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July 16, 2004

Honorable Magalie Roman Salas
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, D.C. 20426

Re: PJM Interconnection, L.L.C., Docket No. EL03-236-000
(Compliance Filing)

Dear Ms. Salas:

Enclosed for filing are revised sheets of the PJM Open Access Transmission Tariff ("PJM Tariff") and the Amended and Restated Operating Agreement of PJM Interconnection, L.L.C ("Operating Agreement") to comply with the Commission's order in PJM Interconnection, L.L.C., 107 FERC ¶ 61,112 (2004) ("May 6 Order").

**Description of Filing**

**Background**

On September 30, 2003, PJM filed amended PJM Tariff and Operating Agreement sheets to revise the offer price cap rules for must-run generating units, and to establish a Local Market Auction to address long term scarcity that would produce unreliable operations in load pockets should such a condition arise in PJM.

As part of that filing, PJM proposed to add a new provision to the PJM market rules (section 6.4.1(e)) to allow suspension of offer caps when competitive conditions exist in a load pocket. The proposed provision defined competitive conditions to exist generally when there were not three or fewer jointly pivotal suppliers, but also allowed the PJM market monitor to determine independently whether or not competitive conditions exist so as to warrant suspension of offer capping. With regard to this proposal, the Commission stated that "it is important that the mitigation measures be designed to be in effect only when there is an actual opportunity to exercise market power."[1] It further held, however, that "while the Commission agrees with the underlying rationale for this measure, we are concerned that as structured it relies on discretion rather than clearly defined triggers."[2] Therefore, it accepted PJM's proposal, but with modifications. Specifically, the Commission directed PJM to submit a compliance filing that would "(a) provide additional justification of PJM's proposed jointly pivotal competitiveness standard, and (b) revise the proposed tariff language to include clear procedures establishing when PJM will apply the standard."[3]

**Compliance Amendments**

To address the Commission's concerns, PJM proposes the following revised section 6.4.1(e):

> (e) Offer price caps shall be suspended for any transmission limit(s) for any hour in which there are not three or fewer generation suppliers available for redispatch under subsection (a) that are jointly pivotal with respect to such transmission limit(s). Notwithstanding the number of jointly pivotal suppliers in any

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1 May 6 Order at P 47.

2 Id. at P 48.

3 Id. On July 1, 2004, PJM filed a motion for a limited ten-day extension of time until July 16, 2004 to make this compliance filing. The Commission granted PJM's motion on July 2, 2004. PJM Interconnection, L.L.C., Notice of Extension of Time, Docket No. EL03-236-000 (July 2, 2004).

> hour, if the Market Monitoring Unit determines that a reasonable level of competition will not exist based on an evaluation of all facts and circumstances, it may propose to the Commission the removal of offer-capping suspensions otherwise authorized by this section. Such proposals shall take effect only upon Commission acceptance or approval.

**Elimination of Discretion**

The compliance amendments retain the no-three pivotal suppliers test (e.g., four or more jointly pivotal suppliers are considered competitive as are zero pivotal suppliers) for market competitiveness, which is further justified below and in the attached declaration of the PJM market monitor.[4] The revised provision establishes this standard as a clearly stated trigger for suspension of offer caps. The provision also now indicates that this test for competitiveness and suspension of offer caps will be applied whenever the offer capping rule otherwise would be applied.[5] In addition, under the revised provision, as required by the Commission, the MMU will not have discretion to impose offer capping in load pockets that pass the no-three pivotal suppliers test. The MMU, however, will have the ability to propose the re-imposition of offer capping to the

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4 See Declaration of Joseph E. Bowring attached hereto as Exhibit A ("Bowring Declaration").

5 Bowring Declaration at P 6. Implementation of this revised proposal will require significant changes to the PJM operational dispatch software that could take up to 12 months. As PJM does not implement new software in the summer peak season, the target for implementation would be in September 2005. This implementation plan will not delay the appropriate suspension of offer capping, as the PJM Market Monitoring Unit ("MMU") has not identified any existing circumstances where the current ownership of units is diverse enough to satisfy the proposed no-three pivotal suppliers test. Id.

Commission if it determines that a reasonable level of competition will not exist in a load pocket. However, offer capping could be re-imposed only by the Commission.[6]

The use of the no-three pivotal suppliers test for competitiveness of a load pocket establishes a clear trigger, as required by the order. It strikes the appropriate balance between limiting market power and limiting intervention in markets where competitive forces are adequate.

However, the test is not a guarantee of competitiveness in load pockets.[7] As Mr. Bowring explains in his attached declaration, the "no-three pivotal suppliers test is a structural test that is not a perfect predictor of actual behavior."[8] Therefore, PJM's proposed compliance amendments include the ability of the MMU to request that the Commission impose offer caps in the event that a load pocket is not competitive notwithstanding the no-three pivotal suppliers test.[9] This proposal complies with the May 6 Order in that such reinstatement of offer capping must be approved by the Commission, thus removing the discretionary element of PJM's initial proposal.

