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

PJM Interconnection, L.L.C.) Docket No. ER04-539-002

**PJM INTERCONNECTION, L.L.C.'s
ANSWER TO PROTESTS**

Pursuant to Rule 213 of the Federal Energy Regulatory Commission's ("Commission") Rules of Practice and Procedure, 18 C.F.R. § 385.213, PJM Interconnection, L.L.C. ("PJM") hereby answers protests and comments of Duke Energy North America, LLC and Duke Energy Trading and Marketing, L.L.C. ("collectively "Duke") and Edison Mission Energy, Edison Mission Marketing & Trading, Inc., and Midwest Generation EME, LLC (collectively "EME Companies") to the Explanation of PJM Interconnection, L.L.C. In Response To Order On Market Mitigation Mechanisms Concerning Energy Market Mitigation Issues filed in this docket on April 23, 2004 and supplemented April 26, 2004.¹

¹ While the Commission's Rules of Practice and Procedure generally do not permit answers to protests (see 18 C.F.R. § 385.213(a)(2)), the Commission has made exceptions "where an answer clarifies the issues or assists in creating a complete record." Idaho Power Co., 95 FERC ¶ 61,482, at 62,717 (2001), see also Cambridge Elec. Light Co., 95 FERC ¶ 61,162, at 61,523 (2001). Here, PJM's answer clarifies certain aspects of the market analyses performed by the PJM Market Monitoring Unit ("MMU") raised by the intervenors, which provides a more complete record to assist the Commission in reaching its decision, and therefore should be permitted.

I. Introduction and Background

On April 23, 2004 (supplemented on April 26, 2004),² PJM, in compliance with the Commission's order in PJM Interconnection, L.L.C., 106 FERC ¶ 61,277 (2004) ("March 24 Order"), submitted its explanation concerning the need for temporary mitigation of market power in the Northern Illinois Control Area ("NICA") energy market when the pathway between PJM and NICA is constrained from east to west. PJM explained that, although the hours when mitigation might be needed would be limited (in fact, mitigation was needed during only seven hours in May 2004, and only two units had to be compensated at their mitigated offer price),³ PJM believes that a blanket exemption from mitigation would be inappropriate given the results of the MMU's analysis of the NICA energy market using the methodologies set forth in the Market Power Policy Order.⁴

On May 26, 2004, Duke and EME Companies each filed a protest or comments raising certain issues regarding the MMU's analyses and objecting to PJM's proposed mitigation measures for the NICA energy market. In this answer, PJM responds to Duke's and EME Companies' criticisms of the MMU's analyses and reiterates its position that the PJM market rules (section 6.4) should not be amended to exempt the pathway constraints from PJM to NICA from PJM's offer-capping provisions. As noted

² On April 26, 2004, PJM supplemented its filing by submitting a corrected confidential version and requisite copies of the non-confidential version of the Declaration of Joseph E. Bowring.

³ Declaration of Joseph E. Bowring attached hereto as Exhibit A at ¶ 3 ("Bowring Decl.").

⁴ AEP Power Mktg., Inc., 107 FERC ¶ 61,018 (2004) ("Market Power Policy Order").

in its initial explanation, PJM does not oppose the exception when the pathway is constrained from NICA to PJM.⁵

II. The MMU's Reliance On The Market Screens Set Forth In The Market Power Policy Order To Evaluate The Necessity For Mitigation Measures In the NICA Energy Market is Proper

Duke asserts that PJM's reliance on the market screens set forth in the Market Power Policy Order, as the basis for the need for market mitigation in the NICA energy market, is improper because "the screens are designed to evaluate whether an individual applicant for market-based rates has generation market power."⁶ It further alleges that PJM's conclusion that the entire NICA energy market is "presumptively non-competitive" based on these screens "is a leap that is not supported in any way by the Market Power Policy Order," and that if a supplier fails one of the screens (like here), "that supplier alone, not the entire market, is subject to possible mitigation."⁷

The Market Power Policy Order addresses many of the same issues that were raised by the Commission in the March 24 Order and provides a specified methodology

⁵ Bowring Decl. at ¶ 5. Because PJM does not oppose the exception for west to east constraints, PJM assumes that the Commission will make it effective as of May 1, 2004, and PJM is not currently imposing mitigation in these circumstances. PJM is mitigating generation in the limited hours that it is necessary when the pathway is constrained from east to west, pursuant to the currently effective market rules.

⁶ Protest Of Duke Energy North America, LLC and Duke Energy Trading and Marketing, L.L.C. In Response To PJM's Compliance Filing, Docket No. ER04-539-002, (May 26, 2004), at 3 ("Duke Protest"). EME Companies similarly assert that "the MMU should logically only mitigate the party that fails the market share screen and delivered price test." Comments Of Edison Mission Energy, Edison Mission Marketing & Trading, Inc. And Midwest Generation EME, LLC, Docket No. ER04-539-002 (May 26, 2004), at 11-12 ("EME Companies Comments").

⁷ Duke Protest at 3-4.

for addressing those issues, including the role of imports and bilateral contracts and the extent of economic competition.⁸ Moreover, the MMU applied the screens in an “extremely conservative manner, especially with regard to the level of competition from imports.”⁹ Even with its conservative application of the market screens, the results of the MMU’s analyses reveal that the NICA energy market exhibits the structural conditions for market power on a stand alone basis.¹⁰ Significantly, the results “are not limited to one or two individual market participants but extend to the entire market.”¹¹ For example, as discussed below, the Delivered Price Test Hirschman-Herfindahl Index (“HHI”) illustrates a structural problem with the market rather than with particular participants.¹²

When a market is structurally non-competitive, all offers into that market should be mitigated. Mitigating only suppliers that are dominant in a market, as Duke and EME Companies suggest,¹³ would encourage gaming and other anti-competitive behaviors.¹⁴ For example, mitigating only one or two dominant generation owners could create an incentive for mitigated generation owners to enter into bilateral arrangements with non-mitigated participants, pursuant to which the non-mitigated participant would control

⁸ Bowring Decl. at ¶ 1.

