

**APPENDIX B TO REPORT OF INVESTIGATION  
BY THE SPECIAL INVESTIGATIVE COMMITTEE OF  
THE PJM BOM**

**GLOBAL TIME LINE OF SIGNIFICANT EVENTS**

**1997 - 2002**

<b>DATE</b>	<b>EVENT</b>
6/2/97	PJM files to restructure PJM Power Pool into ISO
6/29/98	PJM files Attachment M to its OATT setting forth a Market Monitoring Plan
3/8/99	Bowring hired as PJM Market Monitor
3/10/99	FERC accepts PJM's MMP
1/6/00	FERC Order setting forth requirements to qualify as a RTO
7/12/01	FERC grants PJM provisional RTO status and accepts PJM's MMP
5/5/02	Memo from Bowring to PJM counsel concluding that SOM is the sole responsibility of MMU and that BOM does not have the authority to edit or otherwise substantively change the SOM.
12/20/02	FERC grants PJM final RTO status

## 2003

5/03	Woolf Report on Review of Market Monitoring in PJM. Concludes MMU should remain part of PJM
6/3/03	BOM Meeting. BOM assigns study of MMU structure to the CMC.
6/18/2003	Energy Market Committee (“EMC”) Meeting. Bowring presented suggested changes to the role of the CDTF.
9/8/03	<p>CMC Meeting. CMC Position Paper on MMU Organization &amp; Accountability.</p> <p>(1) Notes the tension between MMU independence and the power wielded by MMU and if left unchecked could be disruptive.</p> <p>(2) Recommends MMU remain internal at PJM.</p>
9/23/2003	CDTF Meeting: Discussion of the future of CDTF. CDTF decided to continue its existence but with modified structure
9/24/03	EMC Meeting - Presentation on results of CDTF Meeting and the consensus reached to continue as a Task Force
10/11/03	<p>Bowring Response to CMC Position Paper</p> <p>Objects to (1) MMU having no role in market design; (2) MMU having no right to make data requests; (3) PJM Management’s role in evaluating necessity for issuing demand letter</p>
11/13/03	<p>BOM MMU Report</p> <p>Addresses: (1) independence of MMU; (2) Stresses separation of Market Design from Market Design Assessment. Market Design is Market Services Division responsibility; Market Design Assessment is MMU responsibility.</p>

## 2004

3/10/04	Market Services Division steps down entirely from any role in CDTF
3/28/04	Hagele Memorandum to Harris on FERC Orders (Market Rules Order and CAISO Order) which could impact PJM's internal process for collaboration and consultation with MMU
5/04	ComEd integrated into PJM
9/1/04	PJM Files to create single regulation service area for the expansion area to be designated PJM West/South
9/14/04	Call to Hot Line re Generator's Bid Issue
9/16/04	PJM Policy Team Meeting on whether MMU has responsibility for commenting on reasonableness of Generators' Black Start costs.  Vote is no with Bowring dissenting
9/22/04	PJM internal meeting where believed consensus reached that PJM would file for Tariff amendment for market-based rates upon Dominion integration
9/24/04	Bowring circulates draft Affidavit on Regulation Market; Hagele responds stating that paragraphs in the Affidavit breach an agreement reached at meeting (referenced above) attended by Hagele, Bowring and other PJM officers and employees.  PJM Cabinet adopts Policy Team position on Black Start issue re: MMU lack of responsibility
10/04	AEP and Dayton are integrated into PJM
10/1/04	PJM files for Tariff amendment for market-based rates upon Dominion's integration accompanied by Bowring Affidavit
10/26/04	Bowring Memorandum opposing draft protocol to replace PJM Policy Team practice
11/24/04	Bowring circulates affidavit on actual results in Regulation Market for October 2004 - wants to file with FERC that day  Zibelman informs Bowring nothing is to be filed at FERC until it is reviewed at the Cabinet meeting on 11/30/04
11/30/04	FERC 2-2 Split on PJM filing. Market-based rates will go into effect by operation of law unless something is filed  Bowring contends that at PJM Cabinet meeting decision was made not to file affidavit with actual October results. (No documentary evidence for this)

12/1/04

Spector Memorandum concluding MMU does not have role under MMP to monitor Black Start revenue requirements

## 2005

2005	Hay Group Report on PJM Personnel Surveys – MMU scored lower than other departments
1/3/05	Tierney Report on Principles for Market Monitoring & Mitigation in PJM
3/16/05	NJ BPU request to PJM to intervene in FERC proceeding re Exelon Merger. PJM declines to intervene
3/29/05	NJ BPU Letter to Bowring requesting review & report by MMU on impact of Exelon Merger on state of competition in PJM markets
4/8/05	Bowring announces MMU determination that West/South Regulation Market is structurally uncompetitive and plans for FERC filing
4/13/05	Bowring circulates draft affidavit for Regulation Market filing  E-mail exchange between Pfirrmann & Kormos re AEP concern re Regulation Market filing & proposed plan for PJM meeting where Ott and Kormos would set forth Market Services’ position, Bowring would set forth the MMU position and Zibelman, Hinton & Pfirrmann would be the “jury”.
4/19/05 –	Bowring circulates Revised Regulation Market Affidavit retaining analysis but removing conclusions
4/19/05 to 4/24/05	Continued discussions within PJM re Bowring’s affidavit on Regulation Market and sufficiency of data supporting it
4/22/05	Bowring letter to NJ BPU that MMU will update analyses that it customarily prepares in course of its role in overseeing PJM markets.
4/25/05	PJM Submission to FERC with Bowring Affidavit re Regulation Market
4/26/05	Bowring alerts Haymes (FERC) of PJM filing noting that Regulation Market is not structurally competitive
4/29/05	FERC rules on PJM filing. Permits market-based pricing effective May 1, 2005 in West/South region but imposes offer caps on dominant suppliers.
5/05	Dominion integrated into PJM
5/24/05	MMU Report on Exelon Merger Analysis
5/27/05	FERC Policy Statement on Market Monitoring Units

6/9/05	MMAC Meeting. Included presentation of Proposed revisions to Attachment M and clarification of MMU reporting, budget approval process and roles related to Report Preparation
6/22/05	Duane/Hagele Memorandum to Harris & Zibelman re revisions to PJM MMP to reflect FERC MMU Policy Statement
6/28/05	Bowring Memorandum re additional changes to proposed revised PJM MMP
7/6/05	FERC Order on Three Pivotal Supplier Test in Load Pockets & Mitigation Scarcity.
7/12/05	NJ BPU request to Bowring to update Exelon Merger analysis and provide analysis of the merger's impact on BGS auction market
7/18/05	Bowring informs Ott that the MMU cannot conclude the combined Regulation Market would be competitive based current data. Ott seeks MMU's detailed analysis
7/26/05	PJM commits to the MIC & EMC to provide a combined Regulation Market 6 month trial period report to stakeholders of trial results in 3 months
8/2/05	MMU referral to Pease (FERC) re: Generator's Exercise of Market Power
8/19/05	Hagele letter to NJ BPU agreeing that MMU can update the 5/24/05 Report on the Exelon Merger but denying request for an analysis of the impact of the merger upon the BGS market.
8/30/05	NJ BPU Letter to Bowring explaining why BGS auction analysis is within MMU's scope of responsibility and reiterating its request
12/2/05	Bowring circulates MMU's draft Section 205 FERC filing to remove a Generator's unit's exemption from offer capping
12/8/05	MMAC Meeting at which modifications to the Market Monitoring Plan were addressed

