

Bowring, Joseph

From: Bowring, Joseph
Sent: Friday, September 08, 2006 12:23 PM
To: Zibelman, Audrey A.
Cc: Ott, Andy; Kormos, M.J.; Hagele, Jack
Subject: Quarterly Report re Exempt Interfaces

Audrey,

As I mentioned to you yesterday, in accordance with the Operating Agreement, I have attached the quarterly report from the Market Monitoring Unit regarding the exemption of internal PJM interfaces.

~~Section 6.4.1(d)(ii) of Schedule 1 of the PJM Operating Agreement states:~~

~~"On a quarterly basis, using an analysis no less stringent than the test for suspending offer capping set forth in sections 6.4.1(e) and (f) below, the PJM Market Monitoring Unit will evaluate whether additional interfaces also should be exempt and whether any existing exemptions should be terminated. Considering the recommendations of the PJM Market Monitoring Unit, the Office of the Interconnection shall determine whether to make a filing with the FERC proposing that an additional interface should be exempt or an existing exemption should be terminated. Any change in the exempt status of the interface shall become effective upon FERC acceptance. The Office of the Interconnection shall post a summary of the results of the PJM Market Monitoring Unit's quarterly analyses and the Office of the Interconnection's determination whether to make a filing with the FERC."~~

I provided a draft copy to Andy and Mike in June and discussed with them.

Please let me know if you would like to discuss.

- Joe

SMM - 00001

5/22/2007

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, September 13, 2006 3:59 PM
To: Ott, Andy
Cc: Cawley, Susan; Kelly, Susan
Subject: RE: BOM Meeting, October 17, 2006 - Agenda

Andy,
My expected topics at this point include:

- Regulation market report/recommendations
- TPS quarterly reports/recommendations
- Merger status
- AU/FMU issue/recommendations
- Black start issue/recommendations

- Joe

-----Original Message-----

From: Kelly, Susan
Sent: Wednesday, September 13, 2006 2:47 PM
To: Bowring, Joseph
Cc: Cawley, Susan
Subject: BOM Meeting, October 17, 2006 - Agenda

Joe,

Attached is the revised (but not yet approved) agenda for the upcoming board meeting. Andy has requested a return e-mail from you with details on the subject matter of your presentation. Ultimately, he will require both a memo and a presentation from you, but for today he is just looking for details.

He requests this information by COB today, Wednesday, 9/13/06.

Thanks,
Sue

Susan M. Kelly
Executive Administrator
for Andrew L. Ott, VP, Markets
PJM Interconnection
kellys@pjm.com

Bowring, Joseph

From: Bowring, Joseph
Sent: Friday, September 22, 2006 11:17 AM
To: Ott, Andy
Subject: RE: Draft CMC memo - Quarterly Report

Do you think I need PPT?

-----Original Message-----

From: Ott, Andy
Sent: Friday, September 22, 2006 11:13 AM
To: Bowring, Joseph; Kelly, Susan
Cc: Swimm, Nora
Subject: RE: Draft CMC memo - Quarterly Report

level of detail looks OK.

I will need to alert AAZ to this being a CMC subject and she will review . My position on this item is that since we have had the 3 exempt interfaces for some time w/o documented problems , this result will call into question the TPS. We may need to discuss it with her prior to the meeting

-----Original Message-----

From: Bowring, Joseph
Sent: Friday, September 22, 2006 10:25 AM
To: Kelly, Susan; Ott, Andy
Subject: Draft CMC memo - Quarterly Report

Please take a look at the attached for form and format.

Andy - please give both a quick read for content/level of detail etc.

Do you think power point slides are also required for this?

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, September 27, 2006 1:33 PM
To: 'Barry SPECTOR'
Cc: Duane, Vincent P.
Subject: RE: Scarcity Settlement [Privileged Attorney-Client Communication re PPL Complaint]

I submitted the first such analysis to PJM about 3 weeks ago. The process indicates that the next step is PJM's.

-----Original Message-----

From: Barry SPECTOR [mailto:SPECTOR@wrightlaw.com]
Sent: Wednesday, September 27, 2006 12:11 PM
To: Bowring, Joseph
Cc: Duane, Vincent P.
Subject: Scarcity Settlement [Privileged Attorney-Client Communication re PPL Complaint]

Joe, in reviewing the scarcity settlement for the PPL case, I note that, under the settlement, you are supposed to be doing quarterly analyses of exempt interfaces re offer capping, including need to add or subtract from the list, and posting the results on the web site.

Bowring, Joseph

From: Bowring, Joseph
Sent: Friday, October 06, 2006 5:06 PM
To: Zibelman, Audrey A.
Subject: Memos

Audrey

- I dropped off the draft Spinner memo. Please let me have any comments, as we discussed.
- I dropped off a hard copy of the TPS quarterly report CMC memo, with your change. It is in DOCS. Please let me have any comments.

Thanks,
Joe



INTEROFFICE MEMORANDUM

Date: October 9, 2006
To: Competitive Markets Committee
From: J. E. Bowring
cc: A. A. Zibelman
Subject: Quarterly Market Monitoring Units Reports to PJM Regarding Exempt Interfaces

Section 6.4.1(d)(ii) of Schedule 1 of the PJM Operating Agreement states:

"On a quarterly basis, using an analysis no less stringent than the test for suspending offer capping set forth in sections 6.4.1(e) and (f) below, the PJM Market Monitoring Unit will evaluate whether additional interfaces also should be exempt and whether any existing exemptions should be terminated. Considering the recommendations of the PJM Market Monitoring Unit, the Office of the Interconnection shall determine whether to make a filing with the FERC proposing that an additional interface should be exempt or an existing exemption should be terminated. Any change in the exempt status of the interface shall become effective upon FERC acceptance. The Office of the Interconnection shall post a summary of the results of the PJM Market Monitoring Unit's quarterly analyses and the Office of the Interconnection's determination whether to make a filing with the FERC."

Section 6.4.1(e) of the PJM Operating Agreement states in part:

"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."

The MMU submitted the required report to PJM on September 8, 2006. In that report, the MMU recommends that the Commission terminate the exemption from offer capping currently applicable to generation resources used to relieve the Western, Central and Eastern reactive limits in the MAAC Control Zone and the APS South Interface. The PJM Market Monitor recommends that all constraints, including these interfaces, be subject to three-pivotal-supplier testing as specified in the PJM Operating Agreement.

This recommendation is based on two factors. The current exemption of the West, South and Central interfaces is based on an analysis performed in 1997 and supported by the October 2004 report cited above. The current exemption of the APS South Interface is based on the October 2004 report. Neither analysis was as accurate as the current application of the three-pivotal-supplier test by PJM.



The primary reason to remove the exemptions for the identified interfaces is that they are no longer necessary given PJM's dynamic implementation of the three-pivotal-supplier test based on actual market conditions in real-time. It is not necessary to make an ex ante decision about the market structure associated with individual interface constraints that applies for an extended period. Prior to the implementation of the three-pivotal-supplier test, all units required to resolve a constraint were offer capped whenever the constraint was binding. For the identified exempt interfaces, this could have resulted in the offer capping of a large number of units even when the relevant market was structurally competitive. That is no longer the case. Under the current PJM dynamic approach, offer capping will be applied only as necessary and will be applied on a non-discriminatory basis for all constraints.

The fact that some non-exempt constraints never had any generation resources that failed the three-pivotal-supplier test during the period analyzed does not mean such constraints should always be exempt from offer capping for local market power. The same logic applies to currently exempt interface constraints. Even if no generation resources associated with any of the exempt interface constraints failed the three-pivotal-supplier test during the study period, it does not mean such interfaces should always be exempt from offer capping for local market power. The fact that one or more generation resources required to resolve these interfaces did fail the three-pivotal-supplier test at times reinforces the point. If the generation resources associated with these interfaces always pass the three-pivotal-supplier test, there will be no offer capping. Conversely if at times such resources fail the three-pivotal-supplier test, appropriate offer capping will be applied.

There are potential counter arguments to removing the exemption from all currently exempt interfaces. For one, there has been no demonstration of the exercise of market power, and there were very few instances where three of the four interfaces were tested. The results also mean that the market power test (the three-pivotal-supplier test) is too conservative. More offer capping suggests that PJM markets are not competitive. The potential for offer capping at the three major interfaces also may create uncertainty about hub pricing and therefore negatively affect liquidity.

PJM's approach to market power issues is that competitive markets do not require market power in order to function properly and to provide the appropriate incentives for operation and investment. The goal of market power mitigation is to mitigate in a targeted manner that ensures the minimum level of mitigation consistent with a competitive outcome. Offer capping in the presence of structurally non-competitive markets means that PJM is ensuring that markets remain competitive, and the real-time application of testing and mitigation means that PJM does not offer cap when it is not required. The targeted application of mitigation in real-time, implemented in March of this year, is a significant improvement in PJM's market power mitigation methodology and has resulted in a reduction of offer capping that is documented in the MMU report.

The brief responses to each of the counterarguments are: the test would result in offer capping only in the presence of offers higher than competitive offers, or market power. It is correct that there were very few instances where three of the four interfaces were tested (where the constraint was binding). The results mean only that the markets created by the designated interfaces fail the test, and there would be offer capping only of non-competitive offers. The potential for offer capping at the three



major interfaces should provide the markets increased certainty that the hub prices cannot be affected by market power and therefore enhance liquidity.

PJM could take actions in addition or as an alternative to those recommended in the report. PJM could post the MMU report and facilitate a discussion with members at an MIC meeting. PJM could also propose the removal of the exemption only for APS South, the interface with the majority of test failures, while agreeing that the MMU would continue to monitor and report on the remaining exempt interfaces.

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, October 18, 2006 9:36 AM
To: Zibelman, Audrey A.
Cc: Ott, Andy; Kormos, M.J.; Duane, Vincent P.
Subject: RE: Quarterly Report re Exempt Interfaces

Audrey,

As I mentioned previously, in accordance with the Operating Agreement, I have attached the second quarterly report from the Market Monitoring Unit regarding the exemption of internal PJM interfaces.

Section 6.4.1(d)(ii) of Schedule 1 of the PJM Operating Agreement states:

"On a quarterly basis, using an analysis no less stringent than the test for suspending offer capping set forth in sections 6.4.1(e) and (f) below, the PJM Market Monitoring Unit will evaluate whether additional interfaces also should be exempt and whether any existing exemptions should be terminated. *Considering the recommendations of the PJM Market Monitoring Unit, the Office of the Interconnection shall determine whether to make a filing with the FERC proposing that an additional interface should be exempt or an existing exemption should be terminated.* Any change in the exempt status of the interface shall become effective upon FERC acceptance. The Office of the Interconnection shall post a summary of the results of the PJM Market Monitoring Unit's quarterly analyses and the Office of the Interconnection's determination whether to make a filing with the FERC."

As I discussed with Andy, the document is basically identical to the first quarterly report except that the numbers have changed to reflect additional experience. The numbers and analysis continue to support our view of this issue as expressed in both reports. This report includes cumulative results for the first two quarters under the three pivotal supplier test.

Please let me know if you would like to discuss.

- Joe

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, October 18, 2006 1:28 PM
To: Duane, Vincent P.; Zibelman, Audrey A.
Cc: Ott, Andy; Kormos, M.J.
Subject: RE: Quarterly Report re Exempt Interfaces

The potential for offer capping at the three major interfaces should provide the markets increased certainty that the hub prices cannot be affected by market power. The result would be a positive rather than a negative impact on liquidity. Offer capping provides the markets the comfort that the outcomes represented by hub prices will be competitive rather than subject to the unpredictable exercise of market power.

Another point on this is that the most liquid hub, the West Hub, is already affected by the application of the local market power mitigation rules as most of the constraints that affect West Hub prices are already subject to local market power mitigation rules. The proposed ending of the interface exemption would ensure the consistent application of the rule. The same is true of the other hubs.

-----Original Message-----

From: Duane, Vincent P.
Sent: Wednesday, October 18, 2006 1:14 PM
To: Bowring, Joseph; Zibelman, Audrey A.
Cc: Ott, Andy; Kormos, M.J.
Subject: RE: Quarterly Report re Exempt Interfaces

Joe, as I think I have mentioned previously, it strikes me this report would benefit by considering what effect if any removing the exemption would have on the exchange and OTC financial markets trading done at these interfaces. My concern (more intuitive than based on any evidence) is that the uncertainty that would come from potential intervention in the market during some hours is so unpredictable as to defy modeling and could dampen forward trading liquidity and increase risk premiums.

I may have missed discussion of that point in the report, but in any event I think that a financial trading/markets perspective from a quantitative or structuring expert would be needed to give comprehensive consideration of the question.

From: Bowring, Joseph
Sent: Wednesday, October 18, 2006 9:36 AM
To: Zibelman, Audrey A.
Cc: Ott, Andy; Kormos, M.J.; Duane, Vincent P.
Subject: RE: Quarterly Report re Exempt Interfaces

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Please let me know if you would like to discuss.

- Joe

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, October 18, 2006 1:28 PM
To: Zibelman, Audrey A.
Subject: RE: Quarterly Report re Exempt Interfaces

Will do.

-----Original Message-----

From: Zibelman, Audrey A.
Sent: Wednesday, October 18, 2006 1:27 PM
To: Bowring, Joseph
Cc: Ott, Andy; Kormos, M.J.; Duane, Vincent P.
Subject: RE: Quarterly Report re Exempt Interfaces

Joe - please set up a time for us to review this and talk about the questions raised by Vince.

-----Original Message-----

From: Bowring, Joseph
Sent: Wednesday, October 18, 2006 9:36 AM
To: Zibelman, Audrey A.
Cc: Ott, Andy; Kormos, M.J.; Duane, Vincent P.
Subject: RE: Quarterly Report re Exempt Interfaces

Audrey,

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As I discussed with Andy, the document is basically identical to the first quarterly report except that the numbers have changed to reflect additional experience. The numbers and analysis continue to support our view of this issue as expressed in both reports. This report includes cumulative results for the first two quarters under the three pivotal supplier test.

Please let me know if you would like to discuss.

- Joe

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, October 18, 2006 3:32 PM
To: Mayes, Jeffrey
Subject: RE: 4th Quarter exempt interface evaluation

We have completed first two quarterly evaluations. I just sent you the second one - it is cumulative. PJM is required to act. You might check with Vince to see what they plan to do. Let me know. We discussed with CMC yesterday and Andy/AAZ told them that we would discuss recommendations with stakeholders although we do not have a date or committee yet.

-----Original Message-----

From: Mayes, Jeffrey
Sent: Wednesday, October 18, 2006 3:29 PM
To: Bowring, Joseph
Subject: 4th Quarter exempt interface evaluation

Joe:

Per Barry's comment, are you ready to go with the 4th Quarter exempt interface evaluation?

-Jeff

MATTER 4**A. CASE NAME**

PJM Interconnection, LLC, Docket Nos. EL03-236 (no- three pivotal supplier test); EL04-121 (exempt interfaces).

B. DESCRIPTION

PJM filing of amendments to the PJM Tariff and Operating Agreement to revise its local market power mitigation rules: no-three pivotal supplier test.

C. PROCEDURAL DATES

- PJM re-designation of tariff sheets due – 4/21/06.
- Post results of review of out-of-merit LMP pricing – 5/30/06.
- Complete stakeholder process – 11/30/06 (may be extended if there is a reasonable prospect of consensus until 1/31/07).
- MMU mitigation report – 4/27/07.

D. SIGNIFICANT FERC ORDERS

- Letter order approving settlement – 1/27/06.
- PJM Interconnection, L.L.C., 114 FERC ¶ 61,302 (Mar. 22, 2006) (Order on rehearing and compliance).

E. SIGNIFICANT PAST PLEADINGS AND MOST RECENT CURRENT PLEADINGS FILED IN THE MATTER

- Settlement filed – 11/16/05.
- PJM posting of required LMP report – 5/30/06.

F. COMMENTS

- Latest order rejects Dayton rehearing re exempt generators as to offer capping of its units, making appeal ripe on this issue.
- 180-day stakeholder process re LMPs and dispatch to commence following report posting.
- Note requirement that PJM/MMU evaluate quarterly and post the evaluation re the exempt interfaces. I understand MMU has a draft of first evaluation.

Bowring, Joseph

From: Scheidecker, Paul
Sent: Wednesday, November 08, 2006 1:12 PM
To: Hartung, Dean; Bowring, Joseph; Bresler, Frederick S. (Stu) III
Cc: Gilrain, Mark
Subject: RE: Hours where interfaces failed TPS

The attached denoted all tests, passed or failed. If you need a pass/fail breakdown, just let me know.

-----Original Message-----

From: Hartung, Dean
Sent: Wednesday, November 08, 2006 12:42 PM
To: Bowring, Joseph; Bresler, Frederick S. (Stu) III
Cc: Gilrain, Mark; Scheidecker, Paul
Subject: RE: Hours where interfaces failed TPS

Joe or Paul,
 Are all of the entries TPS failed on the attached ? Yes, I would like to discuss the approach.

-----Original Message-----

From: Bowring, Joseph
Sent: Wednesday, November 08, 2006 11:31 AM
To: Bresler, Frederick S. (Stu) III
Cc: Hartung, Dean; Gilrain, Mark; Scheidecker, Paul
Subject: RE: Hours where interfaces failed TPS

See attached - created by Paul Scheidecker. Let me know if you would like to discuss the approach to the analysis.

-----Original Message-----

From: Bresler, Frederick S. (Stu) III
Sent: Wednesday, November 08, 2006 9:27 AM
To: Bowring, Joseph
Cc: Hartung, Dean; Gilrain, Mark
Subject: Hours where interfaces failed TPS

Joe - I understand Andy committed mkt ops to performing an LMP analysis of the hours when the transfer interfaces failed the TPS analysis. Can you please send me the hours in question so we can begin the analysis?

Thanks,

- Stu

Bowring, Joseph

From: Scheidecker, Paul
Sent: Monday, November 13, 2006 7:15 AM
To: Hartung, Dean; Bowring, Joseph
Cc: Bresler, Frederick S. (Stu) III
Subject: RE: Hours where interfaces failed TPS

Dean,

Attached are test results that I pulled for the period March 1 though Sept 10th to which I have appended the test failed flag corresponding to each owner.

Thanks,

Paul

-----Original Message-----

From: Hartung, Dean
Sent: Thursday, November 09, 2006 4:21 PM
To: Scheidecker, Paul; Bowring, Joseph
Cc: Bresler, Frederick S. (Stu) III
Subject: FW: Hours where interfaces failed TPS

Paul or Joe,
 Please send me the pass/fail breakdown. I will need to know when they failed for the analysis that Andy and Stu want completed. Thanks in advance.

-----Original Message-----

From: Hartung, Dean
Sent: Wednesday, November 08, 2006 1:13 PM
To: Scheidecker, Paul; Bowring, Joseph; Bresler, Frederick S. (Stu) III
Cc: Gilrain, Mark
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Thanks,

- Stu

Bowring, Joseph

From: Bowring, Joseph
Sent: Tuesday, November 14, 2006 8:24 PM
To: Scheidecker, Paul
Subject: Quarterly TPS report

Dean Hartung has been reviewing the analysis. He has told Andy that the test count does not represent hours and that multiple tests are sometimes run within an hour. I believe that you correctly characterized the numbers as numbers of tests or intervals and not numbers of hours. Please verify that for me.

Please also contact Dean and encourage him to discuss any questions or issues he has with you.

Give me a call in the AM.

Thanks

Bowring, Joseph

From: pjm-mic-bounces+bowrij=pjm.com@lists.pjm.com [noonaa@pjm.com] on behalf of noonaa@pjm.com
Sent: Thursday, December 14, 2006 11:37 AM
To: pjm-mic@lists.pjm.com
Subject: [Pjm-mic] MIC meeting of December 20, 2006

Sent on behalf of Dean Hartung:

Attached please find the Agenda for the subject meeting with active links to the material currently posted on the website

Please note:

We are extending the review period from Monday, December 18, 2006 until Friday, December 22, 2006 for the stakeholder review of the Draft 180 Day Stakeholder Working Group Report. Please send your comments to Dean Hartung (hartund@pjm.com) and Stu Bresler (bresler@pjm.com) by COB on Friday, December 22, 2006.

If you plan on attending the MIC and have not yet registered please do so as soon as possible via the attached link: <http://www.pjm.com/committees/form-mic-attend.jsp>.

Bowring, Joseph

From: Hartung, Dean
Sent: Friday, December 15, 2006 10:00 AM
To: Bowring, Joseph
Subject: RE: APSouth LMP Analysis

I wanted to have it today but, it looked like Paul was on vacation. We can do it another day if you like. Let me know.

-----Original Appointment-----

From: Bowring, Joseph
Sent: Friday, December 15, 2006 9:59 AM
To: Hartung, Dean
Subject: Declined: APSouth LMP Analysis
When: Monday, December 18, 2006 9:00 AM-10:00 AM (GMT-05:00) Eastern Time (US & Canada).
Where: My Office

--At RPM meeting per my schedule--

Bowring, Joseph

From: Hartung, Dean
Sent: Friday, December 15, 2006 3:07 PM
To: Scheidecker, Paul; Bowring, Joseph
Cc: Carroll, Rebecca; Marcino, Angelo N.
Subject: LMP Analysis for APSouth



apsouth_analysis.doc (238 KB)

Paul and Joe,
Attached is the documentation from our APSouth analysis. We will review this document at our meeting on Monday.

Bowring, Joseph

From: Scheidecker, Paul
Sent: Thursday, December 14, 2006 3:26 PM
To: Bowring, Joseph
Subject: RE: Quarterly Report

Haven't heard a word about it since I sent him the data. He was pretty tight lipped about what he was planning to do with it.