⁹ Id. at ¶ 11.

¹⁰ Id.

¹¹ Id.

¹² Id.

¹³ See n.6, supra.

¹⁴ Bowring Decl. at ¶ 12.

bidding of the dominant owner's pivotal resources. This would permit the dominant owner to circumvent mitigation for the pivotal units subject to such arrangements.¹⁵ Additionally, a large generation owner could make non-mitigated generation owners pivotal by withholding generation, enabling a non-mitigated generation owner to set prices. This could benefit the mitigated generation owner by enabling it to receive a market price that is higher than its offer cap price.¹⁶ These examples of behavior that could occur, absent mitigation of all market participants, in a structurally non-competitive market illustrate that it would be counter-productive to implement market mitigation rules (i.e., mitigating only dominant suppliers and not the entire market in a structurally non-competitive market) that would create incentives to engage in new forms of non-competitive behavior.¹⁷

Furthermore, PJM's proposal to mitigate the entire market NICA energy market and not just individual participants is consistent with PJM's current Commission-approved mitigation measures for load pockets. When the PJM companies jointly filed for market-based rate authority, they recognized that market power could be exercised in load pockets, and therefore, provided for mitigation of all sellers in load pockets.¹⁸ The PJM local market power mitigation measures approved by the Commission,¹⁹ do not distinguish among generation owners in load pockets. The mitigation remedy is applied

¹⁵ Id.

¹⁶ Id.

¹⁷ Id.

¹⁸ Id. at ¶ 13.

¹⁹ At. City Elec. Co., 86 FERC ¶ 61,248 (1999).

whenever a generation owner in the load pocket has the ability to exercise market power regardless of whether that generation owner is the only generation owner in the load pocket and regardless of its market share. In PJM, load pockets are uniformly characterized by structural market power but, in some instances, can include generation owners that would pass the Market Power Policy Order screens. Nevertheless, such generation owners could be in a position to exercise market power but for the local market power mitigation rules.²⁰ Therefore, they also are mitigated. The same is true for the NICA energy market or any other structurally non-competitive market. Therefore, as the NICA energy market is structurally non-competitive, it is appropriate, as it is for other PJM load pockets, to apply offer capping to all generators in the NICA energy market when there are PJM to NICA constraints.

Moreover, PJM's market power mitigation measures are narrow and focused in application. Indeed, while the energy market in NICA is characterized by market power on a stand-alone basis, the integration with PJM resolves the issue 95 percent of the time.²¹ Targeted mitigation is necessary for only five percent of the hours of the year when the PJM-NICA pathway is constrained from east to west. Moreover, these market mitigation measures only will be necessary for five months until the integration of American Electric Power Company into PJM scheduled for October 1, 2004.²²

²⁰ Bowring Decl. at ¶ 13.

²¹ Id. at ¶ 2.

²² Id.

III. The MMU's Conclusions Regarding Market Power In The NICA Energy Market Based On The Market Power Policy Order Screens Are Valid

A. Wholesale Market Share Screen

As explained in the Market Power Policy Order, the “market share analysis is designed to serve as a screen of whether a supplier has a dominant presence in the wholesale electricity market.”²³ In its April 23, 2004 filing, PJM indicated that the results of a Wholesale Market Share screen demonstrate that two market participants each fail the 20 percent test specified by the Market Power Policy Order for each of the seasons.²⁴

EME Companies assert that the “MMU’s market screen is flawed because it includes a number of generating units owned or controlled by MWGen that are currently in either suspended or decommissioned status.”²⁵ PJM relied on EME Companies’ own notifications to PJM, via PJM’s eDART system, that the units EME Companies now

²³ Market Power Policy Order at P 101.

²⁴ Explanation Of PJM Interconnection, L.L.C. In Response To Order On Market Mitigation Mechanisms Concerning Energy Market Mitigation Issues, Docket No. ER04-539-002 (April 23, 2004), at 6 (“Explanation”).

²⁵ EME Companies Comments at 7. EME Companies also noted that Mr. Bowring included in his calculation some non-MWGen units that were not operational in 2004. EME Comments, Exhibit A: Affidavit of Peter Fox-Penner Re: PJM Market Mitigation In NICA, at ¶ 16 & n.12 (“Fox-Penner Affidavit”). These units were included in Mr. Bowring’s calculations because plant personnel indicated that the unit would reach commercial operation during the summer of 2004. The capacity of these units, however, was not attributed to the EME Companies’ portfolio in Mr. Bowring’s April 23, 2004 declaration and has no significant impact on the results of the analysis. Moreover, excluding these units would increase EME Companies’ market share. Bowring Decl. at ¶ 7.

claim are in a temporary decommissioned state pending retirement, were on planned outages and scheduled to return to service on June 13, 2004.²⁶

For the purposes of this response, however, the MMU revised its analysis using the revised EME Companies unit availability data, taking at face value its current assertions regarding the units.²⁷ The MMU also updated its analysis to account for newly available information regarding a generator's control over certain generating units under a power purchase agreement, not known to the MMU at the time it performed its initial analyses.²⁸ The results of this updated analysis reaffirmed the conclusion that the NICA energy market is characterized by structural market power when the pathway is constrained from east to west.²⁹ Specifically, it showed, as indeed EME Companies itself recognize,³⁰ that a generation owner has a market share greater than 20 percent.³¹ The results further showed that two generation owners failed the 20 percent screen for all seasons when one of the owners retained bidding control over its units subject to power

²⁶ Bowring Decl. at ¶ 6.

