

**Operating Committee**  
**PJM Conference & Training Center, Audubon, PA**  
**July 11, 2017**  
**9:00 a.m. – 12:00 a.m. EPT**

## Administration

1. The agenda for this meeting was approved.
2. Draft Minutes of the June 6, 2017 OC meeting were reviewed and approved.
3. The OC Work Plan was reviewed.

## Review of Operations

### 4. Review of Operational Events

Mr. Chris Pilong, PJM, reviewed PJM operations since the last OC Meeting. The review included a complete summary of the May and June 2017 operational events. The May summary included 1 Synchronous Reserve event, 1 Hot Weather Alert, and 5 Shared Reserve events. The June summary included 2 Synchronous Reserve events, 4 Hot Weather Alerts, and 5 Shared Reserve events.

### 5. Review of Operating Metrics

Mr. Joe Ciabattoni, PJM, reviewed the PJM Operating Metrics slides updated with May metrics data. Metrics included PJM's load forecast error, BAAL performance, transmission / generation outage statistics, and Perfect Dispatch performance. A new metric was also presented which captured additional Day Ahead Scheduling Reserve (DASR) MWs committed as part of any PJM Hot Weather Alerts, and the associated clearing price of DASR during those alerts.

## Endorsements / Approvals

### 6. Manual 01 Changes

Ms. Bilge Derin, PJM, will review proposed changes to *Manual 01: Control Center and Data Exchange Requirements*. The changes involved corrections to previous revisions related to the Metering Task Force efforts, as well as changes to comply with NERC Standards COM-001-3 and TOP-001-3. **The Operating Committee endorsed these changes with 0 objections and 0 abstentions.**

## First Readings

### 7. TO/TOP Matrix – Version 11

Mr. Sri Kappagantula, PJM, reviewed proposed changes to the TO/TOP Matrix. The changes involved the addition of new requirements from NERC standards COM-001-3 and TOP-018-(i). There were also a number of standards which recently became inactive, and were therefore removed from the matrix. Lastly, based on a ReliabilityFirst review of the current matrix, several reference documents have been updated (through the PJM stakeholder process as applicable) to properly map assigned tasks within the matrix to the PJM governing document. Several additional assigned tasks are currently under review, with the potential for future PJM manual updates. The Operating Committee will be asked to provide a recommendation of approval to the TOA-AC at the next OC meeting.

## 8. Manual 3A Changes

Mr. Ron DeLoach, PJM, reviewed proposed changes to *Manual 03A: EMS Model Updates and Quality Assurance*. The changes were part of the manual's periodic review, and included numerous administrative changes to update reference links and modify formatting. Changes were also made throughout Section 3.2 of the manual including the reordering and reformatting of content for clarity, as well as the addition of details and references. The Operating Committee will be asked to endorse these changes at the next OC meeting.

## 9. Dynamic Schedule Pro Forma Agreement

Mr. Phil D'Antonio, PJM, reviewed the proposed Dynamic Schedule Pro Forma Agreement. Similar to the ongoing Pseudo-Tie Pro Forma agreement effort, PJM would like to file and receive FERC approval of a Pro Forma agreement to add transparency and standardization to the Dynamic Schedule implementation process. Assuming there are no delays, PJM would like to submit this filing to FERC in November of 2017. The Operating Committee will be asked to endorse this agreement at the next OC meeting.

## OC Subcommittee / Task Force Updates

### 10. System Operations Subcommittee (SOS)

Mr. Chris Pilong provided a summary of the most recent SOS meeting.

### 11. Data Management Subcommittee (DMS)

There was no DMS update presented this month.

### 12. System Restoration Coordinators Subcommittee (SRCS)

There was no SRCS update presented this month.

## Current Issues

### 13. Primary Frequency Response

Mr. Glen Boyle, PJM, provided an update on the Primary Frequency Response issue. The newly formed senior task force assigned to this issue will have a [kickoff meeting on July 25](#). The expected duration of the senior task force efforts is approximately 6 to 9 months.

## Tool and Informational Updates

### 14. Pseudo-Tie Pro Forma Agreement Update

Ms. Jacqui Huges, PJM, provided an update on the PJM-MISO Joint Operating Agreement modifications associated with the Pseudo-Tie Pro Forma Agreement effort. The Pseudo-Tie agreements and associated Tariff and Operating Agreement revisions will be considered for endorsement at the July Markets & Reliability Committee meeting.