-----Original Message-----

From: Bowring, Joseph
Sent: Thursday, December 14, 2006 3:01 PM
To: Scheidecker, Paul
Subject: Quarterly Report

Is Dean keeping you in the loop on their calculations of market power for APS south?
Can you update me?

Bowring, Joseph

From: Bowring, Joseph
Sent: Thursday, December 14, 2006 2:34 PM
To: Scheidecker, Paul; Haas, Howard
Subject: Final markets response to Quarterly

Comments?

I will be debating with Andy at MIC.

Thanks

Bowring, Joseph

From: Hartung, Dean
Sent: Thursday, December 14, 2006 4:09 PM
To: Scheidecker, Paul
Cc: Bowring, Joseph
Subject: RE: TPS Results Analysis

Yes - I was hoping to get together tomorrow - if you have time. What is your availability tomorrow?

-----Original Message-----

From: Scheidecker, Paul
Sent: Thursday, December 14, 2006 4:06 PM
To: Hartung, Dean
Cc: Bowring, Joseph
Subject: TPS Results Analysis

Dean,

I wanted to check in to see how you were coming along with your review of the TPS test results that I provided a short time ago. Are you in a position yet to share your approach or preliminary findings? If I can be of any assistance with the analysis, or if you require more data, please let me know.

Thanks,

Paul

Paul G. Scheidecker
PJM Interconnection, L.L.C.
Market Monitoring Unit
610.666.4487

Bowring, Joseph

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Thanks,

Paul

Paul G. Scheidecker
PJM Interconnection, L.L.C.
Market Monitoring Unit
610 666.4437

Bowring, Joseph

From: Scheidecker, Paul
Sent: Thursday, December 14, 2006 4:03 PM
To: Bowring, Joseph; Haas, Howard
Subject: Response to MMU TPS - PGS Comments.pdf

There was so much here to work with that I hardly knew where to begin.

My comments are appended.

Bowring, Joseph

From: Bowring, Joseph
Sent: Thursday, December 14, 2006 3:32 PM
To: Scheidecker, Paul
Subject: RE: Quarterly Report

Please ask him, via email, with a cc to me, to share his approach to the analysis and his current results.

Andy told me that he thought Dean was sharing.

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Sent: Thursday, December 14, 2006 3:26 PM
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Subject: RE: Quarterly Report

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Bowring, Joseph

From: Scheidecker, Paul
Sent: Wednesday, December 20, 2006 1:37 PM
To: Bowring, Joseph
Subject: RE: Q TPS

OK

-----Original Message-----

From: Bowring, Joseph
Sent: Wednesday, December 20, 2006 1:37 PM
To: Scheidecker, Paul
Subject: Q TPS

Can you talk with Dean tomorrow (or when you are next available) and tell him the problems we have with his method for analyzing APS South? Let me know how it goes and what his response is. I told Andy that we thought their approach was incorrect and that we would start by you meeting with Dean to discuss.

We also need to develop our own analysis, as they plan to present some version of their analysis to the MIC in January.

Let's discuss.
thanks



MMU Analysis of Exempt Interfaces

PJM MMU Application of Three Pivotal Supplier Test to Exempt Interface Constraints				
Interface	Total tests applied	Number of tests with one or more failing owners	Percent of tests with one or more failing owners	
TRANSFER INTERFACE: APSOUTH	483	250	52%	
TRANSFER INTERFACE: CENTRAL	16	3	19%	
TRANSFER INTERFACE: EAST	11	5	45%	
TRANSFER INTERFACE: WEST	88	16	18%	



- Market structure test (TPS) applied only when AP South is a relevant market.
 - Only supply relevant to this market is included in test.
 - The relevant supply included is incremental, effective MW of supply, available at a price less than or equal to 1.5 times the clearing price.
- The local AP South market exists only when the AP South Interface is binding.
 - This is not the market to meet aggregate PJM load
 - This market was relevant on 483 occasions between March 1 through August 31, 2006, when it was tested.
 - Of 483 tests, there were 250 with one or more failing owners.
- When the AP South market existed, there were one or more failing owners 52% of the time.



- Test results define failing participants - not the market.
- A unit is capped only if:
 - A unit belongs to a participant who failed the test
 - A unit is included in the measure of incremental and available supply used to determine the test result
 - A unit is dispatched to relieve the constraint (Units already dispatched on price cannot be capped.)
 - The unit's price offer is greater than the competitive offer, as calculated by the unit's owner. (Cost plus 10 percent.)
- For specific intervals, one or more participants may fail the test and one or more participants may pass the test concurrently.



- In the context of the three pivotal supplier test, when a transmission constraint creates the potential for local market power:
 - PJM applies a structural test to determine if local market is competitive
 - PJM applies a conduct test to determine if generator offers exceed competitive levels
 - PJM applies a market performance test to determine if such generator offers would affect the market price



- MSD examined the impact of not offer capping for the APSouth constraint.
- MSD looked at the 250 intervals with one or more failed participants.
- MSD looked for units operating on price schedules and logged for AP South.
- MSD looked for offline units with $P > C$, with 3% or greater DFAX, in the same interval.
- MSD re-ran the dispatch case with identified units on their cost schedules rather than price schedules.
- MSD analysis determined impact of lack of local market power mitigation of \$.58 to \$12.50 per MWh.
- MSD concluded no reason to remove exemption



LMP Impact Analysis

- LMP impact analysis is first step in impact analysis.
- Total cost impact is next step.
- MMU calculated the total cost impact by determining load affected by increased LMP.
- Full analysis would include effects on operating reserve costs (not likely to be large in this case).



Cost Impact for MSD LMP Products

Zonal total cost effect using Market's hourly integrated LMP results

DATE	HOUR_BEG	PEPCO \$ in hour	BGE \$ in hour	DOM \$ in hour	Total dollar impact on zones in hour
4/20/2006	19	\$ (18,251)	\$ (18,575)	\$ (22,648)	\$ (59,475)
5/31/2006	17	\$ (9,641)	\$ (8,865)	\$ (9,268)	\$ (27,774)
6/1/2006	10	\$ (22,785)	\$ (20,034)	\$ (84,062)	\$ (126,881)
6/1/2006	11	\$ (23,417)	\$ (30,698)	\$ (25,691)	\$ (79,806)
6/2/2006	10	\$ (30,748)	\$ (27,200)	\$ (65,639)	\$ (123,587)
6/2/2006	16	\$ (14,887)	\$ (26,204)	\$ (40,797)	\$ (81,888)
7/22/2006	14	\$ (67,163)	\$ (56,418)	\$ (153,397)	\$ (276,978)
Average effect over hours		\$ (26,699)	\$ (26,856)	\$ (57,357)	\$ (110,913)
Total effect over hours		\$ (186,893)	\$ (187,995)	\$ (401,502)	\$ (776,389)



- No reason to assume that a decrease in the chance of being mitigated (by removing capping from APSouth) would cause a change in bid behavior.
 - Relevant units are frequently subject to offer capping for other constraints.
 - Holding all else constant, where market power exists, mark-up is not expected to vary between scenarios where there is 0% of being mitigated, a 5% chance of being mitigated or a 99% chance of being mitigated.
 - A lack of observed changes in behavior is not, therefore, evidence of an absence of market power in the APSouth market.
 - PJM did not examine mark-up of relevant units.

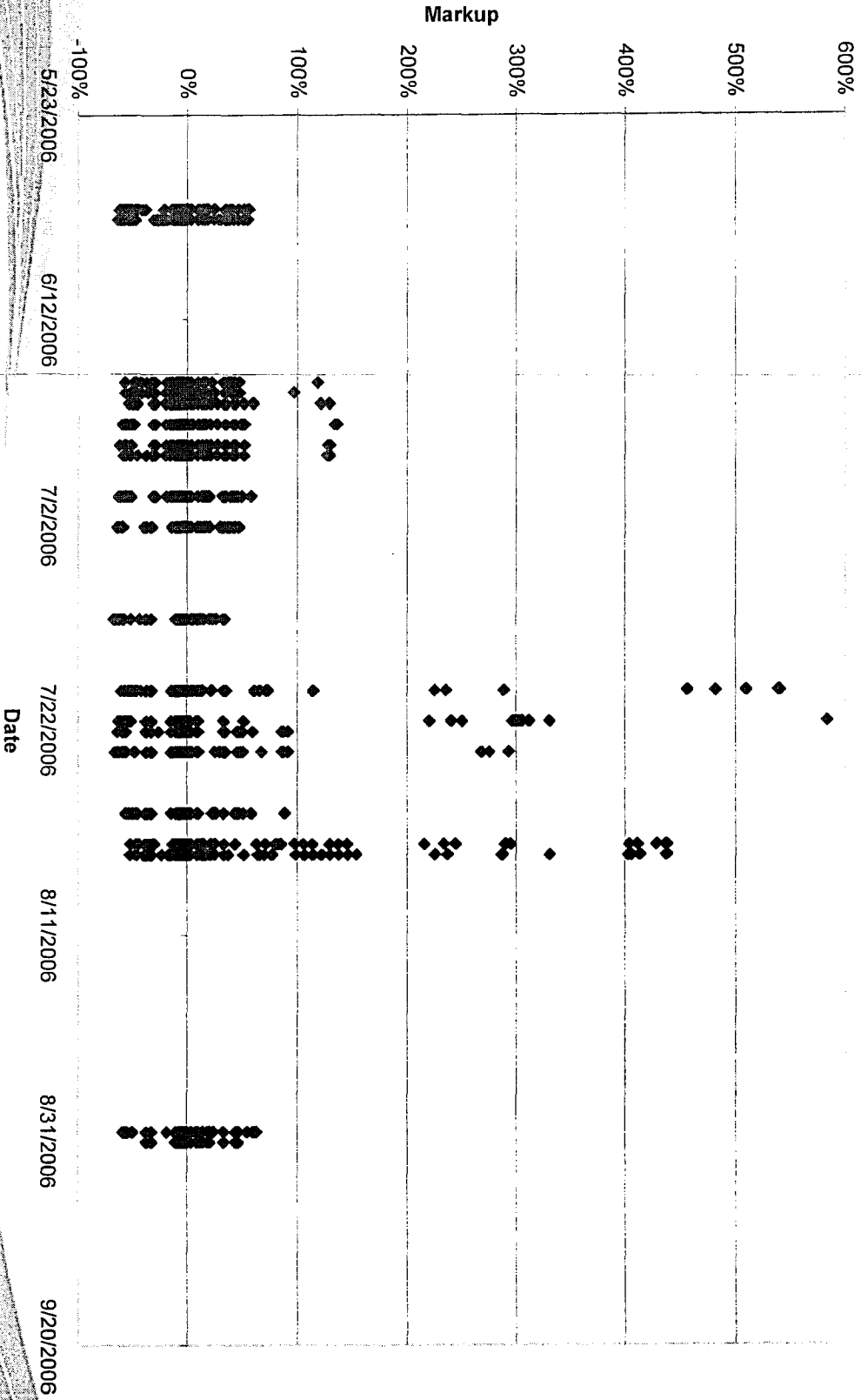


- MMU examined unit markups
 - For all units tested for APSouth
 - For all units that failed TPS for APSouth
- Markups are an indicator of the potential impacts of failure to offer cap in the presence of structural market power



APWA 2006

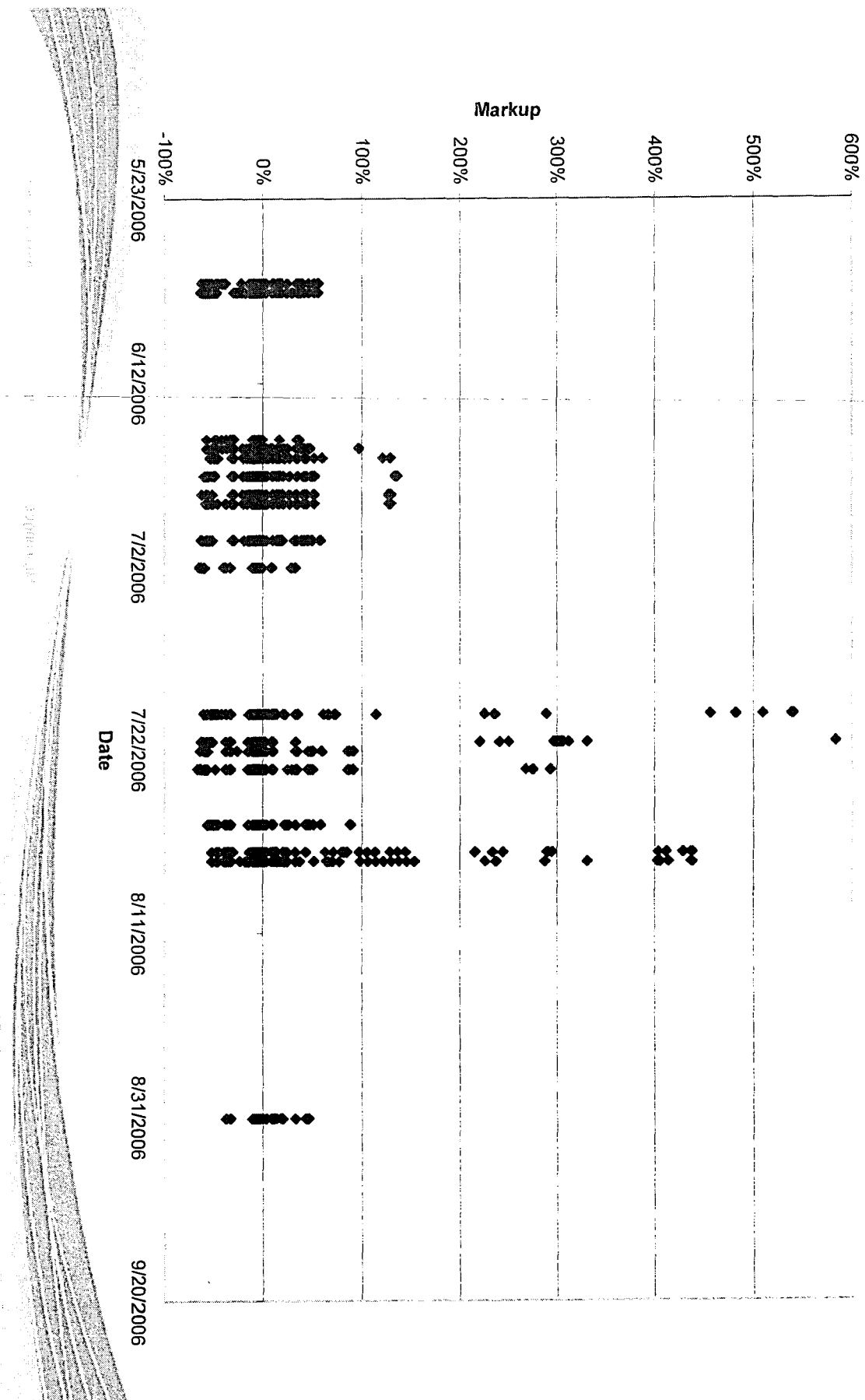
APSouth tested unit markup in PEPCO, DOM, BC Summer 2006





Markup for Unit Costs

APSouth tested and failed unit markup in PEPCO, DOM, BC summer 2006





- The market tested by the TPS in a given interval is the market that is relevant to the relief of the constraint in that interval.
- The relevant supply consists of incremental, effective MW of supply that are available at a price less than or equal to 1.5 times the clearing price.
- Units included in relevant supply vary by interval tested and by actual market conditions during that interval.
- When the clearing price is low, peakers will not be part of potential supply. When the clearing price is high, coal-fired steam will be loaded and not part of relevant supply.
- When ownership varies by location on the supply curve, the results of the TPS test will vary by interval.

- PJM evidence does not support a conclusion of an absence of market power.
- Structure: Available evidence shows the relevant market, the market to relieve the APSouth constraint, has a non-competitive market structure 52% of the time it was tested between March 1 and August 31, 2006.
- Behavior: Available evidence shows that participants who are part of available supply for the APSouth TPS test have significant mark-ups.
- Performance: Available evidence shows that participants who failed the APSouth TPS test have mark-ups that, in the absence of capping, would have a significant impact on market-outcomes.



- MMU will continue to issue quarterly reports per the OA requirement.
- MMU recommends a joint MSD/MMU examination of the application of TPS in Real-Time Market and Day-Ahead Market.
- MMU recommends that MSD apply TPS to exempt interfaces in Day-Ahead Market.
 - Exempt interfaces are more frequently constrained in DA than RT.
 - Need data on test results in order to do complete evaluation of the impact of exempt interfaces.



APSouth Interface Three Pivotal Supplier Test Evaluation

Andrew Ott
PJM MIC Meeting
1/31/07

MMU Analysis of Exempt Interfaces

- On October 18, 2006, the PJM MMU issued its required quarterly report regarding offer capping exemptions on PJM Reactive Interfaces.
- The MMU recommended that the offer capping exemption applicable to West, Central, East, and APSouth Interfaces be terminated.
- The report included, for each of the four exempt interfaces, an analysis of 5-minute intervals for which at least one generation owner failed the Three Pivotal Supplier (TPS) test during a six-month period from March 1 through August 31, 2006.
- MMU report stated that the APSouth interface had the most intervals for which at least one supplier failed the TPS test: 250 failed intervals out of 483 intervals tested (52%) over the six month period.

PJM MMU evaluation of Exempt interfaces



PJM MMU Application of Three Pivotal Supplier Test to Exempt Interface Constraints				
Interface	Total tests applied	Number of tests with one or more failing owners	Percent of tests with one or more failing owners	
TRANSFER INTERFACE: APSOUTH	483	250	52%	
TRANSFER INTERFACE: CENTRAL	16	3	19%	
TRANSFER INTERFACE: EAST	11	5	45%	
TRANSFER INTERFACE: WEST	88	16	18%	

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PJM Approval of 1664-1-2014-01

- PJM staff issued a response to the MMU analysis.
- PJM staff in its response highlighted the fact that 250 failed intervals represents less than one half of one percent of the 52,992 total intervals in the six month period.
- PJM Staff also indicated that there has been no finding of market power abuse related to the APSouth constraint.
- Given these facts, PJM staff declined to seek a change to the offer capping exemption for these interfaces pending further analysis.
- PJM staff recommended that further analysis be conducted as follows:
 - Evaluate the material impact of not offer capping for the APSouth constraint for the analysis period
 - Evaluate generation offers market participants with respect to price based offers since the exemption was implemented to determine if offers price-based materially increased more than cost-based offers.

PJM Evaluation of MMU Results

Three Pivotal Supplier Test Results for Exempt Interfaces (March 1, 2006 – August 31, 2006)

Exempt Interface	Number of Intervals with one or more failing owners	Total Number of Intervals in Period	Percent of Intervals with one or more failing owners
AP South	250	52,992	0.47%
Central	3	52,992	0.01%
East	5	52,992	0.01%
West	16	52,992	0.03%



- Markets staff evaluated each of the 250 intervals for which APSouth interface failed the three pivotal supplier test.
- **Evaluation process**
 - Determine if any units were called on, out of merit order, for APSouth constraint on their price-based schedule
 - Determine if there were any off-line units that could have been called on for the APSouth on cost-based offer that was less expensive than actual dispatch result.
 - If either of the above conditions existed, rerun the dispatch case and LMP with offer capping exemption for APSouth removed.
 - Compare the re-executed LMP results to original LMP results to evaluate the impact of APSouth offer capping exemption

400000

PJM Staff Additional Analysis 1/17/2015

- Of the 250 failed intervals, 166 did not require detailed analysis because either:
 - No units were logged as running for the APSouth constraint;
 - No units that were logged for the APSouth constraint were running on their price schedules; or
 - No off-line units that could have been called on for the APSouth constraint had a cost based offer that was economic
- 84 intervals were therefore evaluated in detail to determine the price impact of offer capping for the APSouth constraint.
- Of the 84 intervals analyzed in detail, 7 were found to result in price changes when offer capping exemption was removed for the APSouth constraint

1/1/2018

Hourly Reported - All Hours (All Hours -
For the 7 days prior to ours

Hour	PEPCO Zone	BC Zone	DOM Zone
A	-\$5.17	-\$4.92	-\$2.25
B	-\$1.67	-\$1.50	-\$0.58
C	-\$4.42	-\$3.83	-\$6.08
D	-\$4.33	-\$5.58	-\$1.75
E	-\$6.42	-\$5.67	-\$4.92
F	-\$2.75	-\$4.75	-\$2.67
G	-\$12.50	-\$9.83	-\$10.08
Average Change over the Seven affected hours:	-\$5.32	-\$5.15	-\$4.05
Average Change - All Hours:	-\$0.008	-\$0.008	-\$0.006

Three Pivotal Supplier Test for AP South

The three pivotal supplier test results that were executed on affected days are summarized below:

Date	Total TPS	TPS Tests -		Oscillations
	Tests	Failed	Passed	
A	29	12	17	10
B	32	8	24	6
C,D	38	11	27	8
E,F	45	26	19	16
G	23	14	9	4

- Detailed analysis indicated that only 7 of the 250 intervals would have resulted in a price difference had offer capping exemption not been in place
- No systematic changes to price offer characteristics were observed when offer capping exemption was implemented
- The Three Pivotal supplier test results tend to oscillate (pass to fail or vice versa) in adjacent intervals

- The failure of the Three Pivotal Supplier tests for APSouth appear to be random rather than systematic
- The recommendation for the removal of the offer capping exemption for APSouth does not appear to be justified based on these results
- More analysis is required to investigate reasons for Three Pivotal supplier test result characteristics
- PJM would like to encourage stakeholder discussion on the issue



Market Monitoring Unit

Analysis of the Three Pivotal Supplier Test: March 1 through May 31, 2006

PJM Market Monitoring Unit
September 8, 2006

Summary

The Market Monitoring Unit (MMU) submits this report in compliance with its obligation to evaluate on a quarterly basis whether any changes in status are appropriate for the exempt and non-exempt interfaces in PJM.