²⁷ Id. The MMU also updated its Pivotal Supplier Analysis making the same adjustments to the data as it had for the Wholesale Market Share Analysis. The results of this updated analysis demonstrated that no supplier of energy is pivotal in the NICA energy market. Id. at ¶ 14.

²⁸ Id. at ¶ 8. Specifically, pursuant to the power purchase contracts, under certain circumstances, a certain generator will retain control over the energy market bidding of certain of its units that are subject to the power purchase agreements. The generator appears to exercise this control frequently. Id.

²⁹ Id. at ¶ 10.

³⁰ EME Companies Comments at 11.

³¹ Bowring Decl. at ¶¶ 10, 16.

purchase agreements.³² Thus, based on the MMU's updated Wholesale Market Share Analysis, there is a rebuttable presumption of market power in the energy market.

B. Delivered Price Test

As PJM described in the Explanation, the Market Power Policy Order specifies that the failure of either the Wholesale Market Share Analysis or the Pivotal Supplier Analysis establishes a rebuttable presumption of market power.³³ In such circumstance (as in this case), a Delivered Price Test can be used to rebut or confirm this presumption.³⁴ The MMU's initial Delivered Price Test regarding the NICA energy market confirmed this presumption by indicating violations of the 2500 HHI for every season analyzed.³⁵

For the purpose of this response, the MMU updated its Delivered Price Test in the same manner (described above) that it updated its Wholesale Market Share Analysis and Pivotal Supplier Analysis. The results of this updated Delivered Price Test, which accounted for the revised EME Companies unit availability, indicate that two generation owners fail the 20 percent market share test specified in the Market Power Policy Order for all price sensitivities.³⁶ They further show that that each period violates the HHI test

³² Id. at ¶ 15.

³³ Explanation at 6, Market Power Policy Order at P 105.

³⁴ Explanation at 6; Market Power Policy Order at P 101.

³⁵ Explanation at 7.

³⁶ Bowring Decl. at ¶ 18.

in the NICA energy market for the period analyzed for all price sensitivities, except in the 95th percentile case for summer and winter.³⁷

Contrary to EME Companies, the MMU's Delivered Price Test does not lack the granularity or sensitivity necessary to provide useful information regarding competition in the NICA energy market.³⁸ For example, EME Companies criticize the MMU's use of market prices in its Delivered Price Test analysis.³⁹ The MMU's use of market prices, in fact, was a conservative approach because it used "the full simultaneous tie capability with the competitive external areas."⁴⁰ Specifically, the MMU compared NICA market prices with market prices in surrounding areas. When the external prices were less than five percent greater than the NICA prices, they were considered competitive;⁴¹ therefore, it was assumed that there was always enough competitive capacity in the external regions to fully utilize the tie capability.⁴² Simply put, the MMU's analysis assumed the maximum level of potential external competition.⁴³

EME Companies also challenge the MMU's Delivered Price Test because it "observes only average market prices during the four seasons: Fall, Spring, Summer and

³⁷ Id. The 95th percentile means the price at which 95 percent of the prices are lower and 5 percent of the prices are higher. The Delivered Price Test results for the pivotal supplier test showed that no supplier is pivotal in the NICA energy market. Id.

³⁸ See EME Companies Comments at 8.

³⁹ Id. at 9-10.

⁴⁰ Bowring Decl. at ¶ 26.

⁴¹ Id.

⁴² Id.

⁴³ Id.

Winter.”⁴⁴ In particular, EME Companies’ consultant asserts that the MMU’s Delivered Price Test lacks granularity because it is based on analyzing a single load condition for each season, rather than two or three load conditions (such as Super-peak, Peak, or Off-peak).⁴⁵ This criticism is without merit. As Mr. Bowring explains in his declaration, extending the analysis to off-peak periods is incorrect.⁴⁶ The “relevant time periods for the analysis here are the seasonal peak periods because the MMU analysis of pathway congestion shows that 95 percent of the east to west congested hours fall during peak periods.”⁴⁷ Moreover, “the Delivered Price Test is failed overall if it is failed for any one of the multiple periods defined in the Market Power Policy Order.”⁴⁸

Similarly, Duke incorrectly asserts that the MMU’s analysis treats each step in the supply curve as a separate market.⁴⁹ The MMU’s analysis, in fact, determines the competitiveness of the market structure under a variety of market conditions covering all seasons and a range of price sensitivities.⁵⁰ Indeed, contrary to Duke’s suggestion, all competitors are considered in every case and no competitors are excluded.⁵¹

⁴⁴ EME Comments at 10.

⁴⁵ Fox-Penner Affidavit at ¶ 22.

⁴⁶ Bowring Decl. at ¶ 19.

⁴⁷ Id. at ¶ 20.

⁴⁸ Id. at ¶ 21 Market Power Policy Order at P 111.

⁴⁹ Duke Protest at 7.

⁵⁰ Bowring Decl. at ¶ 27.

⁵¹ Id.