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6 Id. at P 5. Certain other clarifications also are made to section 6.4.1(e), such as the use of the term "transmission limits" instead of "locality" to be consistent with other portions of the offer capping rules in section 6.4, and specifying that the no-three pivotal suppliers test refers to generation suppliers that are available for redispatch.

7 Id. at P 7.

8 Id.

9 Id. at PP 5, 7.

**Justification for the No-Three Pivotal Suppliers Test**

As Mr. Bowring explains in his declaration, a test for local market power based on the number of pivotal suppliers is economically sound and unambiguous to apply in practice.[10] In contrast, reliance on HHI[11] tests and market share tests is not sufficient because such tests "generally are not adequately refined to measure structural market power with the required precision in defined load pockets, in real time."[12]

As Mr. Bowring explains in more detail in his declaration, the specific use of the no-three pivotal suppliers test "strikes a reasonable balance between the requirement to limit extreme structural market power and the goal of limiting intervention in markets where competitive forces are adequate."[13] Using a test based on fewer suppliers would not provide this balance. A no-one pivotal supplier test would protect against only extreme market power conditions and therefore would not be considered adequate.[14] Likewise, a no-two pivotal suppliers test would be inadequate because "the exercise of substantial market power in a load pocket can result if a no-two pivotal suppliers rule

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10 Id. at P 8.

11 "HHI" refers to the Herfindahl-Hirschman Index.

12 Bowring Declaration at P 9.

13 Id. at P 8.

14 See id. at PP 15, 18, 19, 20.

were in effect."[15] In short, the no-three pivotal suppliers test is chosen "as the minimum acceptable structural test for local market power in load pockets in PJM."[16]

**Effective Date**

Consistent with the date initially requested by PJM for the amendments filed in this docket, PJM requests an effective date of June 1, 2004 for the revised PJM Tariff and Operating Agreement sheets filed herein to comply with the May 6 Order and designates such sheets with an effective date of June 1, 2004.[17]

**Documents Enclosed**

PJM encloses the original and seven copies of the following:

1. Transmittal letter.
2. Exhibit A: Declaration of Joseph E. Bowring
3. Exhibit B: Revised sheets of the PJM Tariff and Operating Agreement and redlined versions of same.[18]

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15 Id. at P 18; see also P 20.

16 Id.

17 Currently there are no load pockets where offer caps would be suspended under the test. Bowring Declaration at P 6. As noted in the Bowring Declaration, incorporation of the revised offer capping proposal into PJM's operational dispatch software may take up to 12 months. Id. If, however, before such incorporation is complete and implemented, conditions arise where the no-three pivotal suppliers test is met, PJM will develop interim manual means for suspending offer capping pursuant to section 6.4.1(e) where appropriate.

18 For clarity, PJM also includes in this filing a Substitute Original Sheet No. 402A of the PJM Tariff and revised Tables of Contents for both the PJM Tariff and Operating Agreement. In the May 6 Order, the Commission specifically rejected Original Sheet Nos. 402A and 402B because they contained language regarding the local market auction proposal that the Commission did not accept. May 6 Order, Ordering para. (E). These sheets, however, also contained language previously accepted by the Commission in other dockets. The language

4. Exhibit C: A form of Federal Register notice (also enclosed on diskette.)

**Service and Federal Register Notice**

PJM has served a copy of this filing upon all parties listed on the official service list compiled by the Secretary in this proceeding. A form of notice suitable for publication in the Federal Register is attached and is enclosed on diskette.

Respectfully submitted,

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previously accepted by the Commission initially was on Original Sheet No. 402 of the PJM Tariff but was moved to Original Sheet Nos. 402A and 402B to accommodate the addition of section 6.4.1(e). Original Sheet No. 402A also contained identical revisions to section 6.4.1(a) of the PJM market rules that the Commission accepted in this docket when it accepted Original Sheet No. 131A of the Operating Agreement. Id. at Ordering para. (C). Therefore, PJM files Substitute Original Sheet No. 402A which contains the language previously accepted by the Commission in other dockets that appeared on rejected Original Sheet Nos. 402A and 402B of the PJM Tariff and the identical revisions to section 6.4.1(a) that the Commission accepted by accepting Original Sheet No. 131A of the Operating Agreement in this docket. For consistency, PJM requests an effective date of June 1, 2004 for Substitute Original Sheet No. 402A. PJM also notes that the Commission accepted First Revised Sheet No. 131 of the Operating Agreement but was silent with regard to First Revised Sheet No. 401 of the PJM Tariff. See May 6 Order, Ordering para. (C). These two sheets contain identical changes to section 6.4.2 of the market rules. Accordingly, PJM requests clarification that the Commission also intended to accept First Revised Sheet No. 401 of the PJM Tariff.

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July 16, 2004

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# Exhibit A

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

**PJM Interconnection, L.L.C.** ) **Docket No. EL03-236-000**

## 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:

1. The Federal Energy Regulatory Commission's ("Commission") order of May 6, 2004 in Docket No. EL03-236-000[1] required, among other things, that PJM Interconnection, L.L.C. ("PJM") make a compliance filing that would: "(a) provide additional justification of PJM's proposed jointly pivotal competitiveness standard, and (b) revise the proposed tariff language to include clear procedures establishing when PJM will apply the standard."[2]

2. Under the existing rules, PJM offer caps any pre-1996 unit that runs to control a transmission constraint, without an explicit test for whether the owners of the local units have the ability to exercise market power.[3] The absence of such an explicit test has little current significance as a result of the actual ownership pattern of PJM units. In other words, there are no cases that the PJM Interconnection, L.L.C. Market Monitoring Unit ("MMU") has identified where the actual ownership of units is diverse enough to eliminate concerns about the exercise of local market power. Generally, there are only one or two suppliers that own the generation required to solve the relevant constraints in PJM. Nonetheless, PJM proposed an explicit, ongoing test for local market power because the existence of such an explicit test in the PJM Open Access Transmission Tariff and the Amended and Restated Operating Agreement of PJM Interconnection, L.L.C. could inform decisions about divestiture by an owner of multiple units within a load pocket, about the purchase of existing units within a load pocket or about the construction of a new unit in a load pocket. Increased ownership diversity could then lead to suspension of offer capping under the proposed rule.

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1 PJM Interconnection, L.L.C., 107 FERC ¶ 61, 112 (2004) ("May 6 Order").

2 Id. at P 48.

3 The only exception is that PJM does not mitigate units that are required to relieve the Western, Central and Eastern reactive interface limits, based on an analysis of market structure that was part of the PJM filing for market based rates in 1997. This is discussed in more detail below.

3. As filed, the PJM proposal would have implemented a test for the number of jointly pivotal suppliers in a load pocket and created a mechanism to suspend offer capping, if adequate competition were deemed to exist. The initial filing provided that if no-three suppliers are jointly pivotal, the automatic application of local market power mitigation could be suspended, subject to MMU analysis. Under the initial filing, MMU analysis would be required to verify that structural conditions are consistent with competition prior to the suspension of offer capping and ongoing MMU analysis would be conducted to verify that bidding behavior is competitive and that it continued to be appropriate to suspend offer capping.

4. In response to PJM's initial filing, the Commission stated that "the Commission accepts PJM's proposal, with modifications."[4] The Commission further stated that, "while the Commission agrees with the underlying rationale for this measure, we are concerned that as structured it relies on discretion rather than clearly defined triggers."[5] The Commission found that "the proposed suspension of mitigation accords the market monitor excessive discretion in determining the degree of competitiveness."[6] Consequently, the Commission directed PJM to submit a compliance filing which would "(a) provide additional justification of PJM's proposed jointly pivotal competitiveness standard, and (b) revise the proposed tariff language to include clear procedures establishing when PJM will apply the standard."[7]

5. In response to the Commission's May 6 Order, PJM supports below the choice of a clearly defined trigger that suspends offer capping in a load pocket whenever it is determined that no group of three or fewer generation owners are jointly pivotal (see compliance amendments attached as Exhibit B to PJM Transmittal Letter). In other words, offer capping in a load pocket will continue to be applied when and only when there are three or fewer jointly pivotal suppliers available for redispatch to address a transmission constraint. To address the Commission's concerns about excessive MMU discretion, PJM modifies the proposal to state that, if the MMU determines that a reasonable level of competition does not, or will not, exist based on an evaluation of all facts and circumstances, the MMU may propose to the Commission that offer capping be reinstated, even if the above test is passed. Any reinstatement of offer capping would require Commission acceptance or approval.

6. PJM proposes to apply the test whenever the offer capping rule would otherwise be applied. This dynamic application will permit the relaxation of offer capping more frequently, while ensuring that offer capping is in place when there is a potential to exercise market power. This is consistent with the way in which the offer cap is

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4 May 6 Order at P 47.

5 Id. at P 48.

6 Id.

7 Id.

currently applied.[8] PJM will incorporate this test in its operational dispatch software. Full implementation of this proposal will require significant modifications to PJM software which can be accomplished within approximately 12 months and given PJM's practice of not implementing new software during the summer peak season, this would mean that the target date would be in September 2005. As noted above, this implementation plan will not delay the appropriate suspension of offer capping because the MMU has not identified any existing circumstances where the current ownership of units is diverse enough to satisfy the proposed test. The purpose of implementing this modified rule is to inform forward-looking decisions regarding generation divestiture, purchases and construction and to apply the tests and suspend offer capping when such actions result in sufficient competition to warrant suspension.

7. PJM proposes to suspend offer capping when structural market conditions indicate that suppliers are reasonably likely to behave in a competitive manner. The goal is to continue to limit the exercise of market power by generation owners in load pockets but to lift offer capping when the exercise of market power is unlikely. Nonetheless, the no-three pivotal suppliers test proposed by PJM is not a guarantee that suppliers will behave in a competitive manner in load pockets. The no-three pivotal suppliers test is a structural test that is not a perfect predictor of actual behavior. The existence of this risk is the reason that the tariff language also includes the ability of the MMU to request that the Commission reinstate offer caps in cases where there is not a competitive outcome.

8. A test for local market power based on the number of pivotal suppliers has a solid basis in economics and is clear and unambiguous to apply in practice. There is no perfect test, but the no-three pivotal suppliers test for local market power strikes a reasonable balance between the requirement to limit extreme structural market power and the goal of limiting intervention in markets where competitive forces are adequate.

9. Strict reliance on HHI[9] and other market share tests does not provide an adequate test for local market power. HHI tests and market share tests generally are not adequately refined to measure structural market power with the required precision in defined load pockets, in real time. For example, consider a load pocket with three generation owners, with 200 MW, 100 MW and 100 MW of capacity respectively, a transmission import capability of 500 MW and a peak load of 750 MW. Treating the import capability as five equally sized generation owners, the market shares of the internal generation owners are 22 percent, 11 percent and 11 percent, respectively.[10]

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8 See PJM Interconnection, L.L.C., 96 FERC ¶ 61,233 (2001).

9 "HHI" refers to the Herfindahl-Hirschman Index.

10 The assumption that the transmission import capability is equivalent to five equally sized generation owners in the market is equivalent to assuming a competitive source of supply using the transmission line into the load pocket. The overall HHIs are reduced only slightly when the number is doubled to 10 or increased further.

The overall HHI, taking account of imports, is 1358. The market is competitive under many standard views of these measures and the load pocket is, in fact, part of the larger competitive market until the transmission line becomes constrained. The existence of the constraint defines a new local market including only the generating units that are not operating and that can resolve the constraint. Thus, when the transmission line into the load pocket is constrained and the load level in the pocket is 750 MW, or 250 MW in excess of the transmission import capability, a single supplier is pivotal and has the ability to set the market price much higher than the competitive level, constrained only by the $1,000 offer cap in PJM.[11]

10. The following is another example of the fact that HHI tests and market share tests generally are not adequately refined to measure structural market power with the required precision in defined load pockets, in real time. Consider a load pocket with four generation owners, each with 100 MW of capacity, a transmission import capability of 500 MW and a peak load of 810 MW. Treating the import capability as five equally sized generation owners, the market shares of the internal generation owners are each 11 percent. The overall HHI, taking account of imports, is 1111. The market is competitive under many standard views of these measures and the load pocket is, in fact, part of the larger competitive market until the transmission line becomes constrained. The existence of the constraint defines a new local market including only the generating units that are not operating and that can resolve the constraint. Thus, when the transmission line into the load pocket is constrained and the load level in the pocket is 810 MW, or 310 MW in excess of the transmission import capability, each of the suppliers is individually pivotal and has the ability to set the market price much higher than the competitive level, constrained only by the $1,000 offer cap in PJM, notwithstanding the fact that the HHI tests are passed.[12]

11. In the examples presented in this declaration, there is always more than enough generation in the load pocket to meet the load. This is consistent with PJM's experience in load pockets. Thus, for the no-one pivotal supplier case, discussed below, while the output of a single owner's units are required to meet load, there is no issue of supply adequacy. The same is true for the no-two pivotal suppliers test and the no-three pivotal suppliers test. The issue is not one of scarcity, but rather market structure and the lack of competition within a load pocket.

12. A single generation owner is pivotal for a load pocket when the output of that owner's units is required to meet load in the load pocket. In other words, load in the

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11 The HHI for the load pocket alone, when the transmission line is constrained, is 3750. This is the equivalent of the HHI calculation under the delivered price test. This is also the measure of capacity available to resolve the constraint, although the actual market shares, based on MWh sold, may result in a higher HHI. See AEP Power Mktg., Inc., 107 FERC ¶ 61,018 (2004).

12 The HHI for the load pocket alone, when the transmission line is constrained, is 2500, which ordinarily would be permissible under the Commission's delivered price test. This HHI is based on the capacity available to resolve the constraint, although the actual market shares, based on MWh sold, may result in a higher HHI. See AEP Power Mktg., Inc., 107 FERC ¶ 61,018 (2004).

load pocket cannot be met without the output of that owner's units; there would be blackouts without the output of that owner's units. In the simple case where there is only one generation owner in the load pocket, that owner is always pivotal because the output of that generator's units is always required to meet load. There also can be one pivotal supplier when there is more than one supplier in the load pocket. Consider the case with two generation owners, owner A with 50 MW and owner B with 10 MW and a total load pocket load of 40 MW. In this case owner B is not pivotal because total load pocket load can be met without owner B's generation, while owner A is pivotal because the load cannot be met without owner A's generation.

13. Two generation owners are jointly pivotal for a load pocket when the output of one or both owners' units is required to meet load in the load pocket. In the simple case where there are only two generation owners, the owners are jointly pivotal because the output of one or both owners' units is always required to meet load in the load pocket. If there are five generation owners in the load pocket, each with 100 MW and load pocket load is 350 MW, then any two generation owners are jointly pivotal because load cannot be met without their output. In this example, no single generation owner is pivotal because the total load can be served without the output of any single owner.

14. Three generation owners are jointly pivotal for a load pocket when the output of one, two or all three owners' units is required to meet load in the load pocket. In the simple case where there are only three generation owners, the owners are jointly pivotal because the output of one, two or all three owners' units is always required to meet load in the load pocket. If there are five generation owners, each with 100 MW and load pocket load is 250 MW, then any three generation owners are jointly pivotal because load cannot be met without their output. In this example, no single generation owner is pivotal because the total load can be served without the output of any single owner. In this example, no two generation owners are jointly pivotal because the total load can be served without the output of any two owners, together.

15. When there is one pivotal supplier in a load pocket, it has the ability to unilaterally increase the price to the offer cap of $1,000 in PJM. In other words, market forces do not limit the level at which a pivotal supplier can set the market price in the load pocket. This situation is actually more extreme than even the monopolist case addressed in economics textbooks. It is more extreme because in power markets, the demand curve is effectively vertical (extremely inelastic) at a significantly positive load level and thus a pivotal supplier has the ability to increase the market price without limit by market forces. In the standard monopoly case, demand is elastic and therefore market forces limit the level at which price can be set.[13] A rule against only a single pivotal supplier would protect only against extreme situations and accordingly is not an appropriate test for suspending offer capping. Therefore competitive conditions with more than one pivotal supplier must be considered.

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[13] In the textbook treatment of monopoly, the price can be raised without limit only at a zero demand level.

16. Substantial market power also may reasonably be expected in the case where there are multiple suppliers in the load pocket but no-two suppliers are jointly pivotal (i.e. three or more suppliers are jointly pivotal). For example, no-two suppliers are jointly pivotal in the case where there are three suppliers, each with 1,000 MW of capacity, and load in the load pocket is 1,000 MW. Yet, the HHI in such a market is 3333. With different relative sizes for the three suppliers, the HHI can range from 3333 to 10000. If one supplier serves all load, the HHI is 10000, while the HHI is 3333 if each supplier serves one third of the load. HHIs in this range are generally considered inconsistent with a competitive market, even with relatively elastic demand. The reason is that economists recognize that unilateral Cournot strategies become more profitable as the HHI increases, for a given elasticity of demand, and that the probability of various forms of profitable parallel behavior also increases as the HHI increases, for a given elasticity of demand. Economists also recognize that unilateral Cournot strategies become more profitable, for a given HHI, as the elasticity of demand decreases. The same conclusion applies to the probability of various forms of profitable parallel behavior. With the inelastic demand actually experienced in power markets, the potential market power associated with any particular HHI level is increased significantly. A rule that suspended offer caps in a load pocket when no-two suppliers were pivotal would be equivalent, in this example, to using an HHI threshold of 3333, or higher, as the determinant of competitiveness. In this case, suppliers would pass the no-two pivotal suppliers test but would still have the ability to increase prices substantially above the competitive level. In this case, three suppliers are jointly pivotal.

17. Cournot theory, the most widely used model of market power when there is more than one supplier, makes very explicit predictions. Cournot theory predicts that suppliers will raise price (above the competitive level) to the point where the Lerner (mark up) index equals the HHI divided by 10,000, divided by the demand elasticity. For a normal market, with a demand elasticity of 100%, this would mean that for the smallest possible HHI in the above example (3333), suppliers would raise the price until the mark up equals 1/3. This means $(P - MC)/P = 1/3$, which also means that the expected Cournot price is 50 percent greater than the competitive price $(P - MC)/MC = .50$).[14] This structural market power issue exists for the lowest HHI in a market with three suppliers and for a market with much more elastic demand than a typical power market. The expected mark up over the competitive price would be 100 percent if elasticity were 50 percent rather than 100 percent.[15] In fact, PJM's energy market exhibits demand elasticity much lower than 50 percent, and so the Cournot analysis predicts that the expected results in PJM load pockets with a no-two pivotal suppliers rule would be much worse than prices 50 percent above the competitive level. Thus, a

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14 In PJM, actual experienced mark ups over the competitive price have ranged from two to twelve percent. (See State of the Market Report 2003, available on the PJM website at http://www.pjm.com/markets/market-monitor/som.html)

15 $(P\text{-}MC)/P = .67$ and $(P\text{-}MC)/MC = 2.0$. Actual elasticities are likely to be substantially lower than 50 percent.

no-two pivotal suppliers rule would not protect against this still relatively extreme potential exercise of market power.

18. As discussed above, the no-one pivotal supplier case in a load pocket is an extreme case of market power and a rule designed solely to address this case cannot reasonably serve as the threshold for competitive behavior in load pockets. As also shown above, the exercise of substantial market power in a load pocket can result if a no-two pivotal suppliers rule were in effect. As a result, the no-three pivotal suppliers test is chosen as the minimum acceptable structural test for local market power in load pockets in PJM. The no-three pivotal suppliers test results in improved structural market power conditions, reduces the expected mark up under Cournot competition and makes parallel behavior more difficult. Application of the no-three pivotal suppliers test is not a guarantee of a competitive outcome but it is considered adequate in this context. Application of the no-three pivotal suppliers test represents a balance between the goal of limiting extreme structural market power and the goal of limiting intervention in markets where competitive forces are adequate.