The PJM Operating Agreement (OA) (Schedule 1, Section 6.4.1(d)(i)) states that "offer price caps shall not be applicable to generation resources used to relieve the Western, Central and Eastern reactive limits in the MAAC Control Zone and APS South Interface," subject to the additional OA provision (Schedule 1, Section 6.4.1(d)(ii)) that "on a quarterly basis, using an analysis no less stringent than the test for suspending offer capping set forth in sections 6.4.1(e) and (f) below, the PJM Market Monitoring Unit will evaluate whether additional interfaces also should be exempt and whether any existing exemptions should be terminated." ~~This report is in compliance with the defined MMU's quarterly reporting obligation.~~

The test for suspending offer capping set forth in the OA Schedule 1, Sections 6.4.1(e) and (f) is the three pivotal supplier test. The three pivotal supplier test is applied by PJM on an ongoing basis in order to determine whether offer capping is required for any constraint not exempt from offer capping. The MMU analyzed the results of the three pivotal supplier tests conducted by PJM for the real-time energy market during the period March 1, 2006 through May 31, 2006. A summary of the results of PJM's application of the three pivotal supplier test is presented for all constraints including interfaces currently exempt from the application of offer mitigation rules and interfaces currently subject to the application of the offer mitigation rules.

As a result of PJM's recent implementation of the three pivotal supplier test in real time, the actual competitive conditions associated with each binding constraint are analyzed in real time as they arise. The three pivotal supplier test replaced the prior approach which was to offer cap all units required to resolve a binding constraint. As a result of the fact that the new approach ensures that offer capping will be applied only when required by market conditions, the MMU recommends that no interfaces or constraints be granted a blanket exemption. The MMU recommends that offer capping be based on the application of the three pivotal supplier test to actual market structures for all constraints, including those interfaces now exempt from offer capping.

Background

By order issued April 18, 2005, the Commission set for hearing, in Docket No. EL04-121-000, PJM's proposal (a) to exempt the APS South Interface from PJM's offer-capping rules and (b) to conduct annual competitive analyses to determine whether additional exemptions from offer capping are warranted.

By order issued July 5, 2005, the Commission also set for hearing, in Docket No. EL03-236-006, PJM's three pivotal supplier test used to determine whether suppliers have market power when units must be called out of merit order in order to resolve transmission constraints. The Commission further set for hearing issues related to the appropriateness of implementing scarcity pricing in PJM. In the July Order, the Commission consolidated Docket No. EL04-121-000 and Docket No. EL03-236-006.

On November 16, 2005 PJM filed a Settlement Agreement resolving all issues set for hearing in the two section 206 proceedings established by the Commission to address certain aspects of PJM's market power mitigation rules including the application of the three

pivotal supplier test, provisions for scarcity pricing, offer caps for frequently mitigated units and competitive issues associated with certain of PJM's internal interfaces. On December 20, 2005, the Presiding Administrative Law Judge certified the Settlement Agreement to the Commission as uncontested. On January 27, 2006 in Docket Nos. EL03-236-006, EL04-121-000, 001 and 002 the Commission ordered that the Settlement Agreement, including the amendments to the PJM Tariff and Operating Agreement, was in the public interest and was thereby approved and accepted for filing and made effective as set forth in the Settlement Agreement.¹

Prior Analyses

The Commission conferred blanket exemptions from offer capping for local market power mitigation on four of the largest interfaces in PJM prior to the development and implementation of the three pivotal supplier test. The current exemption of the Western, Central and Eastern interfaces (reactive limits) in the MAAC Control Zone is based on a study completed in 1997 and submitted as part of PJM's initial application to the Commission.² That study examined HHI statistics for a then recent historical period and determined that concentration was generally not high enough to be a concern for these interfaces. The study did not examine the markets defined by the demand for effective MW to resolve the identified interface constraints and associated incremental MW of effective supply available to meet that demand, but analyzed the total capacity in the areas created by the interfaces, taking account of estimated costs as well as a market definition for total capacity consistent with the delivered price test approach. As a result of data limitations, that study did not account for distribution factor impacts on effective supply or the effective cost of that supply. That study also concluded that local market power was a concern for the local markets created by other transmission constraints.

The current exemption of the APS South Interface is based on an October 2004 report of the PJM Market Monitor. On October 26, 2004 PJM submitted a Report of the PJM Market Monitor Regarding Offer Capping of Major Transmission Constraints in which the PJM Market Monitor concluded that the continued exemption of the Western, Central and Eastern interfaces was supported by competitive analysis as was exemption of the APS South Interface.³ The conclusions of the October report differ from the recommendations in the present report for a number of reasons, primarily that offer capping is now applied in real time based on the results of the three pivotal supplier test that takes account of actual, real-time system conditions including generator availability and transmission system conditions. Given this real-time application of a test for competition, there is no longer a need to make a general determination about the competitiveness of any constraint, including the currently exempt interfaces.

In the October 2004 report, a delivered price test was performed based on supply curves simulated using GE MAPS and representative loads for each constraint analyzed. The supply curve was divided into four quartiles, representing relatively competitive resources within each quartile of the supply curve, for each system load condition. Load duration analysis was used to divide load levels into four quartiles for each constraint where the difference among the four quartiles was the system load and the corresponding system price. The requirement, or demand for, MW levels of control actions was determined by reviewing a range of actual system conditions and selecting a representative high requirement for control actions taken by PJM where these data were available from PJM and

¹ 114 FERC ¶ 61,076.

² *PJM Supporting Companies*, Transmittal Letter, Docket No. ER97-3729-000 (July 14, 1997).

³ See Report of the PJM Market Monitor filed October 26, 2004 in Docket Nos. ER04-539-001, 002, EL04-121-000 at P 27.

using estimates where the data were not available. Within the markets defined in this manner, a pivotal supplier analysis was performed to determine the extent to which one or more suppliers were individually or jointly pivotal in the market to provide required control for the identified major transmission constraints.⁴

The method of analysis performed in the October 2004 report differed in a number of significant ways from the application of the three pivotal supplier test arising from the Settlement Agreement cited above, and as currently defined in the OA and applied by PJM. The October 2004 analysis used a simulation of expected market conditions under a single set of defined circumstances while the current application of the three pivotal supplier test is in real time and is based on actual system conditions. In the October 2004 report, generation was evaluated based on marginal cost while the current application of the three pivotal supplier analysis takes into account actual generation offers. The October 2004 report estimated the definition of the relevant market while the current application of the three pivotal supplier analysis defines the market based on the actual MW available at a price less than or equal to 150 percent of the clearing price for constraint relief. The three pivotal supplier test defined in the OA represents a significant evolution in accuracy because the current application of the test uses real-time data and tests constraints as they actually arise with all the actual system features that exist at the time including transmission constraints, load and generator availability.

Results for All Constraints

Peak Hours

There were a total of 9,753 three pivotal supplier tests applied across 151 constraints during peak hours for the period March 1, 2006 through May 31, 2006.⁵ Of the 151 constraints tested during peak hours, 150 demonstrated market structures which resulted in one or more owners failing the three pivotal supplier test for at least one tested interval. Of the 9,753 tests conducted during peak hours, 9,520 were applied to non-exempt constraints.⁶ Of these 9,520 tests, 2,065, or 22 percent, resulted in one or more suppliers passing the three pivotal supplier test. Under PJM's prior offer mitigation rules, all suppliers would have been subject to offer capping. A summary of these results is presented in Figure 1.

Off-Peak Hours

There were a total of 9,864 tests applied across 99 different constraints during off-peak hours for the period March 1, 2006 through May 31, 2006. Of the 99 constraints tested during off-peak hours, 97 demonstrated market structures which resulted in one or more owners failing the three pivotal supplier test for at least one tested interval. Of the 9,864 tests conducted during off-peak hours, 9,779 were applied to non-exempt constraints. Of these 9,779 tests, 3,219, or 33 percent, resulted in one or more suppliers passing the three pivotal supplier test. Under PJM's prior offer mitigation rules, all suppliers would have been subject to offer capping. A summary of these results is presented in Figure 1.

⁴ Id at P 16.

⁵ Peak hours are defined as weekdays between 0700 and 2300 hrs, excluding NERC holidays.

⁶ Offer price caps currently are not applicable to generation resources used to relieve the Western, Central and Eastern reactive limits in the MAAC Control Zone and APS South Interface.

Figure 1 PJM Application of Three Pivotal Supplier Test to All Constraints

	Peak hours	Off-peak hours
Total tests applied		
All constraints	9,753	9,864
Non-exempt constraints	9,520	9,779
Tests resulting in one or more passing owners		
All constraints	2,243	3,281
Non-exempt constraints	2,065	3,219
Percent of tests resulting in one or more passing owners		
All constraints	23%	33%
Non-exempt constraints	22%	33%

Results for Interfaces

Offer caps currently do not apply to generation resources used to relieve the Western, Central and Eastern reactive limits in the MAAC Control Zone or the APS South Interface. Nonetheless, during the period March 1, 2006 through May 31, 2006, three pivotal supplier test results were calculated for all four currently exempt interfaces.

Interface Testing Results: Peak Hours

Exempt Interfaces

There were a total of 233 three pivotal supplier tests applied to the exempt interfaces during peak hours for the period March 1, 2006 through May 31, 2006. Of the 233 three pivotal supplier tests applied to exempt interfaces during peak hours, 99, or 42 percent of those, resulted in one or more suppliers failing the three pivotal supplier test. Under PJM's current offer mitigation rules, these suppliers were not subject to offer capping. A summary of these results is presented in Figure 2. A breakdown of the results for exempt interfaces is presented in Figure 3. Figure 3 shows that 186, or 80 percent, of the tests applied to exempt interfaces during on-peak periods were applied to the APS South Interface with the remainder applied to the other three exempt interfaces. Figure 3 also shows that 85, or 86 percent, of the three pivotal supplier tests during on-peak periods with one or more failing owners were for the APS South Interface, again with the remainder for the other three exempt interfaces.

Non-Exempt Interfaces

There were a total of 520 tests applied to non-exempt interfaces during peak hours for the period March 1, 2006 through May 31, 2006.⁷ Of the 520 three pivotal supplier tests applied to non-exempt interfaces during peak hours, 343, or 66 percent of those, resulted in one or more suppliers failing the three pivotal supplier test. Under PJM's current offer mitigation

⁷ Non-exempt transfer interfaces are those constraints defined as transfer interfaces and not subject to exemption from offer mitigation per section 6.4.1(d)(i) of the PJM Operating Agreement. Non-exempt transfer interfaces for which the TPS was applied during the study period and included in this analysis are the 5004/5005, Bedington-Black Oak, Kanawha-Matt Funk and PL North transfer interfaces. A list of interfaces used by PJM in RT operations and the Day-Ahead Energy Market may be found at www.pjm.com/markets/energy-market/downloads/20031017-interface-definitions.xls (35 KB).

rules, these suppliers were subject to offer capping. A summary of these results is presented in Figure 2.

Interface Testing Results: Off-Peak Hours

Exempt Interfaces

There were a total of 85 tests applied to exempt interfaces during off-peak hours for the period March 1, 2006 through May 31, 2006. Of the 85 three pivotal supplier tests applied to exempt interfaces during off-peak hours, 44, or 52 percent of those, resulted in one or more suppliers failing the three pivotal supplier test. Under PJM's current offer mitigation rules, these suppliers were not subject to offer capping. A summary of the exempt interface results is presented in Figure 2. A breakdown of the results for exempt interfaces is presented in Figure 3. Figure 3 shows that 70, or 82 percent, of the tests applied to exempt interfaces during off-peak periods were applied to the APS South Interface with the remainder applied to the other three exempt interfaces. Figure 3 also shows that 42, or 95 percent, of the three pivotal supplier tests during off-peak periods with one or more failing owners were for the APS South Interface, again with the remainder for the other three exempt interfaces.

Non-Exempt Interfaces

There were a total of 1,532 tests applied to non-exempt interfaces during off-peak hours for the period March 1, 2006 through May 31, 2006. Of the 1,532 three pivotal supplier tests applied to non-exempt interfaces during off-peak hours, 1,201, or 78 percent of those, resulted in one or more suppliers failing the three pivotal supplier test. Under PJM's current offer mitigation rules, these suppliers were subject to offer capping.

Figure 2 PJM Application of Three Pivotal Supplier Test to Interface Constraints

	Peak hours	Off-peak hours
Total tests applied		
Exempt interfaces	233	85
Non-exempt interfaces	520	1,532
Tests resulting in one or more failed owners		
Exempt interfaces	99	44
Non-exempt interfaces	343	1,201
Percent of tests resulting in one or more failed owners		
Exempt interfaces	42%	52%
Non-exempt interfaces	66%	78%

Figure 3 PJM Application of Three Pivotal Supplier Test to Exempt Interface Constraints

Period	Constraint	Total tests applied	Number of tests with one or more failing owners	Percent of tests with one or more failing owners
Peak	TRANSFER INTERFACE: APSOUTH	186	85	46%
Peak	TRANSFER INTERFACE: CENTRAL	2	1	50%
Peak	TRANSFER INTERFACE: EAST	11	5	45%
Peak	TRANSFER INTERFACE: WEST	34	8	24%
Offpeak	TRANSFER INTERFACE: APSOUTH	70	42	60%
Offpeak	TRANSFER INTERFACE: CENTRAL	0	0	0%
Offpeak	TRANSFER INTERFACE: EAST	0	0	0%
Offpeak	TRANSFER INTERFACE: WEST	15	2	13%

Process and Recommendations

Section 6.4.1(d)(ii) of Schedule 1 of the PJM Operating Agreement states:

"On a quarterly basis, using an analysis no less stringent than the test for suspending offer capping set forth in sections 6.4.1(e) and (f) below, the PJM Market Monitoring Unit will evaluate whether additional interfaces also should be exempt and whether any existing exemptions should be terminated. Considering the recommendations of the PJM Market Monitoring Unit, the Office of the Interconnection shall determine whether to make a filing with the FERC proposing that an additional interface should be exempt or an existing exemption should be terminated. Any change in the exempt status of the interface shall become effective upon FERC acceptance. The Office of the Interconnection shall post a summary of the results of the PJM Market Monitoring Unit's quarterly analyses and the Office of the Interconnection's determination whether to make a filing with the FERC."

Section 6.4.1(e) of the PJM Operating Agreement states in part:

"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."

The PJM Market Monitor recommends that the Commission terminate the exemption from offer capping currently applicable to generation resources used to relieve the Western, Central and Eastern reactive limits in the MAAC Control Zone and the APS South Interface. The PJM Market Monitor recommends that all constraints, including these interfaces, be subject to three pivotal supplier testing as specified in the PJM Operating Agreement. This recommendation is based on two factors.

The current exemption of the West, South and Central interfaces is based on an analysis performed in 1997 and supported by the October 2004 report cited above. The current exemption of the APS South Interface is based on the October 2004 report. Neither analysis was as accurate as the current application of the three pivotal supplier test by PJM. The 1997 analysis was based on HHI and market share results for broad areas of the system and did not incorporate distribution factor impacts or analysis of incremental supply and demand associated with constraints. The October 2004 report was described above.

The primary reason to remove the exemptions for the identified interfaces is that they are no longer necessary given PJM's dynamic implementation of the three pivotal supplier test based on actual market conditions in real time. It is not necessary to make an ex ante decision, about the market structure associated with individual interface constraints, that applies for an extended period. Prior to the implementation of the three pivotal supplier test, all units required to resolve a constraint were offer capped whenever the constraint was binding. For the identified exempt interfaces, this could have resulted in the offer capping of a large number of units even when the relevant market was structurally competitive. That is no longer the case. Under the current PJM dynamic approach, offer capping will be applied only as necessary and will be applied on a non-discriminatory basis for all units operating for all constraints.

The fact that some non-exempt constraints never had any generation resources that failed the three pivotal supplier test during the period analyzed does not lead to the conclusion that such constraints should always be exempt from offer capping for local market power. The same logic applies to currently exempt interface constraints. Even if no generation resources associated with any of the exempt interface constraints failed the three pivotal supplier test during the study period, that does not mean that such interfaces should always be exempt from offer capping for local market power. The fact that one or more generation resources required to resolve these interfaces did fail the three pivotal supplier test at times simply reinforces the point. If the generation resources associated with these interfaces always pass the three pivotal supplier test, there will be no offer capping and conversely if such resources at times fail the three pivotal supplier test, appropriate offer capping will be applied.



Market Monitoring Unit

Analysis of the Three Pivotal Supplier Test: March 1 through August 31, 2006

PJM Market Monitoring Unit
October 18, 2006

Summary

The Market Monitoring Unit (MMU) submits this report in compliance with its obligation to evaluate on a quarterly basis whether any changes in status are appropriate for the exempt and non-exempt interfaces in PJM.

The PJM Operating Agreement (OA) (Schedule 1, Section 6.4.1(d)(i)) states that "offer price caps shall not be applicable to generation resources used to relieve the Western, Central and Eastern reactive limits in the MAAC Control Zone and APS South Interface," subject to the additional OA provision (Schedule 1, Section 6.4.1(d)(ii)) that "on a quarterly basis, using an analysis no less stringent than the test for suspending offer capping set forth in sections 6.4.1(e) and (f) below, the PJM Market Monitoring Unit will evaluate whether additional interfaces also should be exempt and whether any existing exemptions should be terminated." This report is in compliance with the defined MMU's quarterly reporting obligation.

The test for suspending offer capping set forth in the OA Schedule 1, Sections 6.4.1(e) and (f) is the three pivotal supplier test. The three pivotal supplier test is applied by PJM on an ongoing basis in order to determine whether offer capping is required for any constraint not exempt from offer capping. The MMU analyzed the results of the three pivotal supplier tests conducted by PJM for the real-time energy market during the period March 1, 2006 through August 31, 2006. A summary of the results of PJM's application of the three pivotal supplier test is presented for all constraints including interfaces currently exempt from the application of offer mitigation rules and interfaces currently subject to the application of the offer mitigation rules.

As a result of PJM's recent implementation of the three pivotal supplier test in real time, the actual competitive conditions associated with each binding constraint are analyzed in real time as they arise. The three pivotal supplier test replaced the prior approach which was to offer cap all units required to resolve a binding constraint. As a result of the fact that the new approach ensures that offer capping will be applied only when required by market conditions, the MMU recommends that no interfaces or constraints be granted a blanket exemption. The MMU recommends that offer capping be based on the application of the three pivotal supplier test to actual market structures for all constraints, including those interfaces now exempt from offer capping.

Background

By order issued April 18, 2005, the Commission set for hearing, in Docket No. EL04-121-000, PJM's proposal (a) to exempt the APS South Interface from PJM's offer-capping rules and (b) to conduct annual competitive analyses to determine whether additional exemptions from offer capping are warranted.

By order issued July 5, 2005, the Commission also set for hearing, in Docket No. EL03-236-006, PJM's three pivotal supplier test used to determine whether suppliers have market power when units must be called out of merit order in order to resolve transmission constraints. The Commission further set for hearing issues related to the appropriateness of implementing scarcity pricing in PJM. In the July Order, the Commission consolidated Docket No. EL04-121-000 and Docket No. EL03-236-006.

On November 16, 2005 PJM filed a Settlement Agreement resolving all issues set for hearing in the two section 206 proceedings established by the Commission to address certain aspects of PJM's market power mitigation rules including the application of the three

pivotal supplier test, provisions for scarcity pricing, offer caps for frequently mitigated units and competitive issues associated with certain of PJM's internal interfaces. On December 20, 2005, the Presiding Administrative Law Judge certified the Settlement Agreement to the Commission as uncontested. On January 27, 2006 in Docket Nos. EL03-236-006, EL04-121-000, 001 and 002 the Commission ordered that the Settlement Agreement, including the amendments to the PJM Tariff and Operating Agreement, was in the public interest and was thereby approved and accepted for filing and made effective as set forth in the Settlement Agreement.¹

Prior Analyses

The Commission conferred blanket exemptions from offer capping for local market power mitigation on four of the largest interfaces in PJM prior to the development and implementation of the three pivotal supplier test. The current exemption of the Western, Central and Eastern interfaces (reactive limits) in the MAAC Control Zone is based on a study completed in 1997 and submitted as part of PJM's initial application to the Commission.² That study examined HHI statistics for a then recent historical period and determined that concentration was generally not high enough to be a concern for these interfaces. The study did not examine the markets defined by the demand for effective MW to resolve the identified interface constraints and associated incremental MW of effective supply available to meet that demand, but analyzed the total capacity in the areas created by the interfaces, taking account of estimated costs as well as a market definition for total capacity consistent with the delivered price test approach. As a result of data limitations, that study did not account for distribution factor impacts on effective supply or the effective cost of that supply. That study also concluded that local market power was a concern for the local markets created by other transmission constraints.

The current exemption of the APS South Interface is based on an October 2004 report of the PJM Market Monitor. On October 26, 2004 PJM submitted a Report of the PJM Market Monitor Regarding Offer Capping of Major Transmission Constraints in which the PJM Market Monitor concluded that the continued exemption of the Western, Central and Eastern interfaces was supported by competitive analysis as was exemption of the APS South Interface.³ The conclusions of the October report differ from the recommendations in the present report for a number of reasons, primarily that offer capping is now applied in real time based on the results of the three pivotal supplier test that takes account of actual, real-time system conditions including generator availability and transmission system conditions. Given this real-time application of a test for competition, there is no longer a need to make a general determination about the competitiveness of any constraint, including the currently exempt interfaces.