Finally, contrary to EME Companies' assertions, the MMU's Delivered Price Test analysis is based on adequate price sensitivities.⁵² Nevertheless, the MMU updated its Delivered Price Test to include additional price sensitivities. The updated analysis studied prices for the mean, first quartile, third quartile and 95th percentile across all four seasons.⁵³ The results of this updated study for the market share screen show that two generation owners fail the 20 percent test for all price sensitivities.⁵⁴ The results also indicate that the HHI test is violated in the NICA energy market for each period analyzed for all price sensitivities, except the 95th percentile case for summer and winter.⁵⁵

Simply put, the MMU's market analyses (Wholesale Market Share Analysis, and Delivered Price Test) when updated to meet EME Companies' concerns still indicate there is structural market power in the NICA energy market to support PJM's proposal not to exempt from PJM's offer capping rules the PJM-NICA pathway when the pathway is constrained from east to west.⁵⁶

IV. EME Companies' Proposed Alternative Mitigation Measures Are Unworkable

In recognition of the fact that at least "one other party does not pass the market share screen," EME Companies proposes alternative mitigation measures to be imposed

⁵² See EME Companies Comments at 10-11, Fox-Penner Decl. at ¶ 24.

⁵³ Bowring Decl. at ¶ 22. The term quartile means one of four divisions of observations which have been grouped into four equal-sized sets based on their statistical rank. The term quartile is a type of percentile.

⁵⁴ Id.

⁵⁵ Id.

⁵⁶ The actual results of the energy market operation in NICA during May 2004 also support the analyses presented above. Bowring Decl. at ¶ 28.

on NICA generation resources.⁵⁷ EME Companies proposes that PJM impose its offer capping authority over generation resources in NICA only when (i) the pathway is constrained from PJM to NICA and (ii) such constraint exceeds thirty minutes in duration.⁵⁸ EME Companies contends that the 30-minute trigger “recognizes that imports may be available into NICA to relieve the constraints” but that the imports “would not be able to respond for thirty minutes due to PJM’s fifteen minute scheduling increments and NERC’s requirement that tags be submitted at least twenty minutes before the schedule starts.”⁵⁹

As explained by Mr. Bowring in his attached declaration, EME Companies’ proposal is unworkable and flawed for several reasons.

First, EME Companies’ proposal does not include any analysis of the impact of the suggested market mitigation measure on the markets. Indeed, it likely would destabilize the operation of the NICA energy market and would not induce the suggested response.⁶⁰

Second, the EME Companies’ proposal could increase operating reserves payments. Under the EME Companies’ proposal, after the 30-minute lag, units would be offer-capped. However, if another unit could control the constraint more cheaply, the first unit would be replaced resulting in additional operating reserves payments for start

⁵⁷ EME Comments at 11-13.

⁵⁸ Id. at 13.

⁵⁹ Id. at 12-13.

⁶⁰ Bowring Decl. at ¶ 33.

costs and minimum run time costs as units are turned on and off.⁶¹ The potential for such additional payments would increase the incentive to modify unit operating parameters to increase operating reserves payments.⁶²

Third and similarly, the EME Companies' proposal potentially could lead to operational issues, namely artificially increased volatility, unnecessary cycling of generating units and an associated increase in operating reserves.⁶³ For example, if EME Companies' proposal functions as intended, the marginal price-based unit could increase the NICA Locational Marginal Price ("LMP") from \$30 per MWh to \$200 per MWh. Imports then would respond and displace the marginal unit and the LMP would be reduced to \$30 per MWh. The imports subsequently would reverse because the price no longer would be \$200 per MWh but rather \$30 per MWh. The displaced units would have to be redispatched on, and the need for regulation likely would increase. Depending on the relative conditions at the time in PJM MidAtlantic, this change in LMP also could result in reversals of the direction of pathway flow between PJM and NICA. Such rapid changes in prices and tie line flows make the system more difficult to manage.⁶⁴

Fourth, the EME Companies' proposal suggests permitting the selective exercise of market power to attempt to induce imports. This suggestion is both improper and ineffective. Once a constraint occurs, the EME proposal would require PJM to dispatch a unit out of merit order at its higher price-based offer up to the PJM aggregate market

⁶¹ Id. at ¶¶ 37, 38.

⁶² Id. at ¶ 38.

⁶³ Id. at ¶ 39.

⁶⁴ Id.

offer cap of \$1,000 per MWh for 30 minutes. Thus, such a unit could set LMP for all of NICA at the price-based offer for that 30-minute period. The proposed 30-minute lag is designed to permit imports to respond when the prices are higher.⁶⁵ However, as explained below, this intended inducement likely would not be successful.

There is no indication that the intended import response under EME Companies' proposal likely would occur.⁶⁶ NICA was a net exporter in every hour in May 2004, and was a net exporter in virtually every hour in 2003.⁶⁷ When the pathway is constrained from east to west, it indicates that power flows already have reacted to price differentials; thus there is no reason to expect further imports.⁶⁸ Moreover, under the EME Companies' proposal, market price spikes would be short-lived. EME Companies do not explain (nor can PJM) why importers would respond to such brief increases in price.⁶⁹ In short, no evidence exists that permitting the temporary exercise of market power for 30 minutes would have a positive impact on imports rather than simply causing an increase in prices.⁷⁰

Fifth, EME Companies do not explain why their proposal would result in a more competitive or different outcome than PJM's proposal.⁷¹

⁶⁵ Id. at ¶ 32.

⁶⁶ Id. at ¶ 35.

⁶⁷ Id.

⁶⁸ Id. at ¶ 36.

⁶⁹ Id. at ¶ 35.

⁷⁰ Id.

⁷¹ Id. at ¶¶ 34, 36.