## 2006

1/6/06	Hagele letter regarding PJM's agreement to have Bowring appear and be examined on the Exelon Merger Analyses and Reports
1/12/06 - 1/13/06	E-mail chain re need for Ott & Bowring to speak with the Generator before PJM Management goes to the BOM with Section 205 filing request
1/25/06	MMU request to PJM website to post 12/8/05 MMAC Minutes and Notes re Attachment M Discussion
1/27/2006	Draft 2005 SOM circulated for comments. – No conclusion reached re competitiveness of PJM Combined Regulation Market
2/9/06	2 <sup>nd</sup> attempt by MMU Staff to post 12/8/05 MMAC Minutes and Notes re Attachment M Discussion to PJM website. Discovers 12/8/05 Minutes were posted on 1/25/06.
2/10/06	Zibelman e-mail to Ott & Bowring that due to dispute between Ott & Bowring on the Section 205 Filing that the issue should not go to BOM before Harris & Zibelman review the matter.  Bowring responds that he agrees with proposed process.
2/13/06	Circulation within PJM Management of draft of Internal Procedures to go to CMC with note that they are largely agreed upon by Bowring, Ott & Hagele.  Bowring responds that he did not agree with the process in which they were developed and that the Internal Procedures do not make the independence of the MMU clear.
2/17/06	Harris email to Ott, Hagele & Zibelman – Lets Discuss the Section 205 Filing
2/21/06	CMC Meeting - <b>2005 SOM Reviewed &amp; Internal Procedures Approved</b>
2/23/06	Bowring informs Ott and Kormos of new conclusion for 2005 SOM concerning need for continued offer capping  Ott & Kormos Respond with concerns as to the timing and that the reported indices do not appear to justify the conclusion
2/27/06	Bowring circulates revised 2005 SOM with new conclusion
2/28/06	Zibelman e-mail to Bowring stating that by changing conclusions and analysis after the CMC's review, Bowring was not adhering to PJM internal process for review and that it deprived PJM and the BOM of the opportunity to hear concerns others may have with the analysis.

3/1/06	Compromise reached on 2005 SOM – New paragraphs with analysis of Regulation Market retained but reverts to prior conclusion which stated “need for further study”
3/13/06	Hagele Lessons Learned Memo – re issues with MMU providing testimony and analyses to State Agencies and private entities. Concludes significant drain on MMU resources; not fair to other stakeholders.
3/21/06	Zibelman Memo to Bowring/Ott attaching Internal Procedures - states they became effective 2/21/06.
3/21/06	Harris memo to Zibelman & Bowring - delegating to Zibelman responsibility to receive information and consult with MMU on Harris’ behalf.
4/27/06	PJM files Revised Attachment M – (Became effective 7/17/06)
5/06	Hay Group MMU Employee Study
5/18/06	Bowring testifies at FERC conference on Market Monitors
5/30/06	Bowring circulates to Ott & Kormos MMU Regulation Market analysis
5/31/06	Zibelman Memorandum to Bowring criticizing his performance on the Spinner Response Report based on her assessment as to its timeliness, responsiveness, drafting style and overall poor quality.
6/12/06	Hagele/Morais Memorandum to Harris & Zibelman comparing Bowring 5/18/06 testimony at FERC conference with 2003 BOM MMU Report.  Concludes generally Bowring’s testimony did not contradict the BOM MMU Report but Bowring’s statements re MMU independence at times conflicted with BOM policy direction.
6/29/06	Harris Memorandum criticizing Bowring’s behavior in refusing to meet with Zibelman for mid-year performance review. Notes Bowring’s “quibbling” and Harris’ warning to Bowring that dismissal could be in order if no serious and meaningful changes were made.
7/6/06	Bowring Mid-Year Performance review – Reflects significant criticism in many areas of performance
7/12/06	Zibelman Memorandum to Bowring – Follow-Up to Mid-Year Performance Review. Notes Market Services Division will assume primary responsibility for obtaining and retaining PJM market data.
7/20/06	Meeting between Bowring, Wright & Johnston re data control issues
7/21/06	PJM Report incorporating suggestions from 2006 Booz Allen Report on MMU
8/4/06	Bowring e-mail to Generator re issues concerning recent offer behavior

8/15/06	Bowring email to Ott noting desire to release MMU Combined Regulation Market Analysis & to get on Committee agendas
9/5/06	Bowring email to Ott & Kormos forwarding Combined Regulation Market report sensitivity analysis
9/7/06	Clear recommendation that data be independent of MMU and Market Services Division and reside in IT.
9/26/06	MIC Meeting – Bowring presentation on proposed changes to Black Start Tariff
10/06	PowerPoint MMU & Markets Options  Describes plan for MMU & Market Services Division to combine efforts for data analysis & storage
10/11/06	Haymes (FERC) request to Bowring re data for June & July 2005 for the Generator for whom the MMU had made FERC Referral
10/13/06	PJM IT request to Ott re need to move MMU RPM data out of PJM data base due to insufficient IT resources
10/17/06	CMC Meeting - Bowring reports on Regulation Market analysis
10/24/2006	Bowring Memorandum to Mannheimer re: MMU reorganization  Racioppi will be promoted to level 5c supervisor from level 4a.
10/25/06	MRC Meeting –  Combined Regulation Market Analysis gets referred to MIC  Bowring presented materials on proposed changes to Black Start Tariff
10/25/06	Bowring e-mail noting inability to reach agreement with Ott re data control and organization
10/31/06	MIC Meeting – Black Start Tariff Amendment proposal was removed from agenda and not presented
11/1/06	Bowring e-mail to Haymes (FERC) enclosing Black Start Tariff Amendment slides
11/9/06	Memorandum noting that Zibelman had decided to move data storage and maintenance functions to Market Services Division
11/15/06	NJ BPU letter to Bowring again requesting BGS Auction analysis
11/20/06	Draft Power Point for MMAC Meeting – Includes discussion of FERC MMU Policy Statement