In the October 2004 report, a delivered price test was performed based on supply curves simulated using GE MAPS and representative loads for each constraint analyzed. The supply curve was divided into four quartiles, representing relatively competitive resources within each quartile of the supply curve, for each system load condition. Load duration analysis was used to divide load levels into four quartiles for each constraint where the difference among the four quartiles was the system load and the corresponding system price. The requirement, or demand for, MW levels of control actions was determined by reviewing a range of actual system conditions and selecting a representative high requirement for control actions taken by PJM where these data were available from PJM and

¹ 114 FERC ¶ 61,076.

² *PJM Supporting Companies*, Transmittal Letter, Docket No. ER97-3729-000 (July 14, 1997).

³ See Report of the PJM Market Monitor filed October 26, 2004 in Docket Nos. ER04-539-001, 002, EL04-121-000 at P 27.

using estimates where the data were not available. Within the markets defined in this manner, a pivotal supplier analysis was performed to determine the extent to which one or more suppliers were individually or jointly pivotal in the market to provide required control for the identified major transmission constraints.⁴

The method of analysis performed in the October 2004 report differed in a number of significant ways from the application of the three pivotal supplier test arising from the Settlement Agreement cited above, and as currently defined in the OA and applied by PJM. The October 2004 analysis used a simulation of expected market conditions under a single set of defined circumstances while the current application of the three pivotal supplier test is in real time and is based on actual system conditions. In the October 2004 report, generation was evaluated based on marginal cost while the current application of the three pivotal supplier analysis takes into account actual generation offers. The October 2004 report estimated the definition of the relevant market while the current application of the three pivotal-supplier-analysis defines the market based on the actual MW available at a price less than or equal to 150 percent of the clearing price for constraint relief. The three pivotal supplier test defined in the OA represents a significant evolution in accuracy because the current application of the test uses real-time data and tests constraints as they actually arise with all the actual system features that exist at the time including transmission constraints, load and generator availability.

Results for All Constraints

Peak Hours

There were a total of 37,620 three pivotal supplier tests applied across 345 constraints during peak hours for the period March 1, 2006 through August 31, 2006.⁵ Of the 345 constraints tested during peak hours, all demonstrated market structures which resulted in one or more owners failing the three pivotal supplier test for at least one tested interval. Of the 37,620 tests conducted during peak hours, 37,186 were applied to non-exempt constraints.⁶ Of these 37,186 tests, 4,800, or 13 percent, resulted in one or more suppliers passing the three pivotal supplier test. Under PJM's prior offer mitigation rules, all suppliers would have been subject to offer capping. A summary of these results is presented in Figure 1.

Off-Peak Hours

There were a total of 23,646 tests applied across 196 different constraints during off-peak hours for the period March 1, 2006 through August 31, 2006. Of the 196 constraints tested during off-peak hours, 192 demonstrated market structures which resulted in one or more owners failing the three pivotal supplier test for at least one tested interval. Of the 23,646 tests conducted during off-peak hours, 23,482 were applied to non-exempt constraints. Of these 23,482 tests, 6,893, or 29 percent, resulted in one or more suppliers passing the three pivotal supplier test. Under PJM's prior offer mitigation rules, all suppliers would have been subject to offer capping. A summary of these results is presented in Figure 1.

⁴ Id at P 16.

⁵ Peak hours are defined as weekdays between 0700 and 2300 hrs, excluding NERC holidays.

⁶ Offer price caps currently are not applicable to generation resources used to relieve the Western, Central and Eastern reactive limits in the MAAC Control Zone and APS South Interface.

Figure 1 PJM Application of Three Pivotal Supplier Test to All Constraints

	Peak hours	Off-peak hours
Total tests applied		
All constraints	37,620	23,646
Non-exempt constraints	37,186	23,482
Tests resulting in one or more passing owners		
All constraints	5,100	7,012
Non-exempt constraints	4,800	6,893
Percent of tests resulting in one or more passing owners		
All constraints	14%	30%
Non-exempt constraints	13%	29%

Results for Interfaces

Offer caps currently do not apply to generation resources used to relieve the Western, Central and Eastern reactive limits in the MAAC Control Zone or the APS South Interface. Nonetheless, during the period March 1, 2006 through August 31, 2006, three pivotal supplier test results were calculated for all four currently exempt interfaces.

Interface Testing Results: Peak Hours

Exempt Interfaces

There were a total of 434 three pivotal supplier tests applied to the exempt interfaces during peak hours for the period March 1, 2006 through August 31, 2006. Of the 434 three pivotal supplier tests applied to exempt interfaces during peak hours, 198, or 46 percent of those, resulted in one or more suppliers failing the three pivotal supplier test. Under PJM's current offer mitigation rules, these suppliers were not subject to offer capping. A summary of these results is presented in Figure 2. A breakdown of the results for exempt interfaces is presented in Figure 3. Figure 3 shows that 361, or 83 percent, of the tests applied to exempt interfaces during on-peak periods were applied to the APS South Interface with the remainder applied to the other three exempt interfaces. Figure 3 also shows that 178, or 90 percent, of the three pivotal supplier tests during on-peak periods with one or more failing owners were for the APS South Interface, again with the remainder for the other three exempt interfaces.

Non-Exempt Interfaces

There were a total of 2,383 tests applied to non-exempt interfaces during peak hours for the period March 1, 2006 through August 31, 2006.⁷ Of the 2,383 three pivotal supplier tests applied to non-exempt interfaces during peak hours, 944, or 40 percent of those, resulted in one or more suppliers failing the three pivotal supplier test. Under PJM's current offer

⁷ Non-exempt transfer interfaces are those constraints defined as transfer interfaces and not subject to exemption from offer mitigation per section 6.4.1(d)(i) of the PJM Operating Agreement. Non-exempt transfer interfaces for which the TPS was applied during the study period and included in this analysis are the 5004/5005, Bedington-Black Oak, Kanawha-Matt Funk and PL North transfer interfaces. A list of interfaces used by PJM in RT operations and the Day-Ahead Energy Market may be found at www.pjm.com/markets/energy-market/downloads/20031017-interface-definitions.xls (35 KB).

mitigation rules, these suppliers were subject to offer capping. A summary of these results is presented in Figure 2.

Interface Testing Results: Off-Peak Hours

Exempt Interfaces

There were a total of 164 tests applied to exempt interfaces during off-peak hours for the period March 1, 2006 through August 31, 2006. Of the 164 three pivotal supplier tests applied to exempt interfaces during off-peak hours, 76, or 46 percent of those, resulted in one or more suppliers failing the three pivotal supplier test. Under PJM's current offer mitigation rules, these suppliers were not subject to offer capping. A summary of the exempt interface results is presented in Figure 2. A breakdown of the results for exempt interfaces is presented in Figure 3. Figure 3 shows that 122, or 74 percent, of the tests applied to exempt interfaces during off-peak periods were applied to the APS South Interface with the remainder applied to the other three exempt interfaces. Figure 3 also shows that 72, or 95 percent, of the three pivotal supplier tests during off-peak periods with one or more failing owners were for the APS South Interface, again with the remainder for the other three exempt interfaces.

Non-Exempt Interfaces

There were a total of 2,827 tests applied to non-exempt interfaces during off-peak hours for the period March 1, 2006 through August 31, 2006. Of the 2,827 three pivotal supplier tests applied to non-exempt interfaces during off-peak hours, 1,759, or 62 percent of those, resulted in one or more suppliers failing the three pivotal supplier test. Under PJM's current offer mitigation rules, these suppliers were subject to offer capping.

Figure 2 PJM Application of Three Pivotal Supplier Test to Interface Constraints

	Peak hours	Off-peak hours
Total tests applied		
Exempt interfaces	434	164
Non-exempt interfaces	2,383	2,827
Tests resulting in one or more failed owners		
Exempt interfaces	198	76
Non-exempt interfaces	944	1,759
Percent of tests resulting in one or more failed owners		
Exempt interfaces	46%	46%
Non-exempt interfaces	40%	62%

Figure 3 PJM Application of Three Pivotal Supplier Test to Exempt Interface Constraints

Period	Constraint	Total tests applied	Number of tests with one or more failing owners	Percent of tests with one or more failing owners
Peak	TRANSFER INTERFACE: APSOUTH	361	178	49%
Peak	TRANSFER INTERFACE: CENTRAL	6	3	50%
Peak	TRANSFER INTERFACE: EAST	11	5	45%
Peak	TRANSFER INTERFACE: WEST	56	12	21%
Offpeak	TRANSFER INTERFACE: APSOUTH	122	72	59%
Offpeak	TRANSFER INTERFACE: CENTRAL	10	0	0%
Offpeak	TRANSFER INTERFACE: EAST	0	0	N/A
Offpeak	TRANSFER INTERFACE: WEST	32	4	13%

Process and Recommendations

Section 6.4.1(d)(ii) of Schedule 1 of the PJM Operating Agreement states:

"On a quarterly basis, using an analysis no less stringent than the test for suspending offer capping set forth in sections 6.4.1(e) and (f) below, the PJM Market Monitoring Unit will evaluate whether additional interfaces also should be exempt and whether any existing exemptions should be terminated. Considering the recommendations of the PJM Market Monitoring Unit, the Office of the Interconnection shall determine whether to make a filing with the FERC proposing that an additional interface should be exempt or an existing exemption should be terminated. Any change in the exempt status of the interface shall become effective upon FERC acceptance. The Office of the Interconnection shall post a summary of the results of the PJM Market Monitoring Unit's quarterly analyses and the Office of the Interconnection's determination whether to make a filing with the FERC."

Section 6.4.1(e) of the PJM Operating Agreement states in part:

"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."

The PJM Market Monitor recommends that the Commission terminate the exemption from offer capping currently applicable to generation resources used to relieve the Western, Central and Eastern reactive limits in the MAAC Control Zone and the APS South Interface. The PJM Market Monitor recommends that all constraints, including these interfaces, be subject to three pivotal supplier testing as specified in the PJM Operating Agreement. This recommendation is based on two factors.

The current exemption of the West, South and Central interfaces is based on an analysis performed in 1997 and supported by the October 2004 report cited above. The current exemption of the APS South Interface is based on the October 2004 report. Neither analysis was as accurate as the current application of the three pivotal supplier test by PJM. The 1997 analysis was based on HHI and market share results for broad areas of the system and did not incorporate distribution factor impacts or analysis of incremental supply and demand associated with constraints. The October 2004 report was described above.

The primary reason to remove the exemptions for the identified interfaces is that they are no longer necessary given PJM's dynamic implementation of the three pivotal supplier test based on actual market conditions in real time. It is not necessary to make an ex ante decision, about the market structure associated with individual interface constraints, that applies for an extended period. Prior to the implementation of the three pivotal supplier test, all units required to resolve a constraint were offer capped whenever the constraint was binding. For the identified exempt interfaces, this could have resulted in the offer capping of a large number of units even when the relevant market was structurally competitive. That is no longer the case. Under the current PJM dynamic approach, offer capping will be applied only as necessary and will be applied on a non-discriminatory basis for all units operating for all constraints.

The fact that some non-exempt constraints never had any generation resources that failed the three pivotal supplier test during the period analyzed does not lead to the conclusion that such constraints should always be exempt from offer capping for local market power. The same logic applies to currently exempt interface constraints. Even if no generation resources associated with any of the exempt interface constraints failed the three pivotal supplier test during the study period, that does not mean that such interfaces should always be exempt from offer capping for local market power. The fact that one or more generation resources required to resolve these interfaces did fail the three pivotal supplier test at times simply reinforces the point. If the generation resources associated with these interfaces always pass the three pivotal supplier test, there will be no offer capping and conversely if such resources at times fail the three pivotal supplier test, appropriate offer capping will be applied.



Market Monitoring Unit

Analysis of the Three Pivotal Supplier Test: March 1 through December 31, 2006

PJM Market Monitoring Unit
May 7, 2007

Summary

The Market Monitoring Unit (MMU) submits this report in compliance with its obligation to evaluate on a quarterly basis whether any changes in status are appropriate for the exempt and non-exempt interfaces in PJM.

The PJM Operating Agreement (OA) (Schedule 1, Section 6.4.1(d)(i)) states that "offer price caps shall not be applicable to generation resources used to relieve the Western, Central and Eastern reactive limits in the MAAC Control Zone and APS South Interface," subject to the additional OA provision (Schedule 1, Section 6.4.1(d)(ii)) that "on a quarterly basis, using an analysis no less stringent than the test for suspending offer capping set forth in sections 6.4.1(e) and (f) below, the PJM Market Monitoring Unit will evaluate whether additional interfaces also should be exempt and whether any existing exemptions should be terminated."

These four identified interfaces, the Western, Central, Eastern and AP South Interfaces are thus currently exempt from offer capping and are referred to in this report as the exempt interfaces. These four interfaces are the only exempt interfaces. Interfaces are one type of potential transmission constraints and these four interfaces are the only exempt constraints.

The test for suspending offer capping set forth in the OA Schedule 1, Sections 6.4.1(e) and (f) is the three pivotal supplier test. The three pivotal supplier test is applied by PJM on an ongoing basis in both the day-ahead and real-time energy markets in order to determine whether offer capping is required for any constraints not exempt from offer capping and for any units not exempt from offer capping.¹ The three pivotal supplier test is applied in real time in both the day-ahead and real-time markets. In the day-ahead market, PJM market operators apply the test as they clear the market. In the real-time market, PJM market operators also apply the test as they clear the market.

The MMU analyzed the results of the three pivotal supplier tests conducted by PJM for the real-time energy market during the period March 1, 2006, through December 31, 2006. In this report, for a comprehensive view of the results, the MMU presents the results for the first ten months during which the three pivotal supplier test was applied.² A summary of the results of PJM's application of the three pivotal supplier test is presented for all constraints, including interfaces currently exempt from the application of the offer mitigation rules and interfaces currently subject to the application of the offer mitigation rules.

The MMU could not analyze the results of the three pivotal supplier test for exempt interfaces in the day-ahead market because, in contrast to PJM's approach in the real-time market, PJM does not consistently apply the three pivotal supplier test to these

¹ For additional information on the three pivotal supplier test, see *2006 State of the Market Report*, Volume II, pp. 40 – 55 and Appendix J, "Three Pivotal Supplier Test."

² The three pivotal supplier test was implemented effective March 1, 2006. This report covers the ten month period through December 31, 2006. Subsequent reports will cover calendar quarters.

constraints in the day-ahead market and the results are not saved. As a result, it is not possible for the MMU to analyze the market structure associated with exempt interfaces in the day-ahead market in the same way as the MMU analyzes the market structure associated with exempt interfaces in the real-time market. As an illustration of the importance of extending the analysis to the day-ahead market, the currently exempt interfaces accounted for \$160 million in day-ahead congestion costs in 2006 and \$6 million in balancing congestion costs. In addition, the exempt interfaces were constrained for more hours in the day-ahead market than in the real-time market. During 2006, the exempt interfaces were constrained 2,643 hours in the day-ahead market and 591 hours in the real-time market.³

As a result of PJM's implementation of the three pivotal supplier test, decisions about offer capping are based on real-time analysis of the actual competitive conditions associated with each binding constraint as they occur in both the day-ahead and real-time energy markets. The three pivotal supplier test replaced the prior approach which was to offer cap all units required to resolve a binding constraint.

Recommendations

As a result of the fact that the three pivotal supplier test ensures that offer capping will be applied only when required by market conditions, the MMU recommends that no interfaces or constraints be granted a blanket exemption. The MMU recommends that offer capping be based on the application of the three pivotal supplier test to actual market structures for all constraints in both the day-ahead and real-time energy markets, including those interfaces now exempt from offer capping.

The MMU recommends that three pivotal supplier testing be immediately and consistently applied to all constraints in the clearing of the day-ahead energy market and the results saved, so that the results of the day-ahead market can be replicated and analysis of the day-ahead market results can be performed.

The MMU recommends that PJM cooperate with the MMU to facilitate a complete and thorough review by the MMU of the actual implementation of the three pivotal supplier test in both the day-ahead and real-time markets including a detailed review and testing of the relevant software and operating procedures. Such a review has not been done and such a review is critical to ensure that the test is being properly applied.

³ See 2006 State of the Market Report, Volume II, p. 43.

Background

By order issued April 18, 2005, the United States Federal Energy Regulatory Commission (the Commission or the FERC) set for hearing, in Docket No. EL04-121-000, PJM's proposal (a) to exempt the AP South Interface from PJM's offer-capping rules and (b) to conduct annual competitive analyses to determine whether additional exemptions from offer capping are warranted.

By order issued July 5, 2005, the Commission also set for hearing, in Docket No. EL03-236-006, PJM's three pivotal supplier test used to determine whether suppliers have market power when units must be called out of merit order in order to resolve transmission constraints. The Commission further set for hearing issues related to the appropriateness of implementing scarcity pricing in PJM. In the July order, the Commission consolidated Docket No. EL04-121-000 and Docket No. EL03-236-006.

On November 16, 2005, PJM filed a settlement agreement resolving all issues set for hearing in these two proceedings. On December 20, 2005, the presiding administrative law judge certified the settlement agreement to the Commission as uncontested. On January 27, 2006, in Docket Nos. EL03-236-006, EL04-121-000, 001 and 002 the Commission ordered that the settlement agreement, including the amendments to the PJM Tariff and Operating Agreement, was in the public interest and was thereby approved and accepted for filing and made effective as set forth in the settlement agreement.⁴

Prior Analyses

The Commission conferred blanket exemptions from offer capping for local market power on four of the largest interfaces in PJM, prior to the development and implementation of the three pivotal supplier test. The current exemption of the Western, Central and Eastern Interfaces (reactive limits) in the MAAC Control Zone is based on a study completed in 1997 and submitted as part of PJM's initial application to the Commission.⁵ That study examined Herfindahl-Hirschman Index (HHI) statistics for a then recent historical period and determined that concentration was generally not high enough to be a concern for these interfaces. The study did not examine the markets defined by the demand for effective MW to resolve the identified interface constraints and associated incremental MW of effective supply available to meet that demand, but analyzed the total capacity in the areas created by the interfaces, taking account of estimated costs as well as a market definition for total capacity consistent with the delivered price test approach. As a result of data limitations, that study did not account for distribution factor impacts on effective supply or the effective cost of that supply. That study also concluded that local market power was a concern for the local markets created by other transmission constraints.

⁴ 114 FERC ¶ 61,076.

⁵ *PJM Supporting Companies*, Transmittal Letter, Docket No. ER97-3729-000 (July 14, 1997).

The current exemption of the AP South Interface is based on an October 2004 report of the PJM market monitor. On October 26, 2004, PJM submitted a "Report of the PJM Market Monitor Regarding Offer Capping of Major Transmission Constraints" in which the PJM market monitor concludes that the continued exemption of the Western, Central and Eastern Interfaces was supported by competitive analysis as was exemption of the AP South Interface.⁶ In the October 2004 report, a delivered price test was performed based on supply curves simulated using GE MAPS and representative loads for each constraint analyzed. The supply curve was divided into four quartiles, representing relatively competitive resources within each quartile of the supply curve, for each system load condition. Load duration analysis was used to divide load levels into four quartiles for each constraint where the difference among the four quartiles was the system load and the corresponding system price. The demand for MW levels of control actions was determined by reviewing a range of actual system conditions and selecting a representative high requirement for control actions taken by PJM where these data were available from PJM and using estimates where the data were not available. Within the markets defined in this manner, a pivotal supplier analysis was performed to determine the extent to which one or more suppliers were individually or jointly pivotal in the market to provide required control for the identified major transmission constraints.⁷

The conclusions of the October report differ from the recommendations in this report for a number of reasons, primarily that offer capping is now applied in real time based on the results of the three pivotal supplier test that takes account of actual, real-time system conditions including generator availability and transmission system conditions. Given this real-time application of a test for competition, there is no longer a need to make a general determination about the competitiveness of any constraint, including the currently exempt interfaces.

The 1997 decision to exempt the Western, Central and Eastern Interfaces and the 2004 recommendation to exempt the AP South Interface made sense at the time based on analytical limitations and based on the associated broad brush application of offer capping to all units required to operate to control a constraint. These decisions made sense at the time given that the local markets created by the interfaces were generally structurally competitive based on the analysis at the time, and given that offer capping could not be limited to periods when the local markets were not structurally competitive or to the specific owners who had structural market power and who would otherwise exercise market power.

The three pivotal supplier test defined in the OA represents a significant evolution in accuracy over both the 1997 analysis and the 2004 analysis because the three pivotal supplier test uses real-time data and tests constraints as they actually arise with all the actual system features that exist at the time including transmission constraints, load and generator availability.

⁶ See "Report of the PJM Market Monitor" filed October 26, 2004, in Docket Nos. ER04-539-001, 002, EL04-121-000 at P 27.

⁷ *Id* at P 16.

Three Pivotal Supplier Results for All Constraints: Real-Time Energy Market

The analysis here relies on the output from the application of the three pivotal supplier test in the real-time energy market by PJM. The MMU does not apply the three pivotal supplier test in the execution of either the day-ahead or real-time energy markets. The three pivotal supplier test utilizes software systems developed, operated and maintained solely by PJM. The MMU does not determine any components of the three pivotal supplier test calculation, but relies entirely on the test inputs and results as determined by PJM's market software. The analysis here reflects the actual test outcomes as determined by PJM and utilized in the conduct of the real-time energy market. PJM may apply the three pivotal supplier test for a constraint as frequently as every five minutes or less frequently, depending on actual system conditions. The results reported here reflect the actual frequency with which the test is applied by PJM.