19. To reiterate the logic presented above:

   a. The no-one pivotal supplier test (e.g., two jointly pivotal suppliers are considered competitive) is not adequate because it rules out only the extreme case of structural market power in power markets with inelastic demand.

   b. The no-two pivotal suppliers test (e.g., three jointly pivotal suppliers are considered competitive) is not adequate because it results in significant structural market power conditions including those measured by HHI, can result in significant mark ups under Cournot competition, and can result in situations under which various forms of parallel behavior can result in prices significantly greater than the competitive level.

   c. The no-three pivotal suppliers test, the next possibility, is considered adequate because it results in improved structural market power conditions, reduces the chance of high HHIs and makes parallel behavior more difficult. While this test is not a guarantee of a competitive outcome, it is considered adequate provided that the MMU is able to present, for Commission acceptance or approval, requests to reinstate offer capping prospectively based on actual market behaviors and outcomes, if necessary.

20. Therefore, based on considerations derived from economic theory and the analysis of actual PJM markets, a structural test for local market power based on the no-three pivotal suppliers test (i.e. four or more jointly pivotal suppliers are considered competitive) rather than the no-one or no-two pivotal suppliers test is justified. This choice of the number of pivotal suppliers addresses the tradeoff between the risk of the exercise of market power versus the risk that the rule restricts competitive behavior. For the reasons discussed above, I conclude that the structural, no-three pivotal suppliers test is the minimum reasonable test consistent with an expectation of

competitive behavior in a load pocket. As discussed above, the no-one pivotal supplier case in a load pocket is an extreme case of market power and a rule designed solely to address this case cannot reasonably serve as the threshold for competitive behavior in load pockets. As also shown above, the exercise of substantial market power in a load pocket can result if a no-two pivotal suppliers rule were in effect. As a result, the no-three pivotal suppliers test is chosen as the minimum acceptable structural test for local market power in load pockets in PJM.

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

Executed this 16th day of July 2004.

Joseph E. Bowring

Joseph E. Bowring

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# Exhibit B

# Tariff Revisions

## Non-Redline Version

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(b) The energy offer price any generation resource requested to be dispatched in accordance with Section 6.3 of this Schedule shall be capped at the levels specified below. If the Office of the Interconnection is able to do so, such offer prices shall be capped only during each hour when the affected resource is so scheduled, and otherwise shall be capped for the entire Operating Day. The energy offer prices as capped shall be used to determine any Locational Marginal Price affected by the price of such resource.

(c) Generation resources subject to an offer price cap shall be paid for energy at the applicable Locational Marginal Price.

(d) Offer price caps shall not be applicable to generation resources used to relieve the Western, Central and Eastern reactive limits in the PJM Control Area. In addition, offer price caps shall not be applicable to generation resources used to relieve any other transmission limit as to which the FERC has determined that offer price caps shall not be applicable.

(e) Offer price caps shall be suspended for any transmission limit(s) for any hour in which there are not three or fewer generation suppliers available for redispatch under subsection (a) that are jointly pivotal with respect to such transmission limit(s). Notwithstanding the number of jointly pivotal suppliers in any hour, if the Market Monitoring Unit determines that a reasonable level of competition will not exist based on an evaluation of all facts and circumstances, it may propose to the Commission the removal of offer-capping suspensions otherwise authorized by this section. Such proposals shall take effect only upon Commission acceptance or approval.

**6.4.2 Level.**

The offer price cap shall be one of the amounts specified below, as specified in advance by the Market Seller for the affected unit:

(i) The weighted average Locational Marginal Price at the generation bus at which energy from the capped resource was delivered during a specified number of hours during which the resource was dispatched for energy in economic merit order, the specified number of hours to be determined by the Office of the Interconnection and to be a number of hours sufficient to result in an offer price cap that reflects reasonably contemporaneous competitive market conditions for that unit;

(ii) The incremental operating cost of the generation resource as determined in accordance with Schedule 2 of this Agreement and the PJM Manuals, plus 10% of such costs; or

(iii) An amount determined by agreement between the Office of the Interconnection and the Market Seller.

## 7. FINANCIAL TRANSMISSION RIGHTS AUCTIONS

### 7.1 Auctions of Financial Transmission Rights.

Annual and periodic auctions to allow Market Participants to acquire or sell Financial Transmission Rights shall be conducted by the Office of the Interconnection in accordance with the provisions of this Section.

**Tariff Revisions**

**Redline Version**

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(b) The energy offer price any generation resource requested to be dispatched in accordance with Section 6.3 of this Schedule shall be capped at the levels specified below. If the Office of the Interconnection is able to do so, such offer prices shall be capped only during each hour when the affected resource is so scheduled, and otherwise shall be capped for the entire Operating Day. The energy offer prices as capped shall be used to determine any Locational Marginal Price affected by the price of such resource.