11/22/06	PJM Management confirms resources would be made available to MMU to maintain its own RPM data base
11/28/06	Bowring meeting with Zibelman to discuss agenda for 12/8/06 MMAC Meeting
11/29/06	MIC Meeting – Black Start Tariff amendment issues presented by Hinkle. Issue is referred to a Black Start Working Group
11/30/06	Agenda for 12/8/06 MMAC Meeting published to MMAC. Does not include FERC MMU Policy Statement discussion
12/1/06	Bowring meeting with Zibelman & Ott on RPM. Bowring contends he was pressured to modify avoidable cost template due to Generator’s complaints. (No documentation as to what was said at meeting)
12/7/06	Haymes (FERC) e-mail to Bowring reminding him to send FERC Order on Rehearing to MMAC members
12/8/06	MMAC Meeting – No discussion of FERC MMU Policy Statement
12/8/06	Bowring contends PJM Management ordered transfer of MMU’s authority for implementation of avoidable costs to Market Services Division. (No documentation exists)
12/11/06	Bowring contends that PJM held a meeting with NJ BPU at which PJM suggested that the Market Services Division, rather than MMU, would do the auction analysis. (No documents confirming meeting or statements)
12/13/06	Updated FERC referral provided to Bowring by MMU staff person
12/13/06	Bowring contends he was told that MMU was not permitted to directly contact PJM outside counsel about RPM Tariff issues but and that such contact had to be sent through Market Services Division. (No documentary support but there was contact between Bowring and PJM counsel on 12/13/06 with no apparent involvement of Market Services Division)
12/20/06	MIC Meeting where MMU presents Exempt Interface Analysis and Market Services Division countered the MMU analysis. Decided more detailed analysis by both groups would be presented at January meeting.
12/29/06	Bowring Memorandum to Zibelman addressing MMU issues and concerns with Internal Procedures.

## 2007

1/1/2007	Racioppi promoted to Level 5c Supervisor in MMU
1/6/07	Bowring 2006 Performance Review – Zibelman notes serious deficiencies in Bowring’s performance in most areas
1/10/07	Bowring Memorandum to Zibelman in response to 1/10/07 Performance review meeting
1/22/07	Ott sends Bowring draft Market Services slides on Exempt Interface Analysis for MIC meeting
1/25/07	Ott incident in MMU over MMU slides for Exempt Interface Analysis
1/26/07	Zibelman Memorandum to Bowring re follow-up to performance review on 1/10/07. Concludes no one in senior management has seen improvement in Bowring’s behavior.
1/28/07	MMU and Market Services Division exchange revised drafts of slides on Exempt Interface for MIC Meeting
1/29/07	Market Services Division slides on Exempt Interface Analysis get posted for MIC Meeting but MMU Slides are not posted  Bowring contends that Zibelman informed Bowring that he may not use MMU slides at MIC meeting because several are inflammatory  Bowring advises Haymes (FERC) that Zibelman told Bowring she would not permit the MMU slides to be posted.
1/30/07	Bowring e-mail to a. Haymes (FERC) indicating that he expects that PJM Management, “as they have done in the past,” will order him to modify SOM. Seeks opinion from Commission so that he knows how to proceed
1/31/07	MIC Meeting – Bowring makes presentation without MMU slides on interface exemption – Ott uses Market Services Division Slides criticizing MMU analysis.
2/6/07	CMC Meeting – Bowring makes presentation on independence of MMU
3/07	Two employees transfer from MMU to Market Services Division
3/3/07	Ott Memorandum to Zibelman with analysis of MMU functions splitting them into those that can be outsourced and those to be retained by Market Analysis Group. Would eliminate 10 MMU positions.

3/9/07	Spector/Wright & Talisman Memo to Zibelman; re: Potential Changes in Market Monitoring in PJM  (Note: Final version of memo is dated 3/19/07)
3/19/07	Bowring meets with Zibelman and Ott re: transfer of CDTF function from MMU to Market Services Division
3/20/07	Ott meets with Racioppi re: transfer to Markets w/CDTF function  Bowring email to Zibelman re: issues regarding Ott's "threatening" meeting with Racioppi and Ott's demands that Racioppi transfer to Markets & transfer of CDTF to Market Services Division. Bowring notes differences between what was said to him on 3/19 and what Ott said to Racioppi on 3/20.
3/21/07	Mannheimer e-mail to Wright to hold on transfer of Racioppi.  Wright meeting with Racioppi. Concludes that Racioppi did not believe he was harassed or threatened by Ott to transfer to Market Services Division. Concludes should post for CDTF position in Market Services Division
3/23/07	Meeting with Zibelman, Mannheimer & Bowring re: Racioppi incident and transfer of CDTF function  Bowring advised that his allegations re Ott's threatening MMU employee were unfounded  Draft Memo to Bowring notes that decision to move CDTF responsibility to Market Services Division is not a decision that requires the concurrence of the Market Monitoring function or Bowring
3/24/07	Bowring Memorandum to Zibelman refuting Zibelman's critique of Bowring's performance on the Spinner Report
3/25/07	Bowring's Memo to Zibelman summarizing 3/23 meeting and proposals for MMU and CDTF function and transfer of Racioppi  "The CDTF role should remain with the MMU. The role of the CDTF is to recommend changes to the definition of marginal costs. Those costs are relevant only to offer capping units for local market power. The CDTF is not making market rules."
3/27/07	CMC meeting at which Bowring meets privately with CMC members
3/27/07	Johnston follow up meeting with Racioppi to ensure he did not feel threatened or coerced by Ott. Racioppi said he wants to apply for the CDTF position in Market Services Division but is worried that Bowring will think he is disloyal.
3/28/07	MMU Staff Meeting where Bowring mentions PJM talking about externalizing MMU

3/29/07	Harris meeting with MMU staff.
3/30/07	Open CDTF positions in Market Services Division are posted.
3/31/07	Bowring Memoranda to Harris & Zibelman challenging Bowring's 2005 Performance Review & Bowring's 2006 Performance Review
4/2/07	PJM 2007 Strategic Report posted on Web Site
4/5/07	Bowring testifies before FERC
4/10/07	Frank Racioppi receives and signs his offer letter to move to Market Services Division.
4/17/07	Allegheny Electric Cooperative Complaint Re: PJM Tariff Violations
4/19/07	Meeting with MMU Staff, Zibelman and HR to announce retention plan
4/23/07	OPSI Complaint Filed Re: PJM Tariff Violations
4/24/07	Memorandum to MMU Staff on Retention Plan
5/11/07	Special Investigative Committee of PJM BOM retains Duane Morris to assist with investigation
5/18/07	FERC Orders Consolidation of Allegheny & OPSI Complaints and granted Fast Track Processing
5/18/07	PJM enhances the MMU Retention Plan
5/30/07	NJ BPU request to Bowring reiterating request for analysis of impact of Exelon Merger on BGS auction market
6/12/07	Bowring & PJM Respond to FERC Data Requests
6/22/07	FERC issues ANOPR on wholesale competition
7/2/07	PJM Supplemental Response to FERC Data Requests
7/10/07	Bowring Supplemental Response to FERC Data Requests
8/2/07	PJM files unilateral Offer of Settlement in Consolidated Proceedings on Tariff violation
8/24/07	PJM BOM agrees to have MMU do the analysis of impact of Exelon Merger on BGS auction market but notes reservations and resource limitations
9/20/07	FERC Order finding no PJM Tariff violations
10/05/07	FERC appoints Mr. Moot to serve as Facilitator for Settlement Proceedings

10/17/07

Racioppi resigns from PJM