Peak Hours

There were a total of 55,903 three pivotal supplier tests applied across 405 constraints during peak hours for the period March 1, 2006, through December 31, 2006.⁸ Of the 405 constraints tested during peak hours, all but one demonstrated market structures which resulted in one or more owners failing the three pivotal supplier test for at least one tested interval. Of the 55,903 tests conducted during peak hours, 54,524 were applied to non-exempt constraints.⁹ Of these 54,524 peak hour tests, 7,557, or 14 percent, resulted in one or more suppliers passing the three pivotal supplier test. Under PJM's prior offer mitigation rules, all suppliers would have been subject to offer capping. A summary of these results is presented in Table 1.

Off-Peak Hours

There were a total of 39,376 tests applied across 243 different constraints during off-peak hours for the period March 1, 2006, through December 31, 2006. Of the 243 constraints tested during off-peak hours, all but five demonstrated market structures which resulted in one or more owners failing the three pivotal supplier test for at least one tested interval. Of the 39,376 tests conducted during off-peak hours, 38,620 were applied to non-exempt constraints. Of these 38,620 off-peak hour tests, 11,323, or 29 percent, resulted in one or more suppliers passing the three pivotal supplier test. Under PJM's prior offer mitigation rules, all suppliers would have been subject to offer capping. A summary of these results is presented in Table 1.

⁸ Peak hours are defined as weekdays between hours ending 0800 and 2300, excluding NERC holidays.

⁹ Offer price caps currently are not applicable to generation resources used to relieve the Western, Central and Eastern reactive limits in the MAAC Control Zone and AP South Interface.

Table 1 PJM Application of Three Pivotal Supplier Test to All Constraints

	Peak hours	Off-peak hours
Total tests applied		
All constraints	55,903	39,376
Non-exempt constraints	54,524	38,620
Exempt Constraints	1,379	756
Tests resulting in one or more passing owners		
All constraints	8,755	11,990
Non-exempt constraints	7,557	11,323
Exempt Constraints	1,198	667
Percent of tests resulting in one or more passing owners		
All constraints	16%	30%
Non-exempt constraints	14%	29%
Exempt Constraints	87%	88%

Three Pivotal Supplier Results for Interfaces

Offer caps currently do not apply to generation resources used to relieve the Western, Central and Eastern reactive limits in the MAAC Control Zone or the AP South Interface. Nonetheless, during the period March 1, 2006, through December 31, 2006, three pivotal supplier test results for the real-time energy market were calculated by PJM for all four currently exempt interfaces. This section compares the results of the application of the three pivotal supplier test to exempt and non-exempt interfaces in the real-time energy market.

Interface Testing Results: Peak Hours

Exempt Interfaces

There were a total of 1,379 three pivotal supplier tests applied in the real-time energy market to the exempt interfaces during peak hours for the period March 1, 2006, through December 31, 2006. Of the 1,379 three pivotal supplier tests applied to exempt interfaces during peak hours, 269, or 20 percent of those, resulted in one or more suppliers failing the three pivotal supplier test. Under PJM's current offer mitigation rules, these suppliers were not subject to offer capping. A summary of the exempt interface results is presented in Table 2. A breakdown of the results for exempt interfaces is presented in Table 3. Table 3 shows that 491, or 36 percent, of the tests applied to exempt interfaces during on-peak periods were applied to the AP South Interface with the remainder applied to the other three exempt interfaces. Table 3 also shows that 229, or 85 percent, of the three pivotal supplier tests during on-peak periods with one or more failing owners were for the AP South Interface, again with the remainder for the other three exempt interfaces.

Non-Exempt Interfaces

There were a total of 3,898 tests applied in the real-time energy market to non-exempt interfaces during peak hours for the period March 1, 2006, through December 31, 2006.¹⁰ Of the 3,898 three pivotal supplier tests applied to non-exempt interfaces during peak hours, 1,532, or 39 percent of those, resulted in one or more suppliers failing the three pivotal supplier test. Under PJM's current offer mitigation rules, these suppliers were subject to offer capping. A summary of these results is presented in Table 2.

Table 2 PJM Application of Three Pivotal Supplier Test to Non-Exempt and Exempt Interfaces

	Peak hours	Off-peak hours
Total tests applied		
Non-exempt interfaces	3,898	5,241
Exempt interfaces	1,379	756
Tests resulting in one or more failed owners		
Non-exempt interfaces	1,532	2,584
Exempt interfaces	269	146
Percent of tests resulting in one or more failed owners		
Non-exempt interfaces	39%	49%
Exempt interfaces	20%	19%

Interface Testing Results: Off-Peak Hours

Exempt Interfaces

There were a total of 756 tests applied in the real-time energy market to exempt interfaces during off-peak hours for the period March 1, 2006, through December 31, 2006. Of the 756 three pivotal supplier tests applied to exempt interfaces during off-peak hours, 146, or 19 percent of those, resulted in one or more suppliers failing the three pivotal supplier test. Under PJM's current offer mitigation rules, these suppliers were not subject to offer capping. A summary of the exempt interface results is presented in Table 2. A breakdown of the results for exempt interfaces is presented in Table 3. Table 3 shows that 180, or 24 percent, of the 756 tests applied to exempt interfaces during off-peak periods were applied to the AP South Interface with the remainder applied to the other three exempt interfaces. Table 3 also shows that 99, or 68 percent, of the 146 three pivotal supplier tests during off-peak periods with one or more failing owners were

¹⁰ Non-exempt transfer interfaces are those constraints defined as transfer interfaces and not subject to exemption from offer mitigation per section 6.4.1(d)(i) of the PJM Operating Agreement. Non-exempt transfer interfaces for which the three pivotal supplier test was applied during the study period and included in this analysis are the 5004/5005, Bedington-Black Oak, Kanawha-Matt Funk and PL North transfer interfaces. A list of interfaces used by PJM in real-time operations and in the day-ahead energy market may be found at www.pjm.com/markets/energy-market/downloads/20031017-interface-definitions.xls (35 KB).

for the AP South Interface, again with the remainder for the other three exempt interfaces.

Non-Exempt Interfaces

There were a total of 5,241 tests applied in the real-time energy market to non-exempt interfaces during off-peak hours for the period March 1, 2006, through December 31, 2006. Of the 5,241 three pivotal supplier tests applied to non-exempt interfaces during off-peak hours, 2,584, or 49 percent of those, resulted in one or more suppliers failing the three pivotal supplier test. Under PJM's current offer mitigation rules, these suppliers were subject to offer capping.

Results for Regional Constraints

~~Regional constraints are constraints that occur on the 500 kV system. The exempt and non-exempt interfaces are a subset of regional constraints. For comparison, three pivotal supplier test results are presented for non-exempt regional constraints which experienced 100 or more constrained hours during the period March 1, 2006, through December 31, 2006.~~

In 2006, several regional transmission constraints occurred for more than 100 hours in the real-time energy market. The Kammer 765/500 kV transformer, along with four interface constraints, the 5004/5005, AP South, Bedington-Black Oak and the Western Interfaces all experienced more than 100 hours of congestion in the real-time energy market in 2006.¹¹ The three pivotal supplier test was applied to all of these constraints. The AP South and Western Interfaces are two of the four interfaces for which generation owners are exempt from offer capping.

Table 3 includes information on the three pivotal supplier test results for the regional constraints with more than 100 hours of congestion in the real-time energy market in 2006 plus the two exempt interfaces with less than 100 hours of congestion.¹² For the listed regional constraints that are not exempt, the percentage of tested intervals resulting in one or more owners passing ranged from 79 percent to 88 percent while 25 percent to 34 percent of the tests showed one or more owners failing. For the AP South and Western Interfaces (both with more than 100 hours of congestion), which are exempt from offer capping, the percentage of tested intervals resulting in one or more owners passing ranged from 64 percent to 99 percent while 3 percent to 55 percent of the tests showed one or more owners failing.

¹¹ The 5004/5005 Interface is comprised of two 500 kV lines, which include the Keystone-Juniata 5004 and the Conemaugh-Juniata 5005. These two lines are located between central and western Pennsylvania.

¹² The number of tests with one or more failing owners plus the number of tests with one or more passing owners can exceed the total number of tests applied. A single test can result in one or more owners passing and one or more owners failing. In such a case, the interval would be counted as including one or more passing owners and one or more failing owners.

The remaining two exempt interfaces, the Eastern and Central Interfaces, occurred for fewer than 100 hours. The Eastern Interface constraint occurred for 11 hours in 2006, while the Central Interface constraint occurred for 15 hours in 2006.¹³ Table 3 shows that for these two interfaces the percentage of tested intervals resulting in one or more owners passing ranged from 60 percent to 100 percent while 25 percent to 40 percent of the tests showed one or more owners failing during peak periods and no owners failing during off-peak periods.

Table 3 PJM Application of Three Pivotal Supplier Test to Regional Constraints

Constraint	Period	Total Tests Applied	Tests with One or	Percent Tests	Tests with One	Percent Tests
			More Passing	with One or More	or More Failing	with One or More
			Owners	Passing Owners	Owners	Failing Owners
5004/5005 Interface	Peak	863	705	82%	253	29%
	Off Peak	209	183	88%	53	25%
Bedington - Black Oak	Peak	2,622	2,072	79%	889	34%
	Off Peak	3,254	2,708	83%	980	30%
Kammer	Peak	627	520	83%	194	31%
	Off Peak	925	763	82%	302	33%
AP South	Peak	491	327	67%	229	47%
	Off Peak	180	116	64%	99	55%
Western	Peak	852	846	99%	28	3%
	Off Peak	566	541	96%	47	8%
Central	Peak	16	13	81%	4	25%
	Off Peak	10	10	100%	0	0%
Eastern	Peak	20	12	60%	8	40%
	Off Peak	NA	NA	NA	NA	NA

Results for Regional Constraints: Additional Details

Additional information is provided for each of the regional constraints that occurred for more than 100 hours in 2006 plus the two exempt interfaces with less than 100 hours of congestion, including the average MW required to relieve a constraint, the average supply available, the average number of owners included in each test and the average number of owners that passed or failed each test.

Table 4 shows that, on average, during 2006 peak periods, the local markets created by the 5004/5005 Interface and the Kammer transformer had an average of 17 owners with available supply during the peak period, of which an average of 14 passed the three pivotal supplier test for the 5004/5005 Interface and an average of 13 passed the three

¹³ See 2006 State of the Market Report, Volume II, Section 7, "Congestion," at Table 7-12, "Regional constraints summary (by facility): Calendar years 2005 and 2006," p. 281.

pivotal supplier test for the Kammer transformer.¹⁴ The local market created by Bedington-Black Oak had an average of 12 owners with available supply during on-peak and off-peak hours of which an average of nine owners passed the three pivotal supplier test. The local market created by AP South had an average of 16 owners with available supply during on-peak hours and an average of 15 during off-peak hours, of which 10 owners passed during on-peak periods and nine owners passed during off-peak periods. The local market created by the Western Interface had an average of 17 owners with available supply during on-peak hours and an average of 16 during off-peak hours, of which all 17 owners passed during on-peak periods and 15 owners passed during off-peak periods.

Table 4 Three Pivotal Supplier Test Results for Regional Constraints – Additional Details: March 1, to December 31, 2006

Constraint	Period	Average Constraint Relief (MW)	Average Effective Supply (MW)	Average Number Owners	Average Number Owners Passing	Average Number Owners Failing
5004/5005 Interface	Peak	110	397	17	14	3
	Off Peak	107	376	17	14	3
Bedington - Black Oak	Peak	57	220	12	9	3
	Off Peak	63	239	12	9	2
Kammer	Peak	83	285	17	13	4
	Off Peak	77	301	15	12	3
AP South	Peak	101	271	16	10	6
	Off Peak	97	306	15	9	6
Western	Peak	138	829	17	17	0
	Off Peak	140	739	16	15	1
Central	Peak	150	1,017	20	20	0
	Off Peak	177	722	18	14	4
Eastern	Peak	209	703	14	11	3
	Off Peak	NA	NA	NA	NA	NA

The remaining two exempt interfaces, the Eastern and Central Interfaces, occurred for fewer than 100 hours. Table 4 shows that, on average, the local market created by the Eastern Interface had 14 owners during peak periods of which 11 passed the test. The Eastern Interface was not constrained during off-peak periods in 2006. The local market created by the Central Interface had an average of 20 owners with available supply during on-peak hours and an average of 18 during off-peak hours, of which all 20 owners passed during on-peak periods and 14 owners passed during off-peak periods.

¹⁴ The average number of owners passing and the average number of owners failing are rounded to the nearest whole number and may not sum to the average number of owners, also rounded to the nearest whole number.

Process and Recommendations

Section 6.4.1(d)(ii) of Schedule 1 of the PJM Operating Agreement states:

On a quarterly basis, using an analysis no less stringent than the test for suspending offer capping set forth in sections 6.4.1(e) and (f) below, the PJM Market Monitoring Unit will evaluate whether additional interfaces also should be exempt and whether any existing exemptions should be terminated. Considering the recommendations of the PJM Market Monitoring Unit, the Office of the Interconnection shall determine whether to make a filing with the FERC proposing that an additional interface should be exempt or an existing exemption should be terminated. Any change in the exempt status of the interface shall become effective upon FERC acceptance. The Office of the Interconnection shall post a summary of the results of the PJM Market Monitoring Unit's quarterly analyses and the Office of the Interconnection's determination whether to make a filing with the FERC.

Section 6.4.1(e) of the PJM Operating Agreement states in part:

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.

The PJM market monitor recommends that the Commission terminate the exemption from offer capping currently applicable to generation resources used to relieve the Western, Central and Eastern reactive limits in the MAAC Control Zone and the AP South Interface. The PJM market monitor recommends that all constraints, including these interfaces, be subject to three pivotal supplier testing as specified in the PJM Operating Agreement. This recommendation is based on two factors.

The current exemption of the Western, Eastern and Central Interfaces is based on an analysis performed in 1997 and supported by the October 2004 report cited above. The current exemption of the AP South Interface is based on the October 2004 report. Neither analysis was as accurate as the current application of the three pivotal supplier test by PJM. The 1997 analysis was based on HHI and market share results for broad areas of the system and did not incorporate distribution factor impacts or analysis of incremental supply and demand associated with constraints. The October 2004 report was described above.

The primary reason to remove the exemptions for the identified interfaces is that they are no longer necessary given PJM's dynamic implementation of the three pivotal supplier test based on actual market conditions in real time. It is not necessary to make an *ex ante* decision about the market structure associated with individual interface constraints that applies for an extended period. Prior to the implementation of the three pivotal supplier test, all units required to resolve a constraint were offer capped whenever the constraint was binding. For the identified exempt interfaces, this could have resulted in the offer capping of a large number of units even when the relevant

market was structurally competitive. That is no longer the case. Under the current PJM dynamic approach, offer capping will be applied only as necessary and will be applied on a non-discriminatory basis for all units operating for all constraints.

The fact that some non-exempt constraints never had any generation resources that failed the three pivotal supplier test during the period analyzed does not lead to the conclusion that such constraints should always be exempt from offer capping for local market power. The same logic applies to currently exempt interface constraints. Even if no generation resources associated with any of the exempt interface constraints failed the three pivotal supplier test during the study period, that does not mean that such interfaces should always be exempt from offer capping for local market power. The fact that one or more generation resources required to resolve these interfaces did fail the three pivotal supplier test at times simply reinforces the point. If the generation resources associated with these interfaces always pass the three pivotal supplier test, there will be no offer capping and conversely if such resources at times fail the three pivotal supplier test, appropriate offer capping will be applied.

Local market power is clearly defined in the PJM Tariff and the appropriate local market power mitigation is also clearly defined in the PJM Tariff. The definition of local market power should apply to all constraints and the appropriate market power mitigation should also apply to all constraints.

The MMU recommends that three pivotal supplier testing be immediately and consistently applied to all constraints in the clearing of the day-ahead energy market and the results saved, so that analysis of the day-ahead market results can be performed.

The MMU recommends that PJM cooperate with the MMU to facilitate a complete and thorough review by the MMU of the actual implementation of the three pivotal supplier test in both the day-ahead and real-time markets including a detailed review of the relevant software and operating procedures. Such a review has not been done, and it is critical to ensure that the test is being properly applied.

Bowring, Joseph

From: Bowring, Joseph
Sent: Friday, January 05, 2007 6:00 PM
To: Scheidecker, Paul
Subject: APSouth

I suggested to Dean yesterday that he sit down with you and the two of you jointly develop a method for approaching the analysis. I indicated that it did not make sense to look at the operating units when the TPS was run and suggested that it would be better to look at the mark up of the units in the incremental supply curve. Try giving him a call on Monday to see if he is receptive to the idea of doing something together. I told him that our goal was not to attack him and that it would make more sense to develop a joint approach that we all agreed with.
He agreed that it made sense.

Bowring, Joseph

From: Bowring, Joseph
Sent: Tuesday, January 09, 2007 12:40 PM
To: Kelly, Susan
Cc: Ott, Andy
Subject: RE: Progress on Advance Materials for February 6, 2007 BOM

At the February 6 CMC meeting, I plan to review highlights of the draft State of the Market Report, which will have been distributed on January 31. There will therefore be no advance materials on the SOM.

Other relevant topics include the regulation market and the interface pricing issues. Andy and I need to coordinate on these issues. We can submit dueling documents or we can submit documents together which include both perspectives or we can choose to submit no documents. We should do whatever Andy prefers.

-----Original Message-----

From: Kelly, Susan
Sent: Monday, January 08, 2007 3:01 PM
To: Bowring, Joseph; Bastian, Jeff; Bresler, Frederick S. (Stu) III; Bladen, Jeffrey M.; Williams, Stanley; Ogur, Serhan
Subject: Re: Progress on Advance Materials for February 6, 2007 BOM

Hello everyone -- kind of quiet out there....everybody working hard on their advance materials that Andy needs to see pretty much by COB this Wed., 1/10 to adhere to the review schedule going up the line?

P.S. Don't shoot the messenger.

Thanks,
 The Messenger
 8214

-----Original Message-----

From: Ott, Andy
Sent: Monday, January 08, 2007 2:59 PM
To: Kelly, Susan
Subject: FW: February 6, 2007 CMC Materials

-----Original Message-----

From: Kelly, Susan
Sent: Wednesday, January 03, 2007 12:17 PM
To: Bowring, Joseph; Bastian, Jeff; Bresler, Frederick S. (Stu) III; Bladen, Jeffrey M.; Williams, Stanley; Ogur, Serhan
Cc: Ott, Andy; Noonan, Arlene
Subject: February 6, 2007 CMC Materials

Hello everyone--

Advance materials for the February 2007 CMC meeting, including draft blue sheets (if necessary), memos, background reports and supporting documents are due to Andy no later than COB next Wednesday, January 10, 2007 (so that he may adhere to Nora's required review date of 1/12/07). The draft CMC Agenda and templates are attached for your convenience. **Please use these updated templates for your materials, as they contain the 2007 PJM copyright.**

Please save as a new document in DOCS and forward your materials in DOCS reference format to Andy. Please make sure you have granted access to **Board/Committee Executives, Board Review Team and Board/Committee Contacts groups.**

Thank you.

Sue

8214

Bowring, Joseph

From: Ott, Andy
Sent: Thursday, January 11, 2007 7:26 AM
To: Bowring, Joseph; Kelly, Susan
Cc: Swimm, Nora
Subject: RE: Progress on Advance Materials for February 6, 2007 BOM
Follow Up Flag: Follow up
Due By: Thursday, January 11, 2007 12:00 PM
Flag Status: Flagged

Joe

you need to have a presentation on the SOM highlights review and you will need to do a dry run with Toby and Nora on 1/24 and a final dry run with PGH/AAZ on 1/26.

As we discussed, I had not planed on covering either the regulation or interface pricing times at this upcoming meeting

-----Original Message-----

From: Bowring, Joseph
Sent: Tuesday, January 09, 2007 12:40 PM
To: Kelly, Susan
Cc: Ott, Andy
Subject: RE: Progress on Advance Materials for February 6, 2007 BOM

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Thank you.
Sue
8214

Bowring, Joseph

From: Ott, Andy
Sent: Monday, January 22, 2007 1:52 PM
To: Bowring, Joseph
Subject: APSOUTH Interface Analysis



PJMDocs-#403102
-v2-APSOUTH_Int...

Bowring, Joseph

From: Ott, Andy
Sent: Monday, January 22, 2007 9:24 PM
To: Bowring, Joseph
Subject: FW: APSOUTH Unit Bidding - Markup

Joe

here is the gen offer behavior from the APsouth interface analysis with the results displayed as price offer markup over cost offer.

I do not see anything significant here

-----Original Message-----

From: Hartung, Dean
Sent: Monday, January 22, 2007 3:50 PM
To: Ott, Andy
Cc: Bresler, Frederick S. (Stu) III; Marcino, Angelo N.; Carroll, Rebecca
Subject: FW: APSOUTH Unit Bidding - Markup

Andy,
Attached are the plots for the "markup" analysis. As you explained, it is the ratio of the price to cost for the units. Let me know if you want these plots included in your presentation.

-----Original Message-----

From: Marcino, Angelo N.
Sent: Monday, January 22, 2007 3:46 PM
To: Hartung, Dean
Subject: APSOUTH Unit Bidding - Markup

Dean,

Attached are the markup plots for the 7 units.

Thanks,

Angelo

Bowring, Joseph

From: Bowring, Joseph
Sent: Monday, January 22, 2007 2:02 PM
To: Scheidecker, Paul
Subject: FW: APSOUTH Interface Analysis



PJMDOCS-#403102
-v2-APSOUTH_Int...
yi

Please update me on the status of the mark up analyses by Bridgid and Tom Z for APS south.
Andy wants to discuss this week.

This is for when you have a chance - I know you are with your family.

Thanks

-----Original Message-----

From: Ott, Andy
Sent: Monday, January 22, 2007 1:52 PM
To: Bowring, Joseph
Subject: APSOUTH Interface Analysis

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, January 24, 2007 11:55 AM
To: Scheidecker, Paul; Haas, Howard
Subject: FW: APSOUTH Interface Analysis



PJMDOCS-#403102
-v2-APSOUTH_Int..

lease take a look.
You and Howard and I should talk.
Andy wants to talk today also.
Has Dean told what you did in his analysis?

~~-----Original Message-----~~
From: Ott, Andy
Sent: Monday, January 22, 2007 1:52 PM
To: Bowring, Joseph
Subject: APSOUTH Interface Analysis

Bowring, Joseph

From: Scheidecker, Paul
Sent: Wednesday, January 24, 2007 11:05 AM
To: Bowring, Joseph
Subject: FW: PJMDOCS-#403102-v2-APSOUTH_Interface_Analysis.PPT



PJMDOCS-#403102
-v2-APSOUTH_Int...

oe,

FYI - I'm meeting with Dean tomorrow morning to discuss.

Thanks,

Paul

-----Original Message-----

From: Hartung, Dean
Sent: Wednesday, January 24, 2007 11:02 AM
To: Scheidecker, Paul
Subject: PJMDOCS-#403102-v2-APSOUTH_Interface_Analysis.PPT

Paul,

Attached is the presentation for the APSouth exempt interface evaluation. Please let me know when you have some time to discuss.

PJMDOCS-#403102-v2-APSOUTH_Interface_Analysis.PPT

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, January 24, 2007 11:53 AM
To: Haas, Howard
Subject: FW: APSOUTH Unit Bidding - Markup

-----Original Message-----

From: Ott, Andy
Sent: Monday, January 22, 2007 9:24 PM
To: Bowring, Joseph
Subject: FW: APSOUTH Unit Bidding - Markup

Joe

here is the gen offer behavior from the APSouth interface analysis with the results displayed as price offer markup over cost offer.

I do not see anything significant here

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Sent: Monday, January 22, 2007 3:50 PM
To: Ott, Andy
Cc: Bresler, Frederick S. (Stu) III; Marcino, Angelo N.; Carroll, Rebecca
Subject: FW: APSOUTH Unit Bidding - Markup

Andy,
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-----Original Message-----

From: Marcino, Angelo N.
Sent: Monday, January 22, 2007 3:46 PM
To: Hartung, Dean
Subject: APSOUTH Unit Bidding - Markup

Dean,

Attached are the markup plots for the 7 units.

Thanks,

Angelo

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, January 24, 2007 1:10 PM
To: Scheidecker, Paul; Haas, Howard
Subject: RE: APSOUTH Interface Analysis

Paul - can you talk sometime in the next hour or so?

-----Original Message-----

From: Bowring, Joseph
Sent: Wednesday, January 24, 2007 11:55 AM
To: Scheidecker, Paul; Haas, Howard
Subject: FW: APSOUTH Interface Analysis

~~Please take a look.~~

You and Howard and I should talk.
Andy wants to talk today also.
Has Dean told what you did in his analysis?

-----Original Message-----

From: Ott, Andy
Sent: Monday, January 22, 2007 1:52 PM
To: Bowring, Joseph
Subject: APSOUTH Interface Analysis

Bowring, Joseph

From: Scheidecker, Paul
Sent: Wednesday, January 24, 2007 11:05 AM
To: Bowring, Joseph
Subject: FW: PJMDOCS-#403102-v2-APSOUTH_Interface_Analysis.PPT



PJMDOCS-#403102
-v2-APSOUTH_Int..
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FYI - I'm meeting with Dean tomorrow morning to discuss.

Thanks,

Paul

-----Original Message-----

From: Hartung, Dean
Sent: Wednesday, January 24, 2007 11:02 AM
To: Scheidecker, Paul
Subject: PJMDOCS-#403102-v2-APSOUTH_Interface_Analysis.PPT

Paul,
Attached is the presentation for the APSouth exempt interface evaluation. Please let me know when you have some time to discuss.

PJMDOCS-#403102-v2-APSOUTH_Interface_Analysis.PPT

Bowring, Joseph

From: Zadlo, Thomas F.
Sent: Wednesday, January 24, 2007 2:37 PM
To: Bowring, Joseph; Haas, Howard; Scheidecker, Paul
Subject: apsouth.xls version 4

Includes revisions requested by Howard, specifically that once a unit is tested, it will appear on the list any time it was marginal during that day after the test hour.

Bowring, Joseph

From: Haas, Howard
Sent: Thursday, January 25, 2007 2:42 PM
To: Bowring, Joseph
Subject: APSouth Presentation

Bowring, Joseph

From: Bowring, Joseph
Sent: Thursday, January 25, 2007 6:08 PM
To: Cummings, Bridgid M.
Cc: Haas, Howard; Scheidecker, Paul
Subject: More mark up

Bridgid,

Can you do the following additional analysis of mark ups for the units in Paul's sample of units related to the AP South constraint?

Let me know if you have more time critical things to do.

-
- Start with the set of units that Paul identified (failed the TPS test for AP south)
 - Calculate the average mark up for the summer of 2005 for each unit (area method) (June, July, August)
 - Compare the mark up for each unit on each day of the summer of 2006 with the 2005 summer average and count each day for each unit for which the 2006 mark up exceeded the 2005 average markup by greater than or equal to 10% for each unit

Thanks,
Joe

Bowring, Joseph

From: Haas, Howard
Sent: Thursday, January 25, 2007 10:10 AM
To: Bowring, Joseph
Subject: RE: AP South

Working on now.

I have koonz providing LMP change (from slide 7) ^ zone load in the hour to put the LMPs into perspective.

Paul is still running the code to get the failing participants by test.

~~Tom has made the changes to his code. He has numbers based on tests with one or more failures using the SOM style mark-up. He is waiting for the data from Paul for the next run.~~

Howard

-----Original Message-----

From: Bowring, Joseph
Sent: Thursday, January 25, 2007 10:04 AM
To: Haas, Howard
Subject: AP South

I will need slides by late morning, as we discussed.
I have Andy very anxious about all this.

Bowring, Joseph

From: Haas, Howard
Sent: Thursday, January 25, 2007 2:47 PM
To: Haas, Howard; Bowring, Joseph
Subject: RE: APSouth Presentation

This one

-----Original Message-----

From: Haas, Howard
Sent: Thursday, January 25, 2007 2:42 PM
To: Bowring, Joseph
Subject: APSouth Presentation

Bowring, Joseph

From: Scheidecker, Paul
Sent: Thursday, January 25, 2007 11:29 AM
To: Bowring, Joseph; Haas, Howard
Cc: Cummings, Bridgid M.
Subject: FW: AP South

Joe,

Bridgid did an amazing job with this!

Attached is the mark-up analysis for AP South. The data includes units that were part of the effective supply curve for AP South as determined by the TPS test, from June 1, 2006 through August 31, 2006. It compares the price and cost offers for the units using the "area under the curve" methodology.

This clearly demonstrates the following points:

- There is a difference between the price and cost offers for units available to provide relief to AP South.
- This mark-up is often significant
- These units are eligible to be marginal resources
- Market outcomes would be effected by a decision to operate these units on cost vs. price

Paul

-----Original Message-----

From: Cummings, Bridgid M.
Sent: Thursday, January 25, 2007 11:18 AM
To: Scheidecker, Paul
Subject: RE: AP South

Paul,

Attached are the markups for the units you provided Tuesday. The markup is calculated as (Price-Cost)/Cost. All calculations were based on the price schedule economic max and min mws (for example, if the eco max for the cost schedule was 90 and the eco max for price schedule was 95, the markup was calculated up to the 95 MW). Some units had eco min equal to eco max, if that was the case, the markup was calculated at the economic max, and is marked such in the column Markup_Calculation. All other markups were calculated as the area under the curves and are indicated as such.

Some of the units do not have a markup, and I provided a reason as to why the unit did not have a markup for that day. That column is 'Reason_For_No_Markup'. Reasons include being exempt from offer capping, no price schedule, no cost curve, and two cases where eco min was greater than eco max.

I also included the number of hours the unit was must_run for that day.

Let me know if there are any questions.

Thanks!

B

-----Original Message-----

From: Scheidecker, Paul
Sent: Tuesday, January 23, 2007 1:53 PM
To: Cummings, Bridgid M.
Subject: AP South

Bridgid,

Attached is a list of distinct unitids tested for AP South, for each day of the period Jun 1 2006 through 31 Aug 2006. Since offers may not be changed intra-day, I simply selected each unique occurrence of a unitid for a given day. What Joe wants to do is to look at the mark-up of these units using your "area under the curve" methodology.

Thanks,



apsouth_markup_c
alculations.sa...



APSouth_markup_c
alculations.xl...

Paul

Bowring, Joseph

From: Ott, Andy
Sent: Friday, January 26, 2007 2:14 PM
To: Bowring, Joseph; Haas, Howard
Subject: FW: Additional APSouth analysis

Joe, Howard

I asked the guys to get me a list of the TPS results for each of the days where we had found an impact. The attached spreadsheet provides the information. I will be proposing to use this table in the presentation to illustrate that we need to look into this further before making any conclusion.

Also FYI, the four hours we discussed did not have the unit as marginal so the impact will be small because the units were CTs

-----Original Message-----

From: Hartung, Dean
Sent: Friday, January 26, 2007 1:32 PM
To: Ott, Andy; Bresler, Frederick S. (Stu) III
Cc: Marcino, Angelo N.
Subject: Additional APSouth analysis

Andy,

The attached shows the number of times the TPS failed, passed and switched for the 5 days.

We also evaluated the 4 hours necessary to determine whether the marginal unit for the APSouth constraint was needed in the going forward hours.

The results are that none of the marginal units that were turned on in the UDS analysis were marginal in the future hours, therefore their impact on prices were negligible.

Bowring, Joseph

From: Cummings, Bridgid M.
Sent: Friday, January 26, 2007 1:10 PM
To: Bowring, Joseph
Cc: Haas, Howard; Scheidecker, Paul
Subject: RE: More mark up

The attached spreadsheet has the number of days a unit's 2006 markup for a specific day was greater than or equal to $|.1|$ of the 2005 markup.

Column Descriptions:

The NUM_POSSIBLE_OBS column is the number of possible observations for that unit - which means: the unit failed that day and had a non-null markup for both 2005 and 2006. Reasons for no markup include no data, no cost curve or cost curve of 0, no price schedule, and eco min greater than eco max.

The 'NUM OBS WITH CHANGE OF .1' column is the number of days the difference of the $|2006 \text{ markup} - 2005 \text{ markup}|$ was greater than or equal to $.1$.

The 'NUM OBS WHERE MARKUP2006 GT MARKUP2005' column is the number of days the 2006 markup was greater than the 2005 markup - representing an increase in the markup from 2005 to 2006.

The 'NUM OBS WHERE MARKUP2006 LT MARKUP2005' column is the number of days the 2006 markup was less than the 2005 markup - representing a decrease in the markup from 2005 to 2006.

Summary:

Of the 654 units sampled, 390 had a change from 2005 to 2006 of $|.1|$ or higher for at least one of the days for which the unit failed. It is more common that there was a decrease from the 2005 markup to the 2006 markup.

Bridgid

-----Original Message-----

From: Bowring, Joseph
Sent: Thursday, January 25, 2007 6:08 PM
To: Cummings, Bridgid M.
Cc: Haas, Howard; Scheidecker, Paul
Subject: More mark up

Bridgid,

Can you do the following additional analysis of mark ups for the units in Paul's sample of units related to the AP South constraint?

Let me know if you have more time critical things to do.

- Start with the set of units that Paul identified (failed the TPS test for AP south)
- Calculate the average mark up for the summer of 2005 for each unit (area method) (June, July, August)
- Compare the mark up for each unit on each day of the summer of 2006 with the 2005 summer average and count each day for each unit for which the 2006 mark up exceeded the 2005 average

5/31/2007

SMM - 00105

markup by greater than or equal to 10% for each unit

Thanks,
Joe

Bowring, Joseph

From: Zadlo, Thomas F.
Sent: Friday, January 26, 2007 8:15 AM
To: Bowring, Joseph
Subject: FW: Interface fun

-----Original Message-----

From: Haas, Howard
Sent: Thursday, January 25, 2007 6:04 PM
To: Zadlo, Thomas F.
Subject: Interface fun

I need you to rerun the analysis with another screen:

If the unit's owner failed the test, was on P, and the unit's schedule was above SMP.

Find out what it would take to see if the unit was on and running before the test as well. If committed on price before the test, we want to dump schedule switching impacts.

Call me or Joe if you have any questions.

Howard

Bowring, Joseph

From: Haas, Howard
Sent: Saturday, January 27, 2007 9:32 AM
To: Bowring, Joseph
Subject: Interface Test

In each scenario: There are three suppliers in the market: X, Y, Z. All have the same marginal cost structure. Demand is variable, but predictable. Suppliers can put in one offer for the year.

Scenario A: There is no mitigation (no TPS, no capping for constraints, etc).

Scenario B: There is a TPS test on localized markets caused by constraints. There are four constraints. When out of merit for a constraint, given the number of suppliers, the participants will fail and be capped at cost. Over the year (considering all hours) each participant faces a 15% chance of being called out of merit order for a constraint (15% of hours are capped for each participant).

Scenario C: The TPS test on localized markets is removed on one of the 4 constraints. There is now a 12% chance of being capped (12% of hours will be capped) for being called out of merit order for a constraint.

100 Point question: Are there incentives to offer energy over cost in scenario X, Y, and Z? (10 pts) Do the incentives vary over scenario X, Y, and Z for the participants? (20 pts) Will it be rational for the participants to change their bid strategy (mark-up) depending on the scenario? (50 pts) Why or why not? (20 pts).

I'll send the answer key later.

Howard

P.S. Sleep is wonderful.

-----Original Message-----

From: Bowring, Joseph
Sent: Saturday, January 27, 2007 7:31 AM
To: Haas, Howard
Subject: FW: slides

fyi

-----Original Message-----

From: Ott, Andy
Sent: Saturday, January 27, 2007 7:30 AM
To: Bowring, Joseph
Subject: RE: slides

attached are the slides I had at the meeting yesterday afternoon. I will be cleaning these up to forward to AAZ tomorrow.

I will copy you on that version also .

-----Original Message-----

5/31/2007

SMM - 00108

From: Bowring, Joseph
Sent: Friday, January 26, 2007 4:09 PM
To: Ott, Andy
Subject: slides

Please email me your slides - thanks

Bowring, Joseph

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From: Haas, Howard
Sent: Sunday, January 28, 2007 7:58 PM
To: Bowring, Joseph
Subject: RE: Please review 'MMU response to Markets APSouth1'

I've reviewed the attached document. Chart has been corrected (the failed flag got tripped on one of the generator types when I was merging data). Sorry about that.

Howard

Bowring, Joseph

From: Haas, Howard
Sent: Sunday, January 28, 2007 5:07 PM
To: Bowring, Joseph
Subject: RE: next iteration

I've reviewed the attached document. Some minor tweaks...should be highlighted (typos). Looks good.

Howard

Bowring, Joseph

From: Haas, Howard
Sent: Saturday, January 27, 2007 1:18 PM
To: Haas, Howard; Bowring, Joseph
Subject: Interface Test: The answer key

-----Original Message-----

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Sent: Saturday, January 27, 2007 9:32 AM
To: Bowring, Joseph
Subject: Interface Test

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From: Ott, Andy
Sent: Saturday, January 27, 2007 7:32 AM
To: Bowring, Joseph
Cc: Bresler, Frederick S. (Stu) III; Hartung, Dean; Haas, Howard
Subject: RE: slides

there are no revised impact numbers because in the four hours we discussed , the CTs were not marginal so there was no price impact . The only impact would have been an OR payment to the unit but that is only a few thousand dollars

-----Original Message-----

From: Bowring, Joseph
Sent: Friday, January 26, 2007 4:15 PM
To: Ott, Andy
Cc: Bresler, Frederick S. (Stu) III; Hartung, Dean; Haas, Howard
Subject: RE: slides

In addition, let me know when we will get the revised dollar impact numbers.

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Subject: slides

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To: Ott, Andy
Subject: slides

Please email me your slides - thanks

Bowring, Joseph

From: Bowring, Joseph
Sent: Saturday, January 27, 2007 3:50 PM
To: Haas, Howard
Subject: RE: Interface Test: The answer key

I will probably not look until tomorrow.
Let me know when you are available - I expect to get an early start if you are up, but anytime is fine.

-----Original Message-----

From: Haas, Howard
Sent: Saturday, January 27, 2007 1:27 PM
To: Haas, Howard; Bowring, Joseph
Subject: RE: Interface Test: The answer key

I countered the oscillation "observation"
The mark-up figures provide a LOT of information. We should discuss.
The behavioral arguments outline the discussion from my original e-mail below.
The LMP impact page was adjusted as well. We may need to adjust it more.

I will be available tomorrow. If you want to talk tonight, e-mail me. I will make arrangements.

Have a good day!

Howard

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Bowring, Joseph

From: Haas, Howard
Sent: Sunday, January 28, 2007 8:00 PM
To: Bowring, Joseph
Subject: RE: RE: next iteration

Given the odds of seeing that market, it would depend on being able to predict its occurrence. If there were very low odds of predicting it, I do not think we would see changes in behavior.

-----Original Message-----

From: Bowring, Joseph
Sent: Sunday, January 28, 2007 7:51 PM
To: Haas, Howard
Subject: RE: RE: next iteration

I agree. But one question is - if the market were competitive everywhere but for APSouth and we exempted the interface, would we see a change in offer behavior?

Are you sure that the two graphs are different - they look identical based on a quick flip.

-----Original Message-----

From: Haas, Howard
Sent: Sunday, January 28, 2007 7:45 PM
To: Bowring, Joseph
Subject: RE: RE: next iteration

9 looks right. I'd posit that, in the context of competitive markets, the possibility of mitigation will not affect offer strategies either (P will equal MC regardless).

-----Original Message-----

From: Bowring, Joseph
Sent: Sunday, January 28, 2007 5:44 PM
To: Haas, Howard
Subject: RE: RE: next iteration

See revised slide 9 if you get a chance.
Let me know.
I will send these to AAZ by 8:00

-----Original Message-----

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Sent: Sunday, January 28, 2007 5:07 PM
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5/31/2007

SMM - 00125

Bowring, Joseph

From: Bowring, Joseph
Sent: Sunday, January 28, 2007 8:15 PM
To: Haas, Howard
Subject: FW: APSOUTH Interface Analysis

-----Original Message-----

From: Ott, Andy
Sent: Sunday, January 28, 2007 8:11 PM
To: Kormos, M.J.; Zibelman, Audrey A.; Bresler, Frederick S. (Stu) III; Bowring, Joseph
Subject: APSOUTH Interface Analysis

As we discussed on Friday afternoon, I have created a draft version of the slides that I propose to post tomorrow for the MIC discussion of this topic on Wednesday . These slides are similar to those we reviewed on Friday but I removed the specific dates/hours and revised the comments in prep. for public posting

I would like to have any comments of discussion on these completed by noon tomorrow

Joe, please forward any slides you may have as soon as you can

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Sent: Sunday, January 28, 2007 7:58 PM
To: Bowring, Joseph
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Cc: Haas, Howard; Bresler, Frederick S. (Stu) III
Subject: APSOUTH Interface Analysis

I have attached the draft MMU slides for the discussion at the MIC.

Bowring, Joseph

From: Bowring, Joseph
Sent: Sunday, January 28, 2007 4:29 PM
To: Haas, Howard
Subject: RE: Interface Test: The answer key

Take a look at revised slides and let me know if you think need modification. If so, send details in email.

-----Original Message-----

From: Haas, Howard
Sent: Sunday, January 28, 2007 3:35 PM
To: Haas, Howard; Bowring, Joseph
Subject: RE: Interface Test: The answer key

New figures.

Howard

-----Original Message-----

From: Haas, Howard
Sent: Sunday, January 28, 2007 3:00 PM
To: Haas, Howard; Bowring, Joseph
Subject: RE: Interface Test: The answer key

New figures. Edited the slides a bit.

Howard

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To: Haas, Howard; Bowring, Joseph
Subject: RE: Interface Test: The answer key

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fyi

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Sent: Friday, January 26, 2007 4:09 PM

To: Ott, Andy

Subject: slides

Please email me your slides - thanks

Bowring, Joseph

From: Haas, Howard
Sent: Monday, January 29, 2007 10:19 AM
To: Bowring, Joseph
Subject: Data Files

FYI, the files and graphs are correct based on the data we have.

Note the mark-ups are limited to those units within the PEPCO, Dominion and BC zones.
Exempt units are not included (no mark-up was calculated for exempt units).
Units missing a cost curve, or with a zero cost curve, etc did not have a mark up calculated.

Bridgid is still examining the data for outliers. Once complete, we will send the data data behind the figures to markets.

Howard

Bowring, Joseph

From: Haas, Howard
Sent: Monday, January 29, 2007 9:42 AM
To: Bowring, Joseph
Cc: Cummings, Bridgid M.
Subject: RE: Mark up

The data indicates a test of APSouth on:

6/1
6/2
6/18
6/20
6/22
6/24
6/25
6/29
7/2
7/11
7/18
7/21
7/22
7/24
7/30
8/2
8/30
8/31

The line up with the graphs...