V. Request For Privileged Treatment

Pursuant to 18 C.F.R. §388.112, PJM respectfully request privileged treatment of portions of the attached Declaration of Joseph E. Bowring and the attachments thereto. This information is exempt from mandatory public disclosure requirements, as it contains privileged or confidential commercial and financial information of the PJM members. See 5 U.S.C. § 552(b)(2); 18 U.S.C. § 1905, 18 C.F.R. §§ 388.107(d), 388.112; and Operating Agreement § 18.17. Disclosure of the information contained in the declaration and the attachments would reveal privileged or confidential commercial and financial information of PJM members and would cause harm to the competitive positions of PJM members and also is prohibited by the Operating Agreement.⁷²

Pursuant to 18 C.F.R. § 388.112(b)(iv), the person to be contacted regarding this request for privileged treatment is:

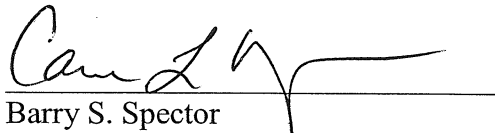
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⁷² Amended and Restated Operating Agreement of PJM Interconnection, L.L.C.

VI. Conclusion

For the reasons stated herein and in the Explanation, the Commission should reject EME Companies' proposed alternative market mitigation proposal for the NICA energy market and accept PJM's proposal not to amend section 6.4 of the PJM market rules to exempt from PJM's offer capping rules the pathway constraint from PJM to NICA.

Respectfully submitted,



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UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.) Docket No. ER04-539-002

DECLARATION OF JOSEPH E. BOWRING

I, Joseph E. Bowring, Manager of the PJM Interconnection, L.L.C. Market Monitoring Unit depose and say as follows:

Introduction

1. In its Order on Market Mitigation Mechanisms¹, the Commission raised questions about the factors considered in the market power analysis proposed by the PJM Market Monitor and directed PJM to explain why an exception should not be added to section 6.4 of Schedule 1 of the PJM Operating Agreement for pathway constraints. On April 23, 2004 (as amended on April 26, 2004) I filed a declaration responding to that order (“April 23 Declaration”), providing an analysis that followed the methods specified in the Market Power Policy Order², which was issued after the Order on Market Mitigation Mechanisms. The methods defined in the Market Power Policy Order address many of the same issues raised in the Order on Market Mitigation Mechanisms and provide a clearly specified method for addressing those issues, including the role of imports, the role of bilateral contracts and the extent of economic competition as measured, for example, by the Delivered Price Test.
2. PJM’s energy market power mitigation proposals are narrow and focused in application. While the energy market in NICA is characterized by market power on a stand alone basis, the integration with PJM resolves that issue for 95 percent of the hours of the year by increasing competitive pressures in NICA. Targeted mitigation is necessary for 5 percent of the hours of the year when the pathway is constrained from east to west, in order to ensure competitive outcomes in the NICA energy market. In addition, these narrowly targeted energy market power mitigation proposals will be in effect for only five months until the integration of American Electric Power Company.
3. As evidence of the targeted nature of the proposed mitigation, offer capping in NICA for a pathway constraint from east to west occurred on just one day in May 2004, for seven hours, affecting one unit per hour and a total of two separate units in NICA, or less than 1.00 percent of the hours and about .01 percent of total MWh for the month.

¹ PJM Interconnection, L.L.C., 106 FERC ¶ 61,277 (2004) (“Order on Market Mitigation Mechanisms.”)

² AEP Power Marketing, Inc. 107 FERC ¶ 61,018 (2004) (“Market Power Policy Order”).

4. In this declaration I respond to the specific comments on PJM's April 23 filing including whether the MMU analysis inappropriately included certain mothballed EME units, whether EME passes the market share screen and whether the Delivered Price Test was applied inappropriately.³
5. PJM applied the market power tests set forth in the Market Power Policy Order including the Pivotal Supplier Analysis Using Uncommitted Capacity (pivotal supplier analysis and associated pivotal supplier screen), the Wholesale Market Share Analysis Using Uncommitted Capacity (market share analysis and associated market share screen) and the Delivered Price Test, including pivotal supplier, market share and market concentration analyses. [Redacted] fails the market share screen and [Redacted] the Delivered Price Test market share test

[Redacted]⁴

In addition, the Delivered Price Test HHI tests show that the overall market structure is not competitive. I provide the Commission with data from the actual operation of the NICA energy market during May 2004 that supports the findings of structural market power in the stand alone NICA energy market. Accordingly, the Commission should not exempt the pathway constraints from section 6.4 of Schedule 1 of the PJM Operating Agreement when the pathway is constrained from east to west. PJM supports an exception when the pathway is constrained from west to east.

Energy Market Issues

6. In its answer to PJM's request for rehearing, EME commented that the market power analysis is flawed because it ascribes to EME several units that have been taken out of service. These units are Collins Unit 4, Collins Unit 5, Will County Unit 1, Will County Unit 2 and the Bloom peaker units. PJM relied on EME's notification to PJM, via PJM's eDART system, that these units were on planned outages and scheduled to return to service on June 13, 2004. Nonetheless, based on the representations of EME in its latest pleading, these units have been removed from all the analyses reported in this declaration. The energy market analysis has been revised to exclude these units. Exclusion of these units does affect the results of the market share screen but does not affect the results of the Delivered Price Test.
7. EME also commented that NRG's Nelson Energy Center units (Nelson) should not be included in the analysis of the NICA market. The units were included in the analysis

³ [Redacted]

⁴ [Redacted]

based on conversations with plant personnel at Nelson who indicated that the unit would reach commercial operation during summer 2004. This commercial operation forecast was also verified through commercial data sources to which PJM subscribes. Energy from the Nelson units was not attributed to the EME portfolio in the April 23 Declaration and has no significant impact on the result of the analysis.⁵ Excluding the Nelson units would increase EME's market share.