### 15. NERC and Regional Coordination Update

Mr. Preston Walker, PJM, provided an update on NERC, SERC and RF standards, and other pertinent regulatory and compliance information, and solicited feedback from the members on N&RC efforts. Several project updates were provided, including modifications to BAL-003-1.1 and BAL-002-2.

Standards subject to future enforcement were also reviewed, including COM-001-3 and IRO-002-5 which become enforceable on October 1, 2017.

## 16. NERC Lessons Learned

Mr. Donnie Bielak, PJM, reviewed the recently posted NERC Lessons Learned report.

## 17. Pricing Interface Update

There were no newly created pricing interfaces. .

## 18. System Resilience

Mr. Jonathon Monken, PJM, provided an update on system resilience related efforts. PJM's resilience efforts are focused on the areas of operations, planning, and markets as well as both physical and cyber security. PJM is taking a collaborative approach to developing and implementing resilience plans by engaging stakeholders and leveraging public and private partnerships.

## 19. Regulation Update

Ms. Danielle Croop, PJM, provided an update on Regulation Performance. PJM implemented new regulation requirements and a corresponding regulation signal on January 9, 2017. Signal tuning has occurred since implementation to enhance signal performance. Since this deployment, PJM has observed improved ACE control. Additional design components developed by the Regulation Market Issues Senior Task Force (RMISTF), including the replacement of the Benefit Factor term with the Regulation Rate of Technical Substitution, were approved at the June Markets & Reliability Committee meeting, and will be presented to the Members Committee in July. Performance statistics were provided for average median daily ACE, mileage ratio, and percent of time at full raise/lower (signal pegging).

## 20. Frequency Response Performance

Ms. Danielle Croop, PJM, provided an update on PJM's Frequency Response Performance with respect to the BAL-003-1 standard. The 2017 event collection period associated with BAL-003-1 R1 began in December 2016, and will continue through November 2017. PJM's 2017 Frequency Response Obligation (FRO) is -258.2 MW / 0.1 Hz. PJM exceeded its FRO during the 2016 trial period, and is currently on target to do so again in 2017.

## 21. Markets Gateway

Ms. Cheryl Mae Velasco, PJM, presented upcoming enhancements to the Markets Gateway tool. The enhancements include the ability for users to update the minimum Regulation MW clearing value on an hourly basis. Other enhancement include the option to submit up to 20 segments for a resource's Up Ramp Rate, and the addition of a Down Ramp Rate feature which can be used for resource's with differing Up and Down Ramp Rates. The enhancements are currently available in the Sandbox environment, and will be deployed in Production on July 18, 2017.

## 22. Distributed Energy Resources (DER) Update

Mr. Scott Baker, PJM, provided an update on the DER Stakeholder Process efforts.

### 23. Upcoming Solar Eclipse

Mr. Joe Mulhern, PJM, reviewed details, including anticipated impacts to PJM operations, of the solar eclipse projected to occur on August 21, 2017. Analysis performed by PJM shows now anticipated impacts to the operation of the bulk electric system in PJM's territory. As the eclipse date approaches, PJM's Operations Support personnel will continue to perform studies, collaborate with affected Transmission Owners and work with PJM Market Operations to ensure sufficient generation has been committed.

### 24. PPL 500kV Line Designation

Mr. Bill Skumanich, PPL EU, reviewed a new 500kV line designation for a second Breinigsville – Albutis 500kV circuit in the PPL territory.

### Future Meeting Dates

August 8, 2017	9:00 a.m.	PJM Interconnection - Conference and Training Center
September 12, 2017	9:00 a.m.	PJM Interconnection - Conference and Training Center
October 10, 2017	9:00 a.m.	PJM Interconnection - Conference and Training Center
November 7, 2017	9:00 a.m.	PJM Interconnection - Conference and Training Center
December 12, 2017	9:00 a.m.	PJM Interconnection - Conference and Training Center

Author: Jeff McLaughlin

### In Attendance (In Person)

Last Name	First Name	Company	Sector
Seiler (Chair)	Ken	PJM Interconnection, LLC	Not Applicable
McLaughlin (Secