determine the price spread that would induce arbitrage, the NYISO also considers the associated fees a market participant pays to export energy from the neighboring Control Area. This fee is used as the “hurdle rate” for when the model assumes a transaction will be scheduled to flow and when it will not. In the hours in which the energy spread exceeds the hurdle rate, this rate is subtracted from the spread to calculate the net energy revenues. Because arbitraging prices between Control Areas does not occur optimally in 100 percent of the hours when there is a price spread greater than the transaction costs, the energy revenues must also be discounted to capture the percentage of time that arbitrage can reasonably be expected to occur.

13. As stated in my Initial Affidavit, the NYISO contracted with NERA Economic Consulting (“NERA”) to perform the energy revenue estimates for all Unit Net CONE determinations. NERA uses its econometric model to estimate NYISO energy prices at the expected excess capacity level used in the In-City Buyer-Side Mitigation Measures. For a UDR project, instead of comparing those prices to the variable operating costs of the unit, the NERA model compares them to the hourly energy prices in the neighboring Control Area. NERA uses the econometric model to adjust historic NYISO hourly prices for the applicable excess capacity level and then compares the adjusted NYISO prices to those in the neighboring Control Area.
14. NERA has authorized the NYISO to state that they believe the analysis described in this Supplemental Affidavit for UDR project net revenues provides reasonable net revenue estimates.

15. The NYISO's analysis takes into account the other costs and revenues that the UDR project would be reasonably anticipated to incur or receive under the neighboring Control Area's tariff. For example, for a UDR project that connected PJM to New York City, the NYISO would consider whether Auction Revenue Rights ("ARRs") are available to a project.

Conclusion

16. This Affidavit demonstrates that the NYISO's methodology to implement the In-City Buyer-Side Mitigation Measures for UDR projects that connect to the NYCA from a neighboring Control Area is consistent with all aspects of Attachment H to the Services Tariff.

This concludes my affidavit.

ATTESTATION

I am the witness identified in the foregoing Supplemental Affidavit of Joshua A. Boles dated July 21, 2011 (the "Affidavit"). I have read the Supplemental Affidavit and am familiar with its contents. The facts set forth therein are true to the best of my knowledge, information, and belief.



/s/
Joshua A. Boles
Supervisor, Market Mitigation and Analysis
New York Independent System Operator, Inc.
July 21, 2011

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



GLORIA KAVANAH
Notary Public, State of New York
No. 4941412
Qualified in Schenectady County
Commission Expires 8/8/2012

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

**Astoria Generating Company, L.P., NRG
Power Marketing LLC, Arthur Kill Power
LLC, Astoria Gas Turbine Power LLC,
Dunkirk Power LLC, Huntley Power LLC,
Oswego Harbor Power LLC and TC
Ravenswood, LLC**

Complainants,

vs.

**New York Independent System Operator,
Inc.**

Respondent.

Docket No. EL11-42-000

**SUPPLEMENTAL AFFIDAVIT OF
EUGENE T. MEEHAN**

Mr. Eugene T. Meehan declares:

1. I have personal knowledge of the facts and opinions herein and if called to testify could and would testify competently hereto.

I. Purpose of this Affidavit

2. The purpose of this Supplemental Affidavit is to respond to the portion of the Second Supplemental Affidavit of Mr. Mark D. Younger¹ concerning adjusting net energy revenues for future gas prices.

¹ *Complainants' Motion for Leave to Answer and Answer* at Attachment A Younger Second Supplemental Affidavit, Docket No. EL11-42-000 (July 21, 2011) ("Younger Second Supplemental Affidavit").

II. Qualifications

3. I am a Senior Vice President with NERA Economic Consulting (“NERA”) and have more than thirty years experience consulting with electric and gas companies. I have testified as an expert witness before numerous state and federal regulatory agencies, and in Federal court and arbitration proceedings.
4. A full statement of my qualifications is provided as Exhibit Meehan-A to my Initial Affidavit filed in this proceeding as Attachment 3 to the NYISO’s Answer.²

III. Response to Younger Critiques

5. Mr. Younger, in his Second Supplemental Affidavit, offers several critiques of using forward gas prices in the calculation of net energy revenue estimates. I respond to each of these critiques below.
6. It is my opinion that Mr. Younger’s affidavit is generally misleading with respect to the impact of gas prices on energy prices and net energy revenues in the NERA econometric model, and that as stated clearly in the NERA/S&L Demand Curve Report, “the regression results with respect to gas prices are quite sensible generally.”³ I explain below in detail the reasons why I believe Mr. Younger’s critiques are misleading and incorrect.

² See *Answer of the New York Independent System Operator, Inc.*, Docket No. EL11-42-000 (July 6, 2011), as modified by the errata filed July 7, 2011 (“NYISO Answer”).

³ See *New York Independent System Operator, Inc., Tariff Revisions to Implement ICAP Demand Curves for Capability Years 2011/2012, 2012/2013, and 2013/2014*, Docket No. ER11-2224-000 (filed November 30, 2010), at Attachment 2 (Meehan Affidavit) Exhibit B “Independent Study to Establish Parameters of the ICAP Demand Curve for the New York Independent System Operator” (“NERA/S&L Demand Curve Report”) at 54.

7. Mr. Younger states that “Mr. Meehan does not specify how many years of gas futures pricing he used nor does he explain why near term gas prices would dictate whether a unit entry is economic.”⁴ Mr. Younger is incorrect. Paragraph 22 of my Initial Affidavit clearly states:

The energy revenues in the Unit Net CONE calculation are not computed over the life of the unit but are estimates of energy revenues for the three-year period starting with initial entry. It is my opinion that, in most cases, only energy revenues in the near-term period after entry, rather than energy revenues over a longer period, are germane to the decision on when to develop the unit, as the timing of development is largely discretionary. To the extent that a developer would expect future energy revenues to increase significantly in real terms, the development of the unit could be delayed. It is only energy revenues in the first few years of unit operation that offset ownership costs in those years. Forecasting net energy revenues over a 30-year period is inherently speculative and there is a wide range of plausible predictions as fuel prices and load are very uncertain over such a long period. The speculative nature and uncertainty would render an objective estimation of Unit Net CONE difficult.⁵

Hence both of these critiques are simply wrong, and in my view, misleading. My Initial Affidavit does specify how many years of gas futures pricing were used and does explain why near term gas prices, through their effect on energy revenues, would dictate whether unit entry is economic.

8. In discussing the decision made in the Demand Curve reset to not adjust for future gas prices, Mr. Younger states that Mr. Meehan “does not adequately explain the basis for, or the context surrounding, such rejection or explain what, if any, adjustments to the model have been made that would correct for the problems with this approach that

⁴ Younger Second Supplemental Affidavit at P 6.

⁵ NYISO Answer at Attachment 3 Affidavit of Eugene T. Meehan at P 22 (“Initial Affidavit”).

NERA itself recognized in the 2010 Demand Curve Reset Process. Indeed, he does not even acknowledge the counterintuitive results that the NERA model produced when this approach was examined in the 2010 Demand Curve Reset Process. Nor does he provide any quantification of the impact that resulted from using the gas futures pricing to make the Unit Net CONE calculations.”⁶ Again, Mr. Younger is incorrect on each of his points. First, my Affidavit cites the relevant section of the NERA/Sargent & Lundy Demand Curve Report – a report that is part of the record in a Commission proceeding – that fully explains these issues.⁷ The explanation is thus clearly incorporated by specific reference, and it is not necessary to repeat the issue and the consideration of it in this Supplemental Affidavit. Second, with respect to the counterintuitive result, the only counterintuitive result in the NERA/S&L Demand Curve Report is the following observation: “[W]hile the regression results with respect to gas prices are quite sensible generally, the regression makes an odd prediction for November. For whatever reason, November LBMPs on average do not respond to gas prices at all; and in the early morning hours higher gas prices lead to lower LBMPs: the (insignificant) results are actually negative. This problem is fairly easy to adjust for -- by constraining the November changes to zero -- but represents yet another adjustment.”⁸ Hence, the counterintuitive result is not significant and Mr. Younger’s affidavit incorrectly implies that it is.

9. Mr. Younger states that “[d]espite these well-documented dynamics that have defined the New York markets for a long time, when NERA attempted to fold lower gas

⁶ Younger Second Supplemental Affidavit at P 8.

⁷ Initial Affidavit at P 16.

⁸ NERA/S&L Demand Curve Report at 54.

futures pricing assumptions into its modeling assumptions, NERA's 2010 Demand Curve Reset Process econometric model counter-intuitively produced net energy revenues for new entrants that actually increased."⁹ This result is not counterintuitive. While it is true, as Mr. Younger states, that energy prices are highly correlated with gas prices, new unit operating costs are also highly correlated with gas prices and much more directly so as the new plants used for the Demand Curve reset burn gas. Whether net revenues fall or rise as gas prices fall or rise depends on the relative impact of gas prices on the market price of energy and the relative impact of gas prices on the operating cost of the unit.

10. For example, assume that there are two units and one has an average heat rate of 7,000 BTU/kWh and the other an average heat rate of 10,000 BTU/kWh. If gas prices rise by \$1.00 per MMBTU, the operating costs of the first will rise by \$7.00 per MWh and the operating cost of the second would rise by \$10.00 per MWh. Further assume that the estimated increase in energy price as a result of the rise in gas price was \$8.50 per MWh, a result exhibiting a very high degree of correlation between gas and electric prices. The net energy revenues for the unit with the 7000 BTU/kWh heat rate would increase and the net energy revenues for the 10,000 BTU/kWh heat rate unit would decrease. Neither change is counterintuitive; both changes occur given a high correlation between gas and electric prices, and both are explainable. The difference is simply a result of the relative impact of gas prices on the energy price and the relative impact of gas prices on the operating cost of a specific unit. The NERA/S&L Demand Curve Report is quite clear that this is not counterintuitive:

⁹ Younger Second Supplemental Affidavit at P 13.

Gas prices in the historic period average \$8.00/MMBTU. This level is considerably above the average gas prices observed in the currently observed futures data, which suggests average prices in the next three years of approximately \$6.70/MMBTU. Some stakeholders have argued that we should adjust for this effect by using forward gas prices in the regression to simulate future price conditions in the market. They expressed this desire with an intuition that lower gas prices would lower profits.

We have experimented with implementing the requested change in gas prices and the results are just the reverse, at least for the Frame 7 units upstate. For the LMS100 units in New York City and Long Island, there is very little difference.¹⁰

As in the simple example above, this correlation is a function of the heat rate. These results are not counterintuitive when one considers that gas prices affect both cost and revenue. Also they are not evidence of an anomaly in the NERA econometric model. While it is true that a generating unit will only operate if it has variable costs less than the LBMP, and hence the unit heat rate is lower than the LBMP-implied heat rate, there are reasons why the impact of a gas price change on LBMP would be less than the impact on a specific unit's operating cost. Examples include cases where emissions, non-fuel variable operating and maintenance costs ("O&M"), and operating cost uncertainties reflected in bids would result in an LBMP higher than a specific unit's operating cost and would be larger for the marginal unit than for the specific unit, and as a result the impact of a gas price change on LBMP would be lower than the impact on the specific unit's operating cost.

11. The NERA econometric model behaves very sensibly with respect to gas prices. The NERA/S&L Demand Curve Report states that "the regression estimates demonstrate quite conclusively that the elasticity of LBMP changes with respect to gas price changes is clearly lower than one, so that a ten percent reduction in gas price yields

¹⁰ NERA/S&L Report at 53.

much less than a ten percent reduction in LBMP.”¹¹ The report also finds that “[t]he standard indicia of model fit are quite good. The basic regression model explains about 88 percent of the underlying variation in electric prices. This result implies that given the zone, the hour, the NYCA and zonal load, Gas Price, reserve margin and temperature, we can capture about 88 percent of the variation in electricity price around its mean.”¹² I asked my colleague, NERA Vice President Mr. Jonathan Falk,¹³ to review the elasticity estimates with respect to gas. The elasticity estimates differ for each hour of each month. The elasticity estimates averaged over all hours are 0.67, and the estimates for July and August of each year of the Demand Curve historic period (November 1, 2006 to October 31, 2009; the “Historic Period”) are over 0.90. An elasticity of 0.8 means that for a 10 percent change in gas price, the energy price changes by 8 percent. This is a high correlation. Mr. Younger’s affidavit paints a misleading picture of the degree to which the NERA model appropriately responds to gas prices and of the potential impact of gas price adjustments on net energy revenues. He repeatedly claims that results developed using alternate gas prices are counterintuitive, when they clearly are not. The one counterintuitive observation was limited to November off-peak LBMPs and was insignificant. If he is suggesting that elasticity estimates should be 1, that is unsupported, inconsistent with the data, assumes that gas is on the margin 100 percent of the time and that external markets do not respond to NYISO prices, and ignores the fact that a portion of variable costs relate to emissions costs and other non fuel costs.

¹¹ *Id.* at 54.

¹² *Id.* at 46 (referencing the NERA econometric model used in the 2007 Demand Curve reset: “The equivalent figure for the similarly structured 2007 model was 83 percent.”)

¹³ Mr. Falk’s c.v. is Exhibit A to this Affidavit.

12. To illustrate the impact of the magnitude of the response of net energy revenues to gas prices, I asked Mr. Falk to develop estimates of net energy revenues for a generic combined cycle unit, a generic LMS100, and a generic Frame 7. The Frame 7 is located in the Capital Region, and the LMS100 and combined cycle unit are located in New York City. The average gas price over the Historic Period was \$8.00 per MMBTU. The average forward gas price over the May 2013 to April 2016 Mitigation Study Period is \$6.51 per MMBTU.¹⁴ The table below shows resulting net energy revenues under each scenario:

	Historic Period Gas Price	Updated Gas Price
Frame 7	\$17.50 / kW	\$17.94 / kW
LMS100	\$57 / kW	\$58.53 / kW
Combined Cycle	\$152 / kW	\$144.20 / kW

13. These results demonstrate that the lower gas price during the Mitigation Study Period, compared to the Historic Period, contributes to a 2.9 percent increase in the energy revenues for the less efficient Frame 7 unit. With the lower gas prices, the energy revenues for the somewhat more efficient LMS100 unit increase by less than 1.8 percent, and the most efficient combined cycle unit shows a decline in energy revenues of 5.3 percent. These results follow the explanation given in Paragraph 10: the differing effects of gas prices on energy revenues is a result of the relative impact of gas prices on the market price of energy and the relative impact of gas prices on the operating cost of a specific unit. It should be noted that the results are demonstrative

¹⁴ Source: NYMEX Henry Hub Futures with Transco Z6 Basis Swaps as of 7/15/11

numbers computed to show the impact of gas price adjustments on ICAP Demand Curve revenues. They are illustrative only and are provided without adjustments for Special Case Resources, forced outage rates, inflation, the ratio of average annual capacity to ICAP capacity and are developed using the actual levels of excess over the Historic Period. Hence, they will not match the equilibrium values used to develop the Demand Curve or the net energy revenues used by NYISO in the In-City Buyer-Side Mitigation Measure determinations.¹⁵ They do however use the same regression equation and are representative indications of how changes in gas prices affect net energy revenue estimates.

14. Mr. Younger's view that the results are counterintuitive seems to be missing or ignoring the actual effect of gas prices on net energy revenues. For a unit with a heat rate of 10,000 BTU/kWh (typical of a Frame 7), each \$1.00 per MMBTU increase in gas prices results in an increase in costs of \$10.00 per MWh; with a heat rate of 9,000 BTU/kWh (typical of a LMS 100), each \$1.00 per MMBTU increase in gas prices results in an increase in costs of \$9.00 per MWh; and with a heat rate of 7,000 BTU/kWh (typical of a combined cycle), each \$1.00 per MMBTU increase in gas prices results in an increase in combined cycle costs of \$7.00 per MWh. Hence, unless the market prices of energy are affected by a much greater amount, the impact on net energy revenues is not likely to be very large, and the direction of the change of the net revenue may well be a small move in the opposite the direction of the change in gas prices and energy prices.

¹⁵ Consistent with the NYISO Answer, the term "In-City Buyer Side Mitigation Measures" is used here to refer to the currently-effective buyer-side capacity market mitigation provisions in Attachment H to its Services Tariff, including those that were accepted by the Commission in its series of orders in Docket ER10-3043.

15. The NERA/S&L Demand Curve Report notes four complexities associated with adjusting for gas prices. The first of these complexities is serially replacing monthly gas prices over the Historic Period with monthly gas futures prices; that is, replacing the gas prices in the Historic Period with current gas futures prices. The NERA/S&L Demand Curve Report identifies that serially representing the future prices will have an impact which may be arbitrary as each month in the Historic Period has specific factors that affect energy prices.¹⁶ To effectively neutralize the potentially arbitrary impact from serially representing forecast prices, the monthly gas futures prices were averaged over the three-year Mitigation Study Period. Thus, the impact associated with assigning a specific future gas price to each historic month that is modeled was considered and adjusted for in developing net energy revenue estimates for purposes of applying the In-City Mitigation Measures.
16. The second complexity discussed in NERA/S&L Demand Curve Report with using gas futures prices is how to represent intra-month volatility.¹⁷ The issue discussed is that the most sensible method seems to be to simply replicate the observed proportional pricing relative to the mean, but the report notes that this reduces the standard deviation of gas prices by half. A fuller explanation of this issue is needed as the NERA/S&L Demand Curve Report does not fully characterize the nature of the problem, however, its impact is correctly depicted. The issue more fully explained is not related to the intra-month volatility, for which the historical daily relationship of prices to the mean monthly price will produce a reasonable estimate of the intra-month

¹⁶ NERA/S&L Demand Curve Report at 54.

¹⁷ *Id.*

standard deviation, but that in using a single average forward price as the monthly mean price, the volatility of monthly average prices is not represented and hence the full probabilistic range of monthly mean gas prices will not be represented and as a result the full volatility or standard deviation of daily gas prices will not be accounted for. Hence, I would agree with Mr. Younger on the narrow point that this issue is a potential issue and that in work done to date with respect to In-City mitigation it has not been corrected for. The mean gas price used is correct but the dispatch is not examined over the full range of possible daily gas prices. The complexity of this adjustment and need to expand the analysis is a good example of why the NERA/S&L Demand Curve Report recommended against adjusting for gas price futures. However, I do not believe that this is a significant issue that would render the net energy revenue estimates unreasonable or unfit for use to implement In-City mitigation measures.

17. While the issue of fully representing the gas price standard deviation has not been corrected for, there are two important points to note. First, this only affects units with significant optionality,¹⁸ that is higher heat rate units that will be dispatched differently and earn significantly different revenue at different levels of gas prices as a result of the different dispatch. As the table in Paragraph 12 shows, the peaking units or units with optionality do not experience significant revenue changes in response to gas price changes. While the combined cycle unit does see a larger change, it is a lower heat rate unit without optionality and I would not expect that its net revenue

¹⁸ A unit I considered to have optionality if its cost structure is such that its dispatch will vary considerably with market prices and market conditions. A base load unit has no optionality, while a peaking unit has high optionality.

estimates would be sensitive to volatility in mean monthly gas prices. Second, making the correction will likely increase the estimate of net energy revenue and reduce the application of mitigation measures. I do not believe that the use of only a mean monthly gas price based on gas prices futures provides a misleading or unreasonable view of net energy revenue estimates. The issue only applies to higher heat rate gas units and as I have shown in Paragraph 10, and the sensitivity of those units net energy revenues to gas prices is low. Additionally, the bias would be to understate the net energy revenues for units with optionality. As a cautionary measure, the NYISO could in future work involving the evaluation of higher heat rate units consider that net energy revenues for such units may be understated if such a unit was narrowly missing a threshold, as this is the situation in which the issue may be of decisional consequence.

18. The third issue with using gas futures is the November anomaly with respect to low elasticity. This anomaly still exists, whether or not gas futures prices are used, but as noted in Paragraph 11 and in the NERA/S&L Demand Curve Report, the effect is insignificant.¹⁹
19. The fourth issue is the elasticity of LBMP with respect to gas prices. As shown above in Paragraph 11, the elasticity results are reasonable, averaging 0.67 over all hours and over 0.9 in the summer. The NERA/S&L Demand Curve Report states that “the regression results demonstrate quite conclusively that the elasticity of LBMP changes

¹⁹ NERA/S&L Demand Curve Report at 54.

with respect to gas price changes is clearly lower than one.”²⁰ Further as discussed in Paragraph 11, it would be unreasonable to expect an elasticity of one.

20. In sum, Mr. Younger has claimed that the four complications of using gas futures prices discussed in the NERA/S&L Report have not been addressed. I have demonstrated in this Supplemental Affidavit, and in my Initial Affidavit, that he is generally not correct. Appropriate adjustments have been made in the case of the serial use of monthly gas prices. It is reasonable to not adjust for the suppression of gas price volatility that results from using gas price futures which do not reflect the potential intra-month volatility in gas prices because the possibility of understating net energy revenues is only present in some cases and, when it is present, the practical impact is not likely to be significant. The November anomaly is insignificant in the context of determining the net energy revenues of the Unit Net CONE determinations here (and also insignificant in the Demand Curve reset.). The observation of the elasticity of LBMPs with respect to the gas price does not require any adjustment. As previously stated, the results of the NERA regressions with respect to gas prices are quite sensible.

21. Mr. Younger raises a substantial issue with respect to whether the economic analysis should be conducted over the three-year Mitigation Study Period or over the life of the project. While I have discussed that briefly earlier, I will elaborate on that issue. In general, I view the analysis over the Mitigation Study Period as the stricter and more appropriate test. It may be possible to justify development of a generating unit over a long life based on factors such as assumed rising fuel prices or environmental

²⁰ *Id.*

regulations that lead to unit retirements and higher market prices of energy. But if these factors do not affect the near-term Mitigation Study Period, entry that is economic over the full life would not be economic in the Mitigation Study Period. The developer then has the option to wait and develop the project later. It is irrelevant if a unit is economic over its full life if it is not economic in the Mitigation Study Period, as it would constitute uneconomic entry to not defer the entry decision. While there may be exceptions, for example, if development was a one-time opportunity or if the expectation was for long term declines in fuel prices or looser environmental regulations over time, but as a general rule, viewing the economics of the project over the Mitigation Study Period is a stricter screen for detecting uneconomic entry. Additionally, it is difficult to envision an objective screen for uneconomic entry over the entire life of the project as so many assumptions would be required, for example, concerning fuel prices, load growth, environmental regulations, unit retirement, transmission system changes, and technology changes. Hence, I believe that is appropriate that the test for the In-City Buyer-Side Mitigation Measures be applied over the Mitigation Study Period.

22. In summary, the decision to incorporate forward gas prices in the Unit Net CONE calculation for determinations under the In-City Buyer-Side Mitigation Measures stems from the need to most accurately depict the economics of the investment decision over the period of initial entry, at the time the entry decision is made. The NERA/S&L Demand Curve Report described concerns with using forward gas prices for the Demand Curve reset. All these concerns are discussed in this Affidavit and all have been addressed to the extent appropriate. The modeling result that lower gas

prices can produce higher net energy revenues has been substantiated and supported with a rational explanation of the potential drivers of this result. The decision to use gas future prices in the determinations for the In-City Buyer-Side Mitigation Measures is wholly justified, and the arguments presented in the Second Supplemental Affidavit by Mark Younger are generally incorrect and misleading. I believe the net energy revenues used in the NYISO's instant application of In-City mitigation are reasonably estimated and fit for the purpose to which they are applied.

This concludes my affidavit.

ATTESTATION

I am the witness identified in the foregoing Affidavit of Eugene T. Meehan dated August 5, 2011 (the "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
Senior Vice President
NERA Economic Consulting
August 5, 2011

Subscribed and sworn to before me
this 5th day of August.



RHONDA M. McDONALD
NOTARY PUBLIC DISTRICT OF COLUMBIA
My Commission Expires July 14, 2012

EXHIBIT A

JONATHAN FALK
CURRICULUM VITAE

Mr. Falk is a Vice President in NERA's Energy Practice. He received his B.A., *cum laude*, and M.A. in Economics from Yale University. While completing Ph.D. examination requirements at Yale, he taught courses in microeconomic theory and the history of economic thought.

In NERA's electricity practice, Mr. Falk has consulted with a wide variety of electricity industry participants on a number of issues involving the statistical modeling of investment, industry structure, and both short- and long-run pricing questions. He has substantial experience in dispatch modeling for complex electric systems, especially the development of software for large linear programming-based marginal cost models, including the modeling of both run-of-river and storage hydro systems. He has been involved in the creation of novel insurance products to transfer price risk in electric markets. He was a participant in the design process for the New England Forward Capacity Market. Mr. Falk has also statistically estimated the value of reliability in restructured electric markets. In addition, he has studied market power questions in emerging electricity markets and has estimated the social benefits of real-time pricing options for electricity. His work has also addressed questions of valuation, optimization, and the financial risks associated with restructured electric markets. He has advised on the structure of market rules, including the benchmarking of contracts between affiliated entities. Finally, he has created a number of models to value flexibility in utility planning, including hydro-based uncertainty. Mr. Falk has lectured and written as well on game-theoretic strategies in electric market bidding for both energy and capacity. Mr. Falk has appeared before both state commissions, Canadian provincial commissions and the Federal Energy Regulatory Commission.

As a statistical expert, Mr. Falk has specialized in statistical estimation for both liability and damages and the creation of models to simulate economic processes. He has testified as an expert witness on both general statistical issues and industry-specific studies in electricity and telecommunications.

In NERA's Communications Practice, Mr. Falk has participated in studies on residential access demand to the telephone system, choice of service among telephone company offerings, optimal pricing structures, and estimation of the short- and long-run marginal costs of telephone service.

In environmental economics, Mr. Falk has estimated benefits in recreational activity and increased property values resulting from tighter discharge standards for paper mills and for nuclear power plants.

Mr. Falk has worked on several cases involving credit discrimination in automobile and housing markets. He has also performed statistical analyses to predict credit decisions.

Finally, in labor economics, Mr. Falk has testified both on statistical estimations of liability in termination and promotion processes and in calculations of lost earnings in both wrongful termination and wrongful death cases. In addition, he has testified in several cases on contract damages and has extensive experience in the estimation of damages arising from contract disputes.

Education

Yale University

M.Phil., Economics, 1982

M.A., Economics, 1980

B.A., Economics, 1978

Professional Experience

NERA Economic Consulting

1984- Vice President (current position)

Independent Consultant

1981-1983 Worked for various firms including PM Industrial Economics and MRR Associates on the development of econometric models in energy and financial analysis. Also consulted on installation of microcomputer systems.

Yale University

1980-1981 Teaching Assistant

Taught introductory micro-economics and history of economic thought.