-----Original Message-----

From: Bowring, Joseph
Sent: Monday, January 29, 2007 8:12 AM
To: Haas, Howard
Cc: Cummings, Bridgid M.
Subject: Mark up

Howard,
Can you provide Bridgid the spreadsheets you used to develop the mark up graphs for APSouth?
The location of the points on the x axis is by day?
Each day is one on which a unit was tested or failed a test?
thanks,
Joe

Bowring, Joseph

From: Haas, Howard
Sent: Monday, January 29, 2007 9:59 AM
To: Bowring, Joseph
Cc: Cummings, Bridgid M.
Subject: RE: Mark up

Mark-up was not calculated for exempt units and mark up was not calculated for units without a valid cost offer

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Bowring, Joseph

From: Bowring, Joseph
Sent: Monday, January 29, 2007 8:43 AM
To: Haas, Howard
Subject: FW: APSOUTH Interface Analysis

Please review the graphs with Bridgid and then forward the relevant data.

Thanks

Give me a call to discuss when ready.

-----Original Message-----

From: Bresler, Frederick S. (Stu) III
Sent: Monday, January 29, 2007 8:19 AM
To: Bowring, Joseph; Haas, Howard
Cc: Hartung, Dean
Subject: RE: APSOUTH Interface Analysis

Joe, Howard - could one of you send Dean and I the data behind the scatter plots on slides 11 and 12?

Thanks,

- Stu

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To: Ott, Andy; Kormos, M.J.; Zibelman, Audrey A.
Cc: Haas, Howard; Bresler, Frederick S. (Stu) III
Subject: APSOUTH Interface Analysis

I have attached the draft MMU slides for the discussion at the MIC.

Bowring, Joseph

From: Haas, Howard
Sent: Monday, January 29, 2007 2:31 PM
To: Bresler, Frederick S. (Stu) III; Bowring, Joseph; Ott, Andy
Cc: Hartung, Dean
Subject: APSOUTH Interface Analysis

All,

Here are the data sets used to produce the two scatter plots of mark up used in the presentation. The xxx TPS units.xls provides the "tested" mark up plot. The xxx TPS failed-ii.xls provides the "tested and failed" mark up plot.

If you have any questions, please give Joe or me a call.

Howard

Bowring, Joseph

From: Bresler, Frederick S. (Stu) III
Sent: Monday, January 29, 2007 8:19 AM
To: Bowring, Joseph; Haas, Howard
Cc: Hartung, Dean
Subject: RE: APSOUTH Interface Analysis

Joe, Howard - could one of you send Dean and I the data behind the scatter plots on slides 11 and 12?

Thanks,

- Stu

-----Original Message-----

From: Bowring, Joseph
Sent: Sunday, January 28, 2007 8:15 PM
To: Ott, Andy; Kormos, M.J.; Zibelman, Audrey A.
Cc: Haas, Howard; Bresler, Frederick S. (Stu) III
Subject: APSOUTH Interface Analysis

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Bowring, Joseph

From: Bowring, Joseph
Sent: Monday, January 29, 2007 8:12 AM
To: Haas, Howard
Cc: Cummings, Bridgid M.
Subject: Mark up

Howard,
Can you provide Bridgid the spreadsheets you used to develop the mark up graphs for APSouth?
The location of the points on the x axis is by day?
Each day is one on which a unit was tested or failed a test?
thanks,
Joe

Bowring, Joseph

From: Bowring, Joseph
Sent: Monday, January 29, 2007 2:27 PM
To: alan.haymes@ferc.gov
Subject: MMU issue

Alan,

Just a heads up that the MMU prepared slides for the MIC meeting on Wednesday on the issue of the application of the TPS test to exempt interfaces. Andy and I both prepared slides over the weekend and exchanged them Sunday evening. Audrey told me this morning that she would not permit the MMU slides to be posted. One of the areas that she deemed "inflammatory" is that we prepared two graphs showing the mark up of units that were included in the supply stack for the APSouth interface. This seems to me to be a clear infringement of MMU independence and a violation of the tariff Attachment M. Nonetheless, Andy Ott has posted his slides presenting what to me is a misleading analysis of our results and the application of the TPS test.

- Joe

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, January 31, 2007 4:53 PM
To: Ott, Andy; Zibelman, Audrey A.
Subject: MIC slides

With regard to the quarterly review of TPS issue:

- I would like to post our proposed slides, leaving out, for now, the mark up slides to which you objected.
- I would also like to have the discussion about the markup graphs as soon as Andy's folks have had a chance to look at the data.
- I would also like to start a group process to analyze the application of the TPS test as soon as possible.

Thanks,
Joe

Bowring, Joseph

From: Ott, Andy
Sent: Monday, February 12, 2007 12:23 PM
To: Bowring, Joseph
Subject: RE: MIC slides

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From: Bowring, Joseph
Sent: Monday, February 12, 2007 7:58 PM
To: Ott, Andy
Subject: RE: MIC slides

Tell me how and why you disagree so that I can understand and discuss.

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From: Ott, Andy
Sent: Monday, February 12, 2007 7:57 PM
To: Bowring, Joseph
Subject: RE: MIC slides

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I do disagree with the way you actually calculated markups

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Howard

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fyi -

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From: Bowring, Joseph
Sent: Friday, September 08, 2006 12:23 PM
To: Zibelman, Audrey A.
Cc: Ott, Andy; Kormos, M.J.; Hagele, Jack
Subject: Quarterly Report re Exempt Interfaces

Audrey,

As I mentioned to you yesterday, in accordance with the Operating Agreement, I have attached the quarterly report from the Market Monitoring Unit regarding the exemption of internal PJM interfaces.

Section 6.4.1(d)(ii) of Schedule 1 of the PJM Operating Agreement states:

"On a quarterly basis, using an analysis no less stringent than the test for suspending offer capping set forth in sections 6.4.1(e) and (f) below, the PJM Market Monitoring Unit will evaluate whether additional interfaces also should be exempt and whether any existing exemptions should be terminated. Considering the recommendations of the PJM Market Monitoring Unit, the Office of the Interconnection shall determine whether to make a filing with the FERC proposing that an additional interface should be exempt or an existing exemption should be terminated. Any change in the exempt status of the interface shall become effective upon FERC acceptance. The Office of the Interconnection shall post a summary of the results of the PJM Market Monitoring Unit's quarterly analyses and the Office of the Interconnection's determination whether to make a filing with the FERC."

I provided a draft copy to Andy and Mike in June and discussed with them.

Please let me know if you would like to discuss.

- Joe

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, September 13, 2006 3:59 PM
To: Ott, Andy
Cc: Cawley, Susan; Kelly, Susan
Subject: RE: BOM Meeting, October 17, 2006 - Agenda

Andy,
My expected topics at this point include:

- Regulation market report/recommendations
- TPS quarterly reports/recommendations
- Merger status
- AU/FMU issue/recommendations
- Black start issue/recommendations

- Joe

-----Original Message-----

From: Kelly, Susan
Sent: Wednesday, September 13, 2006 2:47 PM
To: Bowring, Joseph
Cc: Cawley, Susan
Subject: BOM Meeting, October 17, 2006 - Agenda

Joe,

Attached is the revised (but not yet approved) agenda for the upcoming board meeting. Andy has requested a return e-mail from you with details on the subject matter of your presentation. Ultimately, he will require both a memo and a presentation from you, but for today he is just looking for details.

He requests this information by COB today, Wednesday, 9/13/06.

Thanks,
Sue

Susan M. Kelly
Executive Administrator
for Andrew L. Ott, VP, Markets
PJM Interconnection
kellys@pjm.com

Bowring, Joseph

From: Bowring, Joseph
Sent: Friday, September 22, 2006 11:17 AM
To: Ott, Andy
Subject: RE: Draft CMC memo - Quarterly Report

Do you think I need PPT?

-----Original Message-----

From: Ott, Andy
Sent: Friday, September 22, 2006 11:13 AM
To: Bowring, Joseph; Kelly, Susan
Cc: Swimm, Nora
Subject: RE: Draft CMC memo - Quarterly Report

level of detail looks OK.

I will need to alert AAZ to this being a CMC subject and she will review . My position on this item is that since we have had the 3 exempt interfaces for some time w/o documented problems , this result will call into question the TPS. We may need to discuss it with her prior to the meeting

-----Original Message-----

From: Bowring, Joseph
Sent: Friday, September 22, 2006 10:25 AM
To: Kelly, Susan; Ott, Andy
Subject: Draft CMC memo - Quarterly Report

Please take a look at the attached for form and format.

Andy - please give both a quick read for content/level of detail etc.

Do you think power point slides are also required for this?

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, September 27, 2006 1:31 PM
To: Barry SPECTOR
Cc: Duane, Vincent P.
Subject: Scarcity Settlement [Privileged Attorney-Client Communication re PPL Complaint]

I submitted the first such analysis to PJM about 3 weeks ago. The process indicates that the next step is PJM's.

-----Original Message-----

From: Barry SPECTOR [mailto:SPECTOR@wrightlaw.com]
Sent: Wednesday, September 27, 2006 12:11 PM
To: Bowring, Joseph
Cc: Duane, Vincent P.
Subject: Scarcity Settlement [Privileged Attorney-Client Communication re PPL Complaint]

Joe, in reviewing the scarcity settlement for the PPL case, I note that, under the settlement, you are supposed to be doing quarterly analyses of exempt interfaces re offer capping, including need to add or subtract from the list, and posting the results on the web site.

Bowring, Joseph

From: Bowring, Joseph
Sent: Friday, October 06, 2006 5:06 PM
To: Zibelman, Audrey A.
Subject: Memos

Audrey

- I dropped off the draft Spinner memo. Please let me have any comments, as we discussed.
- I dropped off a hard copy of the TPS quarterly report CMC memo, with your change. It is in DOCS. Please let me have any comments.

Thanks,
Joe

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, October 18, 2006 9:36 AM
To: Zibelman, Audrey A.
Cc: Ott, Andy; Kormos, M.J.; Duane, Vincent P.
Subject: RE: Quarterly Report re Exempt Interfaces

Audrey,

As I mentioned previously, in accordance with the Operating Agreement, I have attached the second quarterly report from the Market Monitoring Unit regarding the exemption of internal PJM interfaces.

Section 6.4.1(d)(ii) of Schedule 1 of the PJM Operating Agreement states:

"On a quarterly basis, using an analysis no less stringent than the test for suspending offer capping set forth in sections 6.4.1(e) and (f) below, the PJM Market Monitoring Unit will evaluate whether additional interfaces also should be exempt and whether any existing exemptions should be terminated. Considering the recommendations of the PJM Market Monitoring Unit, the Office of the Interconnection shall determine whether to make a filing with the FERC proposing that an additional interface should be exempt or an existing exemption should be terminated. Any change in the exempt status of the interface shall become effective upon FERC acceptance. The Office of the Interconnection shall post a summary of the results of the PJM Market Monitoring Unit's quarterly analyses and the Office of the Interconnection's determination whether to make a filing with the FERC."

As I discussed with Andy, the document is basically identical to the first quarterly report except that the numbers have changed to reflect additional experience. The numbers and analysis continue to support our view of this issue as expressed in both reports. This report includes cumulative results for the first two quarters under the three pivotal supplier test.

Please let me know if you would like to discuss.

- Joe

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, October 18, 2006 1:28 PM
To: Zibelman, Audrey A.
Subject: RE: Quarterly Report re Exempt Interfaces

Will do.

-----Original Message-----

From: Zibelman, Audrey A.
Sent: Wednesday, October 18, 2006 1:27 PM
To: Bowring, Joseph
Cc: Ott, Andy; Kormos, M.J.; Duane, Vincent P.
Subject: RE: Quarterly Report re Exempt Interfaces

Joe - please set up a time for us to review this and talk about the questions raised by Vince.

-----Original Message-----

From: Bowring, Joseph
Sent: Wednesday, October 18, 2006 9:36 AM
To: Zibelman, Audrey A.
Cc: Ott, Andy; Kormos, M.J.; Duane, Vincent P.
Subject: RE: Quarterly Report re Exempt Interfaces

Audrey,

As I mentioned previously, in accordance with the Operating Agreement, I have attached the second quarterly report from the Market Monitoring Unit regarding the exemption of internal PJM interfaces.

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As I discussed with Andy, the document is basically identical to the first quarterly report except that the numbers have changed to reflect additional experience. The numbers and analysis continue to support our view of this issue as expressed in both reports. This report includes cumulative results for the first two quarters under the three pivotal supplier test.

Please let me know if you would like to discuss.

- Joe

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, October 18, 2006 3:29 PM
To: Mayes, Jeffrey
Subject: RE: 4th Quarter exempt interface evaluation

We have completed first two quarterly evaluations. I just sent you the second one - it is cumulative. PJM is required to act.

You might check with Vince to see what they plan to do. Let me know.

We discussed with CMC yesterday and Andy/AAZ told them that we would discuss recommendations with stakeholders although we do not have a date or committee yet.

-----Original Message-----

From: Mayes, Jeffrey
Sent: Wednesday, October 18, 2006 3:29 PM
To: Bowring, Joseph
Subject: 4th Quarter exempt interface evaluation

Joe:

Per Barry's comment, are you ready to go with the 4th Quarter exempt interface evaluation?

-Jeff

MATTER 4

A. CASE NAME

PJM Interconnection, LLC, Docket Nos. EL03-236 (no- three pivotal supplier test); EL04-121 (exempt interfaces).

B. DESCRIPTION

PJM filing of amendments to the PJM Tariff and Operating Agreement to revise its local market power mitigation rules: no-three pivotal supplier test.

C. PROCEDURAL DATES

- PJM re-designation of tariff sheets due – 4/21/06.
- Post results of review of out-of-merit LMP pricing – 5/30/06.
- Complete stakeholder process – 11/30/06 (may be extended if there is a reasonable prospect of consensus until 1/31/07).
- MMU mitigation report – 4/27/07.

D. SIGNIFICANT FERC ORDERS

- Letter order approving settlement – 1/27/06.
- PJM Interconnection, L.L.C., 114 FERC ¶ 61,302 (Mar. 22, 2006) (Order on rehearing and compliance).

E. SIGNIFICANT PAST PLEADINGS AND MOST RECENT CURRENT PLEADINGS FILED IN THE MATTER

- Settlement filed – 11/16/05.
- PJM posting of required LMP report – 5/30/06.

F. COMMENTS

- Latest order rejects Dayton rehearing re exempt generators as to offer capping of its units, making appeal ripe on this issue.
- 180-day stakeholder process re LMPs and dispatch to commence following report posting.
- Note requirement that PJM/MMU evaluate quarterly and post the evaluation re the exempt interfaces. I understand MMU has a draft of first evaluation.

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, October 18, 2006 1:28 PM
To: Duane, Vincent P.; Zibelman, Audrey A.
Cc: Ott, Andy; Kormos, M.J.
Subject: RE: Quarterly Report re Exempt Interfaces

The potential for offer capping at the three major interfaces should provide the markets increased certainty that the hub prices cannot be affected by market power. The result would be a positive rather than a negative impact on liquidity. Offer capping provides the markets the comfort that the outcomes represented by hub prices will be competitive rather than subject to the unpredictable exercise of market power.

Another point on this is that the most liquid hub, the West Hub, is already affected by the application of the local market power mitigation rules as most of the constraints that affect West Hub prices are already subject to local market power mitigation rules. The proposed ending of the interface exemption would ensure the consistent application of the rule. The same is true of the other hubs.

-----Original Message-----

From: Duane, Vincent P.
Sent: Wednesday, October 18, 2006 1:14 PM
To: Bowring, Joseph; Zibelman, Audrey A.
Cc: Ott, Andy; Kormos, M.J.
Subject: RE: Quarterly Report re Exempt Interfaces

Joe, as I think I have mentioned previously, it strikes me this report would benefit by considering what effect if any removing the exemption would have on the exchange and OTC financial markets trading done at these interfaces. My concern (more intuitive than based on any evidence) is that the uncertainty that would come from potential intervention in the market during some hours is so unpredictable as to defy modeling and could dampen forward trading liquidity and increase risk premiums.

I may have missed discussion of that point in the report, but in any event I think that a financial trading/markets perspective from a quantitative or structuring expert would be needed to give comprehensive consideration of the question.

From: Bowring, Joseph
Sent: Wednesday, October 18, 2006 9:36 AM
To: Zibelman, Audrey A.
Cc: Ott, Andy; Kormos, M.J.; Duane, Vincent P.
Subject: RE: Quarterly Report re Exempt Interfaces

Audrey,

As I mentioned previously, in accordance with the Operating Agreement, I have attached the second quarterly report from the Market Monitoring Unit regarding the exemption of internal PJM interfaces.

Section 6.4.1(d)(ii) of Schedule 1 of the PJM Operating Agreement states:

"On a quarterly basis, using an analysis no less stringent than the test for suspending offer capping set forth in sections 6.4.1(e) and (f) below, the PJM Market Monitoring Unit will evaluate whether additional interfaces also should be exempt and whether any existing exemptions should be terminated. Considering the recommendations of the PJM Market Monitoring Unit, the Office of the Interconnection shall determine whether to make a filing with the FERC proposing that an additional interface should be exempt or an existing exemption should be terminated. Any change in the

exempt status of the interface shall become effective upon FERC acceptance. The Office of the Interconnection shall post a summary of the results of the PJM Market Monitoring Unit's quarterly analyses and the Office of the Interconnection's determination whether to make a filing with the FERC."

As I discussed with Andy, the document is basically identical to the first quarterly report except that the numbers have changed to reflect additional experience. The numbers and analysis continue to support our view of this issue as expressed in both reports. This report includes cumulative results for the first two quarters under the three pivotal supplier test.

Please let me know if you would like to discuss.

- Joe

Bowring, Joseph

From: Scheidecker, Paul
Sent: Wednesday, November 08, 2006 1:12 PM
To: Hartung, Dean; Bowring, Joseph; Bresler, Frederick S. (Stu) III
Cc: Gilrain, Mark
Subject: RE: Hours where interfaces failed TPS

The attached denoted all tests, passed or failed. If you need a pass/fail breakdown, just let me know.

-----Original Message-----

From: Hartung, Dean
Sent: Wednesday, November 08, 2006 12:42 PM
To: Bowring, Joseph; Bresler, Frederick S. (Stu) III
Cc: Gilrain, Mark; Scheidecker, Paul
Subject: RE: Hours where interfaces failed TPS

Joe or Paul,
Are all of the entries TPS failed on the attached ? Yes, I would like to discuss the approach.

-----Original Message-----

From: Bowring, Joseph
Sent: Wednesday, November 08, 2006 11:31 AM
To: Bresler, Frederick S. (Stu) III
Cc: Hartung, Dean; Gilrain, Mark; Scheidecker, Paul
Subject: RE: Hours where interfaces failed TPS

See attached - created by Paul Scheidecker. Let me know if you would like to discuss the approach to the analysis.

-----Original Message-----

From: Bresler, Frederick S. (Stu) III
Sent: Wednesday, November 08, 2006 9:27 AM
To: Bowring, Joseph
Cc: Hartung, Dean; Gilrain, Mark
Subject: Hours where interfaces failed TPS

Joe - I understand Andy committed mkt ops to performing an LMP analysis of the hours when the transfer interfaces failed the TPS analysis. Can you please send me the hours in question so we can begin the analysis?

Thanks,

- Stu

Bowring, Joseph

From: Scheidecker, Paul
Sent: Monday, November 13, 2006 7:15 AM
To: Hartung, Dean; Bowring, Joseph
Cc: Bresler, Frederick S. (Stu) III
Subject: RE: Hours where interfaces failed TPS

Dean,

Attached are test results that I pulled for the period March 1 though Sept 10th to which I have appended the test failed flag corresponding to each owner.

Thanks,

Paul

-----Original Message-----

From: Hartung, Dean
Sent: Thursday, November 09, 2006 4:21 PM
To: Scheidecker, Paul; Bowring, Joseph
Cc: Bresler, Frederick S. (Stu) III
Subject: FW: Hours where interfaces failed TPS

Paul or Joe,

Please send me the pass/fail breakdown. I will need to know when they failed for the analysis that Andy and Stu want completed. Thanks in advance.

-----Original Message-----

From: Hartung, Dean
Sent: Wednesday, November 08, 2006 1:13 PM
To: Scheidecker, Paul; Bowring, Joseph; Bresler, Frederick S. (Stu) III
Cc: Gilrain, Mark
Subject: RE: Hours where interfaces failed TPS

Yes - I will need to know when they failed.

-----Original Message-----

From: Scheidecker, Paul
Sent: Wednesday, November 08, 2006 1:12 PM
To: Hartung, Dean; Bowring, Joseph; Bresler, Frederick S. (Stu) III
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Cc: Hartung, Dean; Gilrain, Mark; Scheidecker, Paul
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See attached - created by Paul Scheidecker. Let me know if you would like to discuss the approach to the analysis.

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To: Bowring, Joseph
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Subject: Hours where interfaces failed TPS

Joe - I understand Andy committed mkt ops to performing an LMP analysis of the hours when the transfer interfaces failed the TPS analysis. Can you please send me the hours in question so we can begin the analysis?

Thanks,

- Stu

Bowring, Joseph

From: Bowring, Joseph
Sent: Tuesday, November 14, 2006 8:24 PM
To: Scheidecker, Paul
Subject: Quarterly TPS report

Dean Hartung has been reviewing the analysis. He has told Andy that the test count does not represent hours and that multiple tests are sometimes run within an hour. I believe that you correctly characterized the numbers as numbers of tests or intervals and not numbers of hours. Please verify that for me.

Please also contact Dean and encourage him to discuss any questions or issues he has with you.

Give me a call in the AM.