(c) Generation resources subject to an offer price cap shall be paid for energy at the applicable Locational Marginal Price.

(d) Offer price caps shall not be applicable to generation resources used to relieve the Western, Central and Eastern reactive limits in the PJM Control Area. In addition, offer price caps shall not be applicable to generation resources used to relieve any other transmission limit as to which the FERC has determined that offer price caps shall not be applicable.

(e) Offer price caps ~~may~~ shall be suspended for any transmission limit(s) for any hour in which there are not ~~in a locality when the Market Monitoring Unit determines that the generation supply in such locality is sufficiently competitive. Generally, the generation supply in a locality shall be deemed not sufficiently competitive to warrant suspending offer price caps when~~ three or fewer generation suppliers available for redispatch under subsection (a) that are jointly pivotal with respect to such transmission limit(s). ~~because all are required to serve the load in the locality. However, n~~Notwithstanding the number of jointly pivotal suppliers in ~~a locality~~any hour, if the Market Monitoring Unit ~~may~~ determines that a reasonable level of competition ~~does or does~~ will not exist based on an evaluation of all facts and circumstances, it may propose to the Commission the removal of offer-capping suspensions otherwise authorized by this section. Such proposals shall take effect only upon Commission acceptance or approval. ~~The Market Monitoring Unit shall monitor the Transmission System to determine whether localities are sufficiently competitive to qualify for suspension of offer price caps. In the event the Market Monitoring Unit determines that a locality has become sufficiently competitive to warrant suspension of offer price caps, it shall post a notice on the PJM Internet site that offer price caps shall be suspended as of the date specified in the notice. In the event the Market Monitoring Unit determines that a locality in which offer price caps are suspended is no longer sufficiently competitive to warrant continued suspension of offer price caps, the Market Monitoring Unit shall remove such suspension by providing notice on the PJM Internet site, which notice shall include the date the offer price caps shall be reinstated.~~

Issued By: Craig Glazer
Vice President, Government Policy
Effective: June 1, 2004
Issued On: July 16, 2004
Filed to comply with order of the Federal Energy Regulatory Commission, Docket No. EL03-236-000, issued May 6, 2004, 107 FERC ¶ 61,112.

**6.4.2 Level.**

The offer price cap shall be one of the amounts specified below, as specified in advance by the Market Seller for the affected unit:

(i) The weighted average Locational Marginal Price at the generation bus at which energy from the capped resource was delivered during a specified number of hours during which the resource was dispatched for energy in economic merit order, the specified number of hours to be determined by the Office of the Interconnection and to be a number of hours sufficient to result in an offer price cap that reflects reasonably contemporaneous competitive market conditions for that unit;

(ii) The incremental operating cost of the generation resource as determined in accordance with Schedule 2 of this Agreement and the PJM Manuals, plus 10% of such costs; or

(iii) An amount determined by agreement between the Office of the Interconnection and the Market Seller.

## 7. FINANCIAL TRANSMISSION RIGHTS AUCTIONS

### 7.1 Auctions of Financial Transmission Rights.

Annual and periodic auctions to allow Market Participants to acquire or sell Financial Transmission Rights shall be conducted by the Office of the Interconnection in accordance with the provisions of this Section.

## Operating Agreement Revisions

## Non-Redline Version

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necessary state or local siting, construction and operating permits, to the ability to acquire necessary right-of-way, and to the right to recover, pursuant to appropriate financial arrangements and tariffs or contracts, all reasonably incurred costs, plus a reasonable return on investment, provided that, in the event that a Member cannot reinforce the local Transmission Facilities due to the unavailability of required financing, the local Transmission Facilities must be removed from the monitoring responsibility and dispatch control of the Office of the Interconnection within 60 days of the determination that required financing is unavailable. The local Transmission Facilities will remain under the monitoring and dispatch control of the Office of the Interconnection during the construction of the reinforcements.

**6.4 Offer Price Caps.**

**6.4.1 Applicability.**

(a) Except as specified below, if, at any time, it is determined by the Office of the Interconnection in accordance with Sections 1.10.8 or 6.1 of this Schedule that any generation resource may be dispatched out of economic merit order to maintain system reliability as a result of limits on transmission capability, the offer prices for energy from such resource shall be capped at the levels specified below. If the Office of the Interconnection is able to do so, such offer prices shall be capped only during each hour when the transmission limit affects the schedule of the affected resource, and otherwise shall be capped for the entire Operating Day. The energy offer prices as capped shall be used to determine any Locational Marginal Price affected by the offer price of such resource.

(b) The energy offer price any generation resource requested to be dispatched in accordance with Section 6.3 of this Schedule shall be capped at the levels specified below. If the Office of the Interconnection is able to do so, such offer prices shall be capped only during each hour when the affected resource is so scheduled, and otherwise shall be capped for the entire Operating Day. The energy offer prices as capped shall be used to determine any Locational Marginal Price affected by the price of such resource.