8. **[Redacted]**⁶

9. Mr. Fox-Penner, EME's consultant, comments that the operating reserve level used in the PJM analysis is too high. The operating reserves level used in my April 23 Declaration is accurate and was based on the estimates of PJM operations personnel prior to the actual integration date. Since that time, this level of operating reserves has been corroborated by actual PJM operating experience in NICA. Mr. Fox-Penner's estimate of operating reserves is incorrect and appears to be based on the MAIN requirement for spinning reserves only. In any case, the level of operating reserves did not have a significant impact on the result of the analysis, so the point is not material.
10. For purposes of this declaration, and to respond to the comments, I have updated the energy market power analyses in the April 23 Declaration. Based on the results of the updated analyses I have reaffirmed the conclusion that the NICA market is characterized by structural market power when the pathway is constrained from east to west. This updated analysis does not change the conclusions from my prior analysis but does provide the Commission with the most up to date data for its use. The updated analyses (discussed in more detail below) show that no supplier is pivotal in the energy market but that **[Redacted]** has a market share greater than 20 percent. **[Redacted]** the market share screen **[Redacted]**

⁵ The capacity from Nelson is not deliverable so the related capacity does not affect the capacity market analysis.

⁶ The capacity market analysis does not include related sensitivities because the contract does not affect the control or disposition of capacity from these units.

I also updated the Delivered Price Test. The results of the Delivered Price Test show that [Redacted] greater than 20 percent for all of the defined periods examined and that the HHI exceeds 2500 in all of the defined periods examined, including summer, fall, winter and spring peak periods for the full range of the price sensitivities except the 95th percentile case for summer (HHI = 2471) and winter (HHI = 2075). (Table 1.)⁷ The Delivered Price Test, [Redacted]

The Delivered Price Test, [Redacted]

Thus, the Delivered Price Test confirms my prior conclusion that the energy market is not structurally competitive. (Table 5.)

11. PJM has applied the defined tests in an extremely conservative manner, especially with regard to the level of competition from imports. Nonetheless the results show that the NICA energy market exhibits the structural conditions for market power on a stand alone basis. The results are not limited to one or two individual market participants but extend to the entire market. The Delivered Price Test HHIs for example are a measure of a structural problem with the market.
12. Organized markets, like the PJM market, include a variety of interactions among market participants. The mitigation solely of the one or two suppliers that are dominant in a market would incent the exercise of market power via gaming and other behaviors. Mitigation of single market participants could create incentives for large and small participants to cooperate either tacitly or explicitly to exercise market power and could thus create unanticipated consequences for the markets. For example, the application of mitigation only to one or two generation owners in a market would create the incentive for the mitigated generation owner to enter into bilateral arrangements, under which a non-mitigated participant controlled bidding of pivotal resources, to circumvent mitigation. The non-mitigated participant could offer the units in at a non-mitigated price and set the market price. A large generation owner could make non-mitigated generation owners pivotal by withholding generation, enabling the non-mitigated generation owner to set prices through its offers, which would benefit the mitigated generation owner. While these are simple illustrations of behaviors that could occur absent mitigation of all market participants in structurally non-competitive markets, it does not make sense to create incentives to engage in new forms of non-competitive behavior. There are potential negative consequences from the mitigation of single generation owners while there is no asserted harm from the application of the mitigation rules to all participants.
13. Prior to the introduction of market-based pricing in PJM markets, the offers of all participants were cost-based. The Commission did not distinguish among individual generation owners that otherwise had market-based rate authority and those that did

⁷ Tables (Table 1 through Table 5) and Figures (Figure 1) are organized with tabs at the end of the document. Supporting data is in subsequent tabs (Tab 7 through Tab 18).

not have market-based rate authority. Rather, the offers of all market participants were capped until the Commission determined that the PJM markets were structurally competitive. The PJM companies filed jointly in 1997 for market-based rates to create the current, security-constrained, market-based PJM market model. However, the filing by the PJM companies recognized that market power could be exercised in load pockets and therefore provided for mitigation of all sellers in load pockets. The PJM local market power mitigation measures, included in that initial filing and approved by the Commission, do not distinguish among generation owners in load pockets. The behavioral remedy is applied whenever a generation owner has the ability to exercise market power regardless of whether the generation owner is the only owner in the load pocket (a 100 percent market share) or whether the load pocket has one generation owner with a 90 percent share and one with a 10 percent share. In PJM, load pockets are uniformly characterized by structural market power but can, in some instances, include generation owners that would pass the market power tests in the Market Power Policy Order. Such generation owners are, nonetheless, at times in a position to exercise market power but for the local market power mitigation rules.

Pivotal Supplier Analysis

14. For purposes of this declaration, I updated the pivotal supplier analysis with two changes. First, for the reasons given above, I removed EME's referenced Will County, Collins and Bloom units from the analysis. Second, I modified the analysis to take account of revised information, which became available only after the April 23 Declaration,

[Redacted]

The MMU has performed an additional sensitivity analysis, reported below. EME did not account for this change in the underlying facts in their comments in this proceeding.

15. The updated Pivotal Supplier Analysis Using Uncommitted Capacity, including the revised EME unit availability data, shows that no supplier of energy is pivotal in the NICA energy market for the period analyzed [Redacted].

