



Major Transmission Constraints Exemption from Mitigation

MIC
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Joseph E. Bowring
Market Monitoring Unit

- FERC Order in Docket ER04-539; EL04-121
 - Order on Rehearing
 - NICA mitigation
 - August 10, 2004
- Current OA exemption from offer capping
 - Reference to OA Section 6.4(d)
 - Western; Central and Eastern reactive limits
- Appropriate triggers for offer cap mitigation in newly added control areas
 - APS; ComEd; AEP; DP&L; VEPCO

- When new control areas join PJM
 - Require PJM to perform competitive analysis
 - Constraints on major transmission interfaces into the control area
 - Determine whether an exemption from offer capping is appropriate
- Competitive analysis required for:
 - AEP
 - DP&L
 - VEPCO

- PJM filed modification to OA Schedule 1, Section 6.4.1(d)
 - PJM will perform a competitive analysis of all major transmission constraints every 12 months
 - PJM will recommend to FERC additional exemptions, if warranted based on results

- After the integration of APS
- PJM performed a competitive analysis of the interface between APS and PJM
- Results reported to EMC
- Analysis did not support an exemption

- Should offer capping be limited to generators that fail the market power test? (August 10 Order)
 - In PJM to date, offer capping has generally been limited to cases where there is little diversity of ownership
 - Issue of coordinated action under FERC market power tests
 - PJM will perform analysis as part of 12-month review
 - PJM will make recommendations to FERC based on analysis of specific situations

- **Selection of facilities for competitive analysis**
 - TLR frequency
 - Seven monitored facilities
 - APS South
 - Western, Central, Eastern reactive limits
- **Characterization of selected facilities**
 - Not “interfaces” comparable to Western, Central and Eastern
 - Based on the strong high voltage system in the newly integrated areas

	Studied Facilities
1	Kammer Transformer
2	Sammis – Wylie Ridge
3	Wylie Ridge Transformer
4	Black Oak – Bedington
5	APS South
6	Mt. Storm – Doubs
7	Kanawah – Matt Funk
8	Cloverdale – Lexington
9	Western Interface
10	Central Interface
11	Eastern Interface

- Define the market
- Define the market participants
- Define the supply curve
- Capture the control actions used by PJM markets
- Reproduce logic used by PJM markets software

- Effective MW of supply for constraint (dfax)
- Rank ordered by effective cost
 - System LMP
 - Dfax – distribution factor
 - Production cost
 - $ABS[(LMP - Offer)/dfax]$
- Includes lowers
- Includes raises

- Supply curve quartiles
 - Based on load
 - Price differences for delivered price test
- Market shares
- HHI
- Pivotal supplier
 - Requires demand
 - Control actions by PJM
 - From actual market results



Delivered Price Test Results

Flowgate	Name	HHI	Max Market Share	Pivotal Test	Overall Result
3	Eastern Interface	1054	27.7%	Pass	Pass
4	Central Interface	1160	26.7%	Pass	Pass
5	Western Interface	1280	26.9%	Pass	Pass
111	Sammis-Wylie Ridge	3559	42.9%	Fail	Fail
100	Kammer xFormer	2070	34.6%	Fail	Fail
50	AP South	2091	35.8%	Pass	Pass
1790	Mt Storm Doubs	2053	35.5%	Fail	Fail
2353	Black Oak Bedington	2083	29.5%	Fail	Fail
2358	Wylie Ridge xFRMR	2638	44.7%	Fail	Fail
2403	Kanawah Matt Funk	5194	59.8%	N/A	Fail
2406	Cloverdale Lexington	2027	35.4%	Fail	Fail

- **Western, Central, Eastern interfaces**
 - Maximum market shares about 27 percent
 - HHI Range: 1054 – 1280
 - More than three jointly pivotal suppliers
 - Conclusion: Continued exemption appropriate
- **APS South**
 - Maximum market share about 36 percent
 - HHI = 2091
 - More than three jointly pivotal suppliers
 - Conclusion: Appropriate to exempt APS south from offer capping

- **Kanawah-Matt Funk**
 - Maximum market share = 59.8%
 - HHI = 5194
 - Fails pivotal supplier test
 - Wyoming-Jacksons Ferry 765 line will relieve congestion
- **Sammis-Wylie Ridge; Wylie Ridge Transformer; Mt. Storm-Doubs; Bedington-Black Oak**
 - Maximum market shares: 29.5% to 44.7%
 - HHIs: 2053 to 3559
 - Fail pivotal supplier test

- Kammer; Cloverdale-Lexington
 - Maximum market share = 34.6%; 35.4%
 - HHI = 2070; 2027
 - Fail pivotal supplier test

- Created larger market
- Good fit with PJM
- Created larger pool of generation resources subject to redispatch
 - Significant impact on all identified PJM facilities
 - Alternative to TLRs
- Significant reduction in TLRs
- Significant reduction in offer capping
- Further review in six months based on actual data for new constraints