(c) Generation resources subject to an offer price cap shall be paid for energy at the applicable Locational Marginal Price.

(d) Offer price caps shall not be applicable to generation resources used to relieve the Western, Central and Eastern reactive limits in the PJM Control Area. In addition, offer price caps shall not be applicable to generation resources used to relieve any other transmission limit as to which the FERC has determined that offer price caps shall not be applicable.

(e) Offer price caps shall be suspended for any transmission limit(s) for any hour in which there are not three or fewer generation suppliers available for redispatch under subsection (a) that are jointly pivotal with respect to such transmission limit(s). Notwithstanding the number of jointly pivotal suppliers in any hour, if the Market Monitoring Unit determines that a reasonable level of competition will not exist based on an evaluation of all facts and circumstances, it may propose to the Commission the removal of offer-capping suspensions otherwise authorized by this section. Such proposals shall take effect only upon Commission acceptance or approval.

**6.4.2 Level.**

The offer price cap shall be one of the amounts specified below, as specified in advance by the market Seller for the affected unit:

(i) The weighted average Locational Marginal Price at the generation bus at which energy from the capped resource was delivered during a specified number of hours during which the resource was dispatched for energy in economic merit order, the specified number of hours to be determined by the Office of the Interconnection and to be a number of hours sufficient to result in an offer price cap that reflects reasonably contemporaneous competitive market conditions for that unit;

**Operating Agreement Revisions**

**Redline Version**

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Issued By: Craig Glazer
Vice President, Government Policy

Effective: June 1, 2004

Issued On: ~~November 6, 2003~~July 16, 2004
Filed to comply with order of the Federal Energy Regulatory Commission, Docket No. EL03-236, issued May 6, 2004, 107 FERC ¶ 61,112.

necessary state or local siting, construction and operating permits, to the ability to acquire necessary right-of-way, and to the right to recover, pursuant to appropriate financial arrangements and tariffs or contracts, all reasonably incurred costs, plus a reasonable return on investment, provided that, in the event that a Member cannot reinforce the local Transmission Facilities due to the unavailability of required financing, the local Transmission Facilities must be removed from the monitoring responsibility and dispatch control of the Office of the Interconnection within 60 days of the determination that required financing is unavailable. The local Transmission Facilities will remain under the monitoring and dispatch control of the Office of the Interconnection during the construction of the reinforcements.

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~~suspension of offer price caps. In the event the Market Monitoring Unit determines that a locality has become sufficiently competitive to warrant~~

~~suspension of offer price caps, it shall post a notice on the PJM Internet site that offer price caps shall be suspended as of the date specified in the notice. In the event the Market Monitoring Unit determines that a locality in which offer price caps are suspended is no longer sufficiently competitive to warrant continued suspension of offer price caps, the Market Monitoring Unit shall remove such suspension by providing notice on the PJM Internet site, which notice shall include the date the offer price caps shall be reinstated.~~

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The offer price cap shall be one of the amounts specified below, as specified in advance by the market Seller for the affected unit:

(i) The weighted average Locational Marginal Price at the generation bus at which energy from the capped resource was delivered during a specified number of hours during which the resource was dispatched for energy in economic merit order, the specified number of hours to be determined by the Office of the Interconnection and to be a number of hours sufficient to result in an offer price cap that reflects reasonably contemporaneous competitive market conditions for that unit;

# Exhibit C

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

**PJM Interconnection, L.L.C.** ) **Docket Nos. EL03-236-000**

**NOTICE OF FILING**
(July ___, 2004)

Take notice that on July 16, 2004, in compliance with the Commission's order in PJM Interconnection, L.L.C., 107 FERC ¶ 61,112 (2004), PJM Interconnection, L.L.C. ("PJM"), filed amendments to the PJM Open Access Transmission Tariff and the Amended and Restated Operating Agreement of PJM Interconnection, L.L.C. to revise the procedures for suspending offer capping when competitive conditions exist in load pockets. PJM also provided a further justification for its jointly pivotal supplier competitiveness standard.

PJM states that copies of its filing were served upon all persons on the Commission's service list for this proceeding.

Any person desiring to intervene or to protest this filing should file with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 C.F.R. 385.211 and 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. All such motions or protests should be filed on or before the comment date, and, to the extent applicable, must be served on the applicant and on any other person designated on the official service list. This filing is available for review at the Commission or may be viewed on the Commission's web site at http://www.ferc.gov, using the "eLibrary" link. Enter the docket number excluding the last three digits in the docket number filed to access the document. For assistance, contact FERC Online Support at FERCOnlineSupport@ferc.gov or toll-free at (866) 208-3676, or for TTY, contact (202) 502-8659. Protests and interventions may be filed electronically via the Internet in lieu of paper; see 18 C.F.R. 385.2001(a)(1)(iii) and the instructions on the Commission's web site under the "e-Filing" link. The Commission strongly encourages electronic filings.

Comment Date:

## 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, DC, this 16th day of July 2004.

Carrie L. Bumgarner

Counsel for
PJM Interconnection, L.L.C.