Wholesale Market Share Analysis

16. The Wholesale Market Share Analysis Using Uncommitted Capacity, including the revised EME unit availability data, shows that [Redacted] the 20

percent screen specified in the Market Power Policy Order for all of the seasons
[Redacted] and imports are set equal to 4,700 MW.
(Table 2.)⁸ [Redacted] in the winter season under
the zero import sensitivity. (Table 2.)⁹

17. The Wholesale Market Share Analysis Using Uncommitted Capacity, including the revised EME unit availability data, shows that [Redacted] the 20 percent screen specified in the Market Power Policy Order for all seasons [Redacted]. The significance of this result is that, for the [Redacted] (Table 3.)¹⁰

Delivered Price Test

18. As explained in the April 23 Declaration, the Market Power Policy Order indicates that the Delivered Price Test may be applied by an applicant or interested party as a follow up to the pivotal supplier analysis and the market share analysis. For purposes of this declaration, I updated the Delivered Price Test to account for EME unit availability. The Delivered Price Test results for the pivotal supplier test show that no supplier is pivotal in the NICA energy market for the period analyzed. The Delivered Price Test results for the market share test, revised to account for EME unit availability, [Redacted] the 20 percent test specified in the Market Power Policy Order for all price sensitivities. The Delivered Price Test results for the HHI test show that each period violates the HHI test in the NICA energy market for the period analyzed for all price sensitivities except the 95th percentile case for summer (HHI = 2471) and winter (HHI = 2075). (Table 1.)¹¹
19. In his affidavit in support of EME's comments, Mr. Fox Penner suggests that the time granularity of the Delivered Price Test analysis was not adequate and not consistent with the requirements of the Market Power Policy Order. Mr. Fox-Penner suggested that the analysis should have extended into off peak periods. This is not correct. In any case, the Delivered Price HHI Test is failed overall if it is failed for any one of the multiple periods defined in the Market Power Policy Order.
20. The relevant time periods for the analysis here are the seasonal peak periods because the MMU analysis of pathway congestion shows that 95 percent of the east to west congested hours fall during peak periods. PJM proposes to offer cap units only when the pathway is congested from east to west.
21. Mr. Fox-Penner suggests that the MMU analysis included inadequate price sensitivities.

⁸ Supporting data is at Tab 11.

⁹ Supporting data is at Tab 12.

¹⁰ Supporting data is at Tab 13 and Tab 14.

¹¹ Supporting data is at Tab 7, Tab 8, Tab 9 and Tab 10.

22. In order to provide additional information, I updated the Delivered Price Test to include additional price sensitivities. Prices were analyzed for the mean, first quartile, third quartile and 95th percentile across all four seasons. The Delivered Price Test results for the market share test show that [Redacted] 20 percent test specified in the Market Power Policy Order for all price sensitivities. The Delivered Price Test results for the HHI test show that each period violates the HHI test in the NICA energy market for the period analyzed for all price sensitivities except the 95th percentile case for summer (HHI = 2471) and winter (HHI = 2075).¹² (Table 1.)

23. The Delivered Price Test, [Redacted]

Thus, the Delivered Price Test confirms my prior conclusion that the energy market is not structurally competitive. (Table 5.)¹³

24. Mr. Fox Penner suggests that gas costs may push prices in NICA higher this summer. Mr. Fox-Penner does not suggest however, that gas costs will affect the spreads between NICA prices and external prices. It is the spread that is critical to the Delivered Price Test. Gas-fired units are on the margin about 9 percent of the time in NICA, based on the MMU MAPS analysis. Therefore, gas costs will only impact prices 9 percent of the time.

25. Mr. Fox-Penner suggests that the prices used were not documented. To the contrary, the prices were included as attachments to the April 23 Declaration and the source cited. I have attached a comparable table for this analysis. (Table 4.)

26. Mr. Fox-Penner suggests that it is inappropriate to use market prices as the basis for the Delivered Price Test. The MMU compared NICA market prices with market prices in surrounding areas. When the external prices were less than five percent greater than NICA prices they were considered competitive. This approach was conservative because it uses the full simultaneous tie capability with the competitive external areas. Thus, in effect it was assumed that there was always enough competitive capacity in the external regions to fully utilize the tie capability. It is not physically possible to have more external competition than provided by the full simultaneous capability of the ties. In fact, this methodology provides for the inclusion of greater external competition than proposed by Mr. Fox-Penner. In addition, Mr. Fox-Penner's suggestion that NICA prices be compared to the marginal

¹² The term quartile means one of four divisions of observations which have been grouped into four equal-sized sets based on their statistical rank. The term quartile is a type of percentile. The term percentile defines a cumulative frequency. For example, the 95th percentile means the price at which 95 percent of the prices are lower and 5 percent of the prices are higher.

¹³ Supporting data is at Tab 15, Tab 16, Tab 17 and Tab 18.

costs of units in external areas is not consistent with basic economic logic. Clearly, units will sell into the highest price market available to them. In any event, the MMU analysis has assumed the maximum level of potential external competition.

27. Duke makes a related comment, suggesting that the PJM analysis treats each step in the supply curve as a separate market. That is not correct. The PJM analysis, following the Delivered Price Test, determines the competitiveness of the market structure under a variety of market conditions covering all seasons and a range of price sensitivities. All competitors are considered in every case; no competitors are excluded as Duke suggests. Nonetheless, if the market price is \$30 per MWh then units with costs of \$80 will not be competitive. The Delivered Price Test appropriately reflects this competitive reality.

NICA Market Results for May 2004

28. The actual results of the energy market operation in NICA during May 2004 support the analysis presented above. [Redacted]

The Residual Supplier Index (RSI) which measures whether a generation owner is pivotal [Redacted]

Alternative Mitigation Proposal

29. In its comments, EME proposes an alternative energy market power mitigation approach. EME's efforts to propose a constructive mitigation proposal are appreciated.
30. When the pathway is constrained from east to west, EME's mitigation proposal would have a unit, dispatched out of merit order in NICA to relieve the pathway constraint, set the Locational Marginal Price (LMP) based on the price-based offer of the units. Under the EME proposal, offer capping at cost-based offers would occur after a 30 minute delay, unless imports displaced the need for the out of merit unit.
31. EME's rationale for this approach is contained in one paragraph in its comments. EME "believes that the proposed trigger also recognizes that imports may be available into NICA to relieve constraints on the generation transfer pathway once the

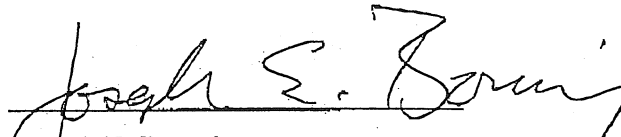
constraint arises.” EME also believes that the 30 minute delay is required in order to let importers acquire NERC tags and ramp reservations.

32. As indicated above, if the pathway is constrained from east to west, it may be necessary to operate a unit in NICA out of economic merit order to provide relief. Current PJM rules, supported in this declaration, require that, to prevent the exercise of market power, if the unit dispatched for relief of congestion is a pre-1996 unit and would be taken out of merit order at its price-based offer, it will be offer capped at its cost-based offer. In contrast, the EME proposal would require PJM to dispatch the unit at its price-based offer up to the PJM aggregate market offer cap of \$1,000 per MWh. The unit could set LMP for all of NICA at the price-based offer for a period of 30 minutes. The EME proposal suggests permitting the selective exercise of market power in order to induce imports. The EME proposed 30 minute lag is designed to permit imports to respond to the higher prices that would result.
33. EME’s proposal does not include any analysis of its likely impacts on the markets. EME does not explain what it expects the actual, market results of its proposal would be. EME's mitigation proposal is not workable in practice, would tend to destabilize the operation of the NICA energy market and will not induce the suggested response.
34. The market structure analysis described above already accounts for the maximum possible import response to prices and still finds that structural market power exists in the stand alone NICA energy market. EME does not explain why its proposal is likely to result in a more competitive outcome, or ultimately even a different outcome, than the PJM proposal.
35. There is no evidence that the proposed import response is likely to exist, regardless of the exact nature of the EME rule. NICA was a net exporter in every hour in May 2004 and was a net exporter in virtually every hour in 2003. If the pathway is constrained from east to west it indicates that power flows have already reacted to price differentials. There is no evidence that permitting the temporary exercise of market power to further increase the price would have any incremental impact on imports rather than simply causing an increase in prices.
36. Under the EME proposal, the market price spike that results would be short lived, whether imports respond or not. EME does not explain why rational importers would be expected to respond to the short-term price signal that would result from the EME proposal. EME does not explain why the outcome, after the market reactions, would be expected to be any different than the outcome of the PJM proposal.
37. Under the EME proposal, after 30 minutes, mitigation would be reimposed to reduce the unit's offer to a cost-based offer if imports did not displace the unit. Thus, if imports do not displace the price-based unit, the dispatched unit would be offer capped at its cost-based offer. However, if there were another unit that could control the constraint with a cheaper cost-based offer, least cost dispatch would require the dispatch of that unit with the result that the initial unit would be dispatched off.

38. As a result, the EME proposal would result in additional operating reserve payments for start costs and minimum run time costs as units are turned on and turned off. The potential for such payments would also increase the incentive to modify unit operating parameters to take advantage of the new rule and increase operating reserve payments.
39. As another result, the EME mitigation proposal introduces the potential for artificially increased volatility, unnecessary cycling on and off of generating units and an associated increase in operating reserves. If the proposal works as intended, the result will be price spikes and rapid changes in tie flows. These will occur despite the fact that the end state will not be affected by the process. For example, if the process works as intended, the marginal price-based unit results in the NICA LMP increasing from \$30 per MWh to \$200 per MWh, imports respond and displace the unit and the LMP is reduced to \$30 per MWh. If the process works as intended, imports may also displace additional units in the short run. Note that imports in real time cannot set the price unless they have an offer submitted in the day ahead market. Almost all real time imports in PJM are price takers. The next step in the process is that the imports will terminate because the price is no longer \$200 per MWh. The displaced units have to be redispatched on and the need for regulation is likely to increase. Depending on the relative conditions at the time in PJM MidAtlantic, this change in LMP could also result in artificial reversals of the direction of pathway flow between PJM and NICA. Such rapid changes in prices and tie line flows make the system more difficult to manage.
40. The purpose of retaining PJM's authority to offer cap under specific, identified conditions is to mitigate market power where the market structure is not competitive. If the pathway becomes constrained from east to west as a result of higher prices in NICA than in PJM MidAtlantic, the PJM rules provide that the next unit in merit order in NICA would be dispatched at the higher of the current market price or its cost-based offer. The rules would not result in depressing the price below the current market price. In contrast to the EME proposal, the current PJM rules permit the orderly operation of the market and prevent the exercise of market power.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 18th day of June 2004.



Joseph E. Bowring

**Tabs 1 – 18 Contain privileged
information that was redacted.**

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C., this 18th day of June, 2004.



Carrie L. Bumgarner