Thanks

Bowring, Joseph

From: Ott, Andy
Sent: Monday, November 20, 2006 12:25 PM
To: Bowring, Joseph; Zibelman, Audrey A.
Cc: Kormos, M.J.; Duane, Vincent P.; Bresler, Frederick S. (Stu) III; Ott, Andy
Subject: RE: Quarterly Report re Exempt Interfaces
Follow Up Flag: Follow up
Due By: Monday, November 20, 2006 3:00 PM
Flag Status: Flagged

Joe and Audrey

Attached is the PJM Markets staff evaluation of the MMU report regarding Exempt interfaces. The first part of the document (pages 1-3) is a summary excerpt from the MMU report, the second part (pages 4-5) is the markets staff evaluation of the analysis along with the markets staff recommendations.

for those of you on blackberry, I have included the second part in the email text below.

Joe, once you have reviewed this, I would like to discuss it with you and get your comments .

Mike, Audrey, Vince and Stu please contact me with any comments .

Have a great Thanksgiving ... Andy

PJM Staff Evaluation of the Market Monitor's Analysis and Recommendations

The Market Monitor's analysis based on the three pivotal supplier test for the exempt interfaces is incomplete. The analysis only evaluates the market shares for the areas affected by the exempt interfaces when the interfaces were binding. This analysis ignores the relevant fact that when these constraints are not binding, there is no power transfer limit into the relevant market area therefore there is no potential localized market power related to these constraints. When analyzing the frequency of three pivotal supplier test failures, all operating periods should be considered because the reason for the test is to evaluate the competitiveness of the potentially constrained market sub-region that is defined by the constraint. When the constraint is binding, the generators within the sub-region must compete with other generators in the sub-region. When the constraint is not binding, the generators within the sub-region must compete with all other generators in the entire market. Therefore in order to measure to overall competitiveness of the sub-region, both conditions must be included in the analysis.

The PJM dispatch software executes at least once every 5 minutes to perform the security-constrained dispatch for the entire market region. Each execution will determine which constraints are binding and each execution performs the three pivotal supplier evaluations. During the period from March 1, 2006 to August 31, 2006, at least 52,992 such three pivotal supplier tests were performed. In order to evaluate the percentage of time that are market sub-region is not competitive for a large-scale reactive transfer limit, all dispatch intervals should be considered. Table 1 below lists the three pivotal supplier test results for the exempt interface constraints considering all intervals.

Table 1 – Three Pivotal Supplier Test Results for Exempt Interfaces (March 1, 2006 – August 31, 2006)

Exempt Interface	Number of Intervals with one or more failing owners	Total Number of Intervals in Period	Percent of Intervals with one or more failing owners
AP South	250	52,992	0.47%
Central	3	52,992	0.01%
East	5	52,992	0.01%
West	16	52,992	0.03%

As illustrated in Table 1, when all relevant testing intervals are considered, the percentage of time when the three pivotal supplier test fails for the exempt interfaces is less than one half of one percent. A three-pivotal-supplier test resulting in one or more failing owners is not an indication that market power has been exercised, it is simply an indication that some or all of the generation owned by a particular supplier is required to reliably control the constraint. Since the exempt interfaces are large scale transmission interfaces with many potential suppliers, an individual supplier cannot predict when they will be required to control the interface constraint which significantly reduces the potential for any supplier to be capable of exercising market power related to this constraint. Additionally, the results shown above indicate an extremely small percentage of time when ANY single supplier is required to control one of these exempt interfaces which virtually eliminates a market power concern related to these constraints. Therefore, the three pivotal supplier test results for the study period generally confirm the results of the previous analyses which indicate a lack of structural market power for these constraints.

The PJM market has operated for over eight years with the East, West and Central interfaces as exempt from offer capping. Through this period, there has been no finding of market power abuse by the Market Monitor related to the control of these constraints. Given this fact, supported by the analysis results shown above, PJM staff recommends that the offer capping exemption for these interfaces remain in place. The Market Monitor indicated that the primary reason to remove the offer capping exemption is that they are no longer necessary given that PJM is capable of performing the tests in real-time. PJM staff respectfully disagrees. The offer capping exemption is necessary because it reduces the potential for excessive mitigation during times of regional scarcity.

Although the analysis shown above indicates that the offer capping exemption for the APSOUTH interface should remain in place, PJM staff recommends that additional analysis is required to form a final recommendation. Given the Market Monitor's recommendation and the fact that there is much less operating experience with the offer capping exemption in place for APSOUTH, PJM staff recommends more detailed analysis of the 250 intervals that were identified as having one or more suppliers fail the three pivotal supplier test. The analysis should evaluate these hours to determine if resources that failed the three pivotal supplier test actually set the LMP values and should evaluate if such offers significantly raised the clearing prices in the relevant market sub-region. The analysis should also compare the offers of the suppliers who failed the three pivotal supplier test to determine if their offer characteristics changed during the periods when they were pivotal as compared to periods when they were not pivotal. PJM staff will perform the recommended analysis and report the results along with a final recommendation concerning the offer capping exemption for the APSOUTH interface.

-----Original Message-----

From: Bowring, Joseph

Sent: Wednesday, October 18, 2006 9:36 AM

To: Zibelman, Audrey A.

Cc: Ott, Andy; Kormos, M.J.; Duane, Vincent P.

Subject: RE: Quarterly Report re Exempt Interfaces

Audrey,

As I mentioned previously, in accordance with the Operating Agreement, I have attached the second quarterly report from the Market Monitoring Unit regarding the exemption of internal PJM interfaces.

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As I discussed with Andy, the document is basically identical to the first quarterly report except that the numbers have changed to reflect additional experience. The numbers and analysis continue to support our view of this issue as expressed in both reports. This report includes cumulative results for the first two quarters under the three pivotal supplier test.

Please let me know if you would like to discuss.

- Joe

Bowring, Joseph

From: pjm-mic-bounces+bowrij=pjm.com@lists.pjm.com [noonaa@pjm.com] on behalf of noonaa@pjm.com
Sent: Thursday, December 14, 2006 11:37 AM
To: pjm-mic@lists.pjm.com
Subject: [Pjm-mic] MIC meeting of December 20, 2006

Sent on behalf of Dean Hartung:

Attached please find the Agenda for the subject meeting with active links to the material currently posted on the website

Please note:

We are extending the review period from Monday, December 18, 2006 until Friday, December 22, 2006 for the stakeholder review of the Draft 180 Day Stakeholder Working Group Report. Please send your comments to Dean Hartung (hartund@pjm.com) and Stu Bresler (bresler@pjm.com) by COB on Friday, December 22, 2006.

If you plan on attending the MIC and have not yet registered please do so as soon as possible via the attached link: <http://www.pjm.com/committees/form-mic-attend.jsp> .

Bowring, Joseph

From: Bowring, Joseph
Sent: Thursday, December 14, 2006 3:01 PM
To: Scheidecker, Paul
Subject: Quarterly Report

Is Dean keeping you in the loop on their calculations of market power for APS south?
Can you update me?

Bowring, Joseph

From: Bowring, Joseph
Sent: Thursday, December 14, 2006 3:32 PM
To: Scheidecker, Paul
Subject: RE: Quarterly Report

Please ask him, via email, with a cc to me, to share his approach to the analysis and his current results.

Andy told me that he thought Dean was sharing.

-----Original Message-----

From: Scheidecker, Paul
Sent: Thursday, December 14, 2006 3:26 PM
To: Bowring, Joseph
Subject: RE: Quarterly Report

Haven't heard a word about it since I sent him the data. He was pretty tight lipped about what he was planning to do with it.

-----Original Message-----

From: Bowring, Joseph
Sent: Thursday, December 14, 2006 3:01 PM
To: Scheidecker, Paul
Subject: Quarterly Report

Is Dean keeping you in the loop on their calculations of market power for APS south?
Can you update me?

Bowring, Joseph

From: Scheidecker, Paul
Sent: Thursday, December 14, 2006 4:03PM
To: Bowring, Joseph; Haas, Howard
Subject: Response to MMU TPS -PS Comments.pdf

There was so much here to work with that I hardly knew where to begin.

My comments are appended.

Bowring, Joseph

From: Scheidecker, Paul
Sent: Thursday, December 14, 2006 4:06 PM
To: Hartung, Dean
Cc: Bowring, Joseph
Subject: TPS Results Analysis

Dean,

I wanted to check in to see how you were coming along with your review of the TPS test results that I provided a short time ago. Are you in a position yet to share your approach or preliminary findings? If I can be of any assistance with the analysis, or if you require more data, please let me know.

Thanks,

Paul

Paul G. Scheidecker
PJM Interconnection, L.L.C.
Market Monitoring Unit
610.666.4487

Bowring, Joseph

From: Hartung, Dean
Sent: Thursday, December 14, 2006 4:09 PM
To: Scheidecker, Paul
Cc: Bowring, Joseph
Subject: RE: TPS Results Analysis

Yes - I was hoping to get together tomorrow - if you have time. What is your availability tomorrow?

-----Original Message-----

From: Scheidecker, Paul
Sent: Thursday, December 14, 2006 4:06 PM
To: Hartung, Dean
Cc: Bowring, Joseph
Subject: TPS Results Analysis

Dean,

I wanted to check in to see how you were coming along with your review of the TPS test results that I provided a short time ago. Are you in a position yet to share your approach or preliminary findings? If I can be of any assistance with the analysis, or if you require more data, please let me know.

Thanks,

Paul

Paul G. Scheidecker
PJM Interconnection, L.L.C.
Market Monitoring Unit
610.666.4487

Bowring, Joseph

From: Bowring, Joseph
Sent: Thursday, December 14, 2006 2:34 PM
To: Scheidecker, Paul; Haas, Howard
Subject: final markets response to Quarterly

Comments?

I will be debating with Andy at MIC.

Thanks

Bowring, Joseph

From: Scheidecker, Paul
Sent: Thursday, December 14, 2006 3:26 PM
To: Bowring, Joseph
Subject: RE: Quarterly Report

Haven't heard a word about it since I sent him the data. He was pretty tight lipped about what he was planning to do with it.

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Sent: Thursday, December 14, 2006 3:01 PM
To: Scheidecker, Paul
Subject: Quarterly Report

Is Dean keeping you in the loop on their calculations of market power for APS south?
Can you update me?

Bowring, Joseph

From: Hartung, Dean
Sent: Friday, December 15, 2006 3:07 PM
To: Scheidecker, Paul; Bowring, Joseph
Cc: Carroll, Rebecca; Marcino, Angelo N
Subject: LMP Analysis for APSouth



apsouth_analysis.doc (238 KB)

Paul and Joe,
Attached is the documentation from our APSouth analysis. We will review this document at our meeting on Monday.

Bowring, Joseph

From: Hartung, Dean
Sent: Friday, December 15, 2006 10:00 AM
To: Bowring, Joseph
Subject: RE: APSouth LMP Analysis

I wanted to have it today but, it looked like Paul was on vacation. We can do it another day if you like. Let me know.

-----Original Appointment-----

From: Bowring, Joseph
Sent: Friday, December 15, 2006 9:59 AM
To: Hartung, Dean
Subject: Declined: APSouth LMP Analysis
When: Monday, December 18, 2006 9:00 AM-10:00 AM (GMT-05:00) Eastern Time (US & Canada).
Where: My Office

At RPM meeting per my schedule

Bowring, Joseph

From: Scheidecker, Paul
Sent: Wednesday, December 20, 2006 1:37 PM
To: Bowring, Joseph
Subject: RE: Q TPS

OK

-----Original Message-----

From: Bowring, Joseph
Sent: Wednesday, December 20, 2006 1:37 PM
To: Scheidecker, Paul
Subject: Q TPS

Can you talk with Dean tomorrow (or when you are next available) and tell him the problems we have with his method for analyzing APS South? Let me know how it goes and what his response is. I told Andy that we thought their approach was incorrect and that we would start by you meeting with Dean to discuss.

We also need to develop our own analysis, as they plan to present some version of their analysis to the MIC in January.

Let's discuss.
 thanks

Bowring, Joseph

From: Bowring, Joseph
Sent: Friday, January 05, 2007 6:00 PM
To: Scheidecker, Paul
Subject: APSouth

I suggested to Dean yesterday that he sit down with you and the two of you jointly develop a method for approaching the analysis. I indicated that it did not make sense to look at the operating units when the TPS was run and suggested that it would be better to look at the mark up of the units in the incremental supply curve. Try giving him a call on Monday to see if he is receptive to the idea of doing something together. I told him that our goal was not to attack him and that it would make more sense to develop a joint approach that we all agreed with. He agreed that it made sense.

Bowring, Joseph

From: Bowring, Joseph
Sent: Tuesday, January 09, 2007 12:40 PM
To: Kelly, Susan
Cc: Ott, Andy
Subject: RE: Progress on Advance Materials for February 6, 2007 BOM

At the February 6 CMC meeting, I plan to review highlights of the draft State of the Market Report, which will have been distributed on January 31. There will therefore be no advance materials on the SOM.

Other relevant topics include the regulation market and the interface pricing issues. Andy and I need to coordinate on these issues. We can submit dueling documents or we can submit documents together which include both perspectives or we can choose to submit no documents. We should do whatever Andy prefers.

-----Original Message-----

From: Kelly, Susan
Sent: Monday, January 08, 2007 3:01 PM
To: Bowring, Joseph; Bastian, Jeff; Bresler, Frederick S. (Stu) III; Bladen, Jeffrey M.; Williams, Stanley; Ogur, Serhan
Subject: Re: Progress on Advance Materials for February 6, 2007 BOM

Hello everyone -- kind of quiet out there....everybody working hard on their advance materials that Andy needs to see pretty much by COB this Wed., 1/10 to adhere to the review schedule going up the line?

P.S. Don't shoot the messenger.

Thanks,
The Messenger
8214

-----Original Message-----

From: Ott, Andy
Sent: Monday, January 08, 2007 2:59 PM
To: Kelly, Susan
Subject: FW: February 6, 2007 CMC Materials

-----Original Message-----

From: Kelly, Susan
Sent: Wednesday, January 03, 2007 12:17 PM
To: Bowring, Joseph; Bastian, Jeff; Bresler, Frederick S. (Stu) III; Bladen, Jeffrey M.; Williams, Stanley; Ogur, Serhan
Cc: Ott, Andy; Noonan, Arlene
Subject: February 6, 2007 CMC Materials

Hello everyone--

Advance materials for the February 2007 CMC meeting, including draft blue sheets (if necessary), memos, background reports and supporting documents are due to Andy no later than COB next Wednesday, January 10, 2007 (so that he may adhere to Nora's required review date of 1/12/07). The draft CMC Agenda and templates are attached for your convenience. **Please use these updated templates for your materials, as they contain the 2007 PJM copyright.**

Please save as a new document in DOCS and forward your materials in DOCS reference format to Andy. Please make sure you have granted access to **Board/Committee Executives, Board Review Team and Board/Committee Contacts groups.**

Thank you.

Sue

8214

Bowring, Joseph

From: Ott, Andy
Sent: Thursday, January 11, 2007 7:26 AM
To: Bowring, Joseph; Kelly, Susan
Cc: Swimm, Nora
Subject: RE: Progress on Advance Materials for February 6, 2007 BOM
Follow Up Flag: Follow up
Due By: Thursday, January 11, 2007 12:00 PM
Flag Status: Flagged

Joe

you need to have a presentation on the SOM highlights review and you will need to do a dry run with Toby and Nora on 1/24 and a final dry run with PGH/AAZ on 1/26 .

As we discussed, I had not planed on covering either the regulation or interface pricing times at this upcoming meeting

-----Original Message-----

From: Bowring, Joseph
Sent: Tuesday, January 09, 2007 12:40 PM
To: Kelly, Susan
Cc: Ott, Andy
Subject: RE: Progress on Advance Materials for February 6, 2007 BOM

At the February 6 CMC meeting, I plan to review highlights of the draft State of the Market Report, which will have been distributed on January 31. There will therefore be no advance materials on the SOM.

Other relevant topics include the regulation market and the interface pricing issues. Andy and I need to coordinate on these issues. We can submit dueling documents or we can submit documents together which include both perspectives or we can choose to submit no documents. We should do whatever Andy prefers.

-----Original Message-----

From: Kelly, Susan
Sent: Monday, January 08, 2007 3:01 PM
To: Bowring, Joseph; Bastian, Jeff; Bresler, Frederick S. (Stu) III; Bladen, Jeffrey M.; Williams, Stanley; Ogur, Serhan
Subject: Re: Progress on Advance Materials for February 6, 2007 BOM

Hello everyone -- kind of quiet out there....everybody working hard on their advance materials that Andy needs to see pretty much by COB this Wed., 1/10 to adhere to the review schedule going up the line?

P.S. Don't shoot the messenger.

Thanks,
The Messenger
8214

-----Original Message-----

From: Ott, Andy

Sent: Monday, January 08, 2007 2:59 PM

To: Kelly, Susan

Subject: FW: February 6, 2007 CMC Materials

-----Original Message-----

From: Kelly, Susan

Sent: Wednesday, January 03, 2007 12:17 PM

To: Bowring, Joseph; Bastian, Jeff; Bresler, Frederick S. (Stu) III; Bladen, Jeffrey M.; Williams, Stanley; Ogur, Serhan

Cc: Ott, Andy; Noonan, Arlene

Subject: February 6, 2007 CMC Materials

Hello everyone--

Advance materials for the February 2007 CMC meeting, including draft blue sheets (if necessary), memos, background reports and supporting documents are due to Andy no later than COB next Wednesday, January 10, 2007 (so that he may adhere to Nora's required review date of 1/12/07). The draft CMC Agenda and templates are attached for your convenience. **Please use these updated templates for your materials, as they contain the 2007 PJM copyright.**

Please save as a new document in DOCS and forward your materials in DOCS reference format to Andy. Please make sure you have granted access to **Board/Committee Executives, Board Review Team and Board/Committee Contacts groups.**

Thank you.

Sue

8214

Bowring, Joseph

From: Ott, Andy
Sent: Monday, January 22, 2007 1:18 PM
To: Bowring, Joseph
Subject: APSOUTH Interface Analysis



PJMDOCS-#403102
-v2-APSOUTH_Int...

Bowring, Joseph

From: Ott, Andy
Sent: Monday, January 22, 2007 9:24 PM
To: Bowring, Joseph
Subject: FW: APSOUTH Unit Bidding - Markup

Joe

here is the gen offer behavior from the APSouth interface analysis with the results displayed as price offer markup over cost offer.

I do not see anything significant here

-----Original Message-----

From: Hartung, Dean
Sent: Monday, January 22, 2007 3:50 PM
To: Ott, Andy
Cc: Bresler, Frederick S. (Stu) III; Marcino, Angelo N.; Carroll, Rebecca
Subject: FW: APSOUTH Unit Bidding - Markup

Andy,
Attached are the plots for the "markup" analysis. As you explained, it is the ratio of the price to cost for the units. Let me know if you want these plots included in your presentation.

-----Original Message-----

From: Marcino, Angelo N.
Sent: Monday, January 22, 2007 3:46 PM
To: Hartung, Dean
Subject: APSOUTH Unit Bidding - Markup

Dean,

Attached are the markup plots for the 7 units.

Thanks,

Angelo

Bowring, Joseph

From: Bowring, Joseph
Sent: Monday, January 22, 2007 2:02 PM
To: Scheidecker, Paul
Subject: FW: APSOUTH Interface Analysis



PJMDOCS-#403102
-v2-APSOUTH_Int...
yi

Please update me on the status of the mark up analyses by Bridgid and Tom Z for APS south.
Andy wants to discuss this week.

This is for when you have a chance - I know you are with your family.

Thanks

-----Original Message-----

From: Ott, Andy
Sent: Monday, January 22, 2007 1:52 PM
To: Bowring, Joseph
Subject: APSOUTH Interface Analysis

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, January 24, 2007 11:55 AM
To: Scheidecker, Paul; Haas, Howard
Subject: FW: APSOUTH Interface Analysis



PJMDOCS-#403102

-v2-APSOUTH_Int...

lease take a look.
You and Howard and I should talk.
Andy wants to talk today also.
Has Dean told what you did in his analysis?

-----Original Message-----

From: Ott, Andy

Sent: Monday, January 22, 2007 1:52 PM

To: Bowring, Joseph

Subject: APSOUTH Interface Analysis

Bowring, Joseph

From: Scheidecker, Paul
Sent: Wednesday, January 24, 2007 11:05 AM
To: Bowring, Joseph
Subject: FW: PJMDOCS-#03102-v2-APSOUT HInterfaceAnalysis.PPT



PJMDOCS-#403102
-v2-APSOUTH_Int...

oe,

FYI - I'm meeting with Dean tomorrow morning to discuss.

Thanks,

Paul

-----Original Message-----

From: Hartung, Dean
Sent: Wednesday, January 24, 2007 11:02 AM
To: Scheidecker, Paul
Subject: PJMDOCS-#403102-v2-APSOUTH_Interface_Analysis.PPT

Paul,

Attached is the presentation for the APSouth exempt interface evaluation. Please let me know when you have some time to discuss.

PJMDOCS-#403102-v2-APSOUTH_Interface_Analysis.PPT

Bowring, Joseph

From: Bowring, Joseph
Sent: Wednesday, January 24, 2007 1:10 PM
To: Scheidecker, Paul; Haas, Howard
Subject: BAPSOUTH Interface Analysis

Paul - can you talk sometime in the next hour or so?

-----Original Message-----

From: Bowring, Joseph
Sent: Wednesday, January 24, 2007 11:55 AM
To: Scheidecker, Paul; Haas, Howard
Subject: FW: APSOUTH Interface Analysis

Please take a look.

You and Howard and I should talk.

~~Andy wants to talk today also.~~

Has Dean told what you did in his analysis?

-----Original Message-----

From: Ott, Andy
Sent: Monday, January 22, 2007 1:52 PM
To: Bowring, Joseph
Subject: APSOUTH Interface Analysis