US Department of Transportation

1980 Summer Research Assistant, Energy Policy Division

Analyzed energy related transportation issues, including diesel automobiles, coal slurry pipelines, fuel allocation regulations, and coal export policies.

Professional Activities

Faculty, Practising Law Institute, Employment Law Seminar

Member, American Statistical Association

Publications

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“Competitive Markets for Power 2001: An Electrical Odyssey,” presented at the USA annual meeting, Key Largo, Florida, June 13, 2001.

“Electricity Restructuring: The (Pretty) Good, The (Pretty) Bad, and the (Extremely) Ugly,” Marsh, Inc. Power Group Conference, Palm Harbor, FL, February 14, 2001.

“Competitive Nuclear Power”, presented at the USA Nuclear Annual Meeting, Lake Tahoe, NV, June 14, 2000.

“Applying Congestion Pricing in a Decentralized Electricity System,” presented at InfoCast Transmission Pricing Conference, Chicago IL, May 2, 2000.

“Electric Price Volatility: Causes, Prospects and Solutions,” presented at PURMA Annual Conference, Sturbridge, MA, October 12, 1999.

“Ensuring Accurate Price Forecasting: A Building Block for Asset Valuation,” presented at IIR Conference: Buying and Selling Utility Generation Assets, Atlanta, GA, October 1, 1999.

Price-Cost Modeling of Electricity Markets at “New Directions in the Economic Analysis of Market Power,” sponsored by National Economic Research Associates, presented at the Four Seasons Hotel, Washington, D.C., June 24, 1998.

Panelist, “Litigating Employment Discrimination,” sponsored by the Practising Law Institute, presented at the NYC-Sheraton, June 9, 1998.

Panelist, “Examination Of Defendant’s Economics Expert In A Discrimination Case,” presented at the New York State Bar Association Annual Meeting of the Commercial and Federal Litigation Section and Corporate Counsel Section, January 28, 1998.

“Calculating Economic Damages,” presented at the Second Annual Employment Law Litigation Institute, sponsored by the Labor & Employment Law Section of the New York State Bar Association and St. John’s University School of Law, Queens, New York, May 16, 1997.

“How to Minimize the Impact of Stranded Costs on Credit Valuation,” CBI Conference on Credit Ratings for U.S. Utilities and Power Projects, New York, New York, November 22, 1996.

“Statistics for Labor Lawyers: Using Math to Tell a Story,” sponsored by National Employment Lawyers Association, New York, New York, October 29, 1996.

Seminar Participant. “How to Hire and Fire,” Practising Law Institute Conference on Employment Law, New York, New York, October 2, 1996.

“Modeling Who Gets RIFed: What’s Age Got To Do With It?,” luncheon seminar sponsored by National Economic Research Associates, New York, New York, May 1, 1996.

“Econometrics and Marginal Cost,” presented at Symposium on Marginal Cost Techniques for Telephone Services, sponsored by The National Regulatory Research Institute, in Seattle, Washington, July 18-19, 1990, and in Columbus, Ohio, August 15-16, 1990.

with Mark Berkman, “Valuing Flexibility in Utility Planning Using Dynamic Programming,” presented at Decision Support Methods for the Electric Power Industry Conference, sponsored by Electric Power Research Institute, Cambridge, Massachusetts, May 29-31, 1990.

with Lewis J. Perl, “The Use of Econometric Analysis in Estimating Marginal Cost: The Choice of Functional Form,” presented at the International Telecommunications Society, North American Regional Conference, Ottawa, Canada, June 19, 1989.

“Investment in Equipment Modernization: The Question of Prudence,” presented at Telecommunications Policy in a Competitive Environment, sponsored by NERA, Scottsdale, Arizona, April 12-15, 1989.

with Lewis J. Perl, “The Use of Econometric Analysis in Estimating Marginal Cost,” presented at the Bellcore and Bell Canada Industry Forum, San Diego, California, April 6, 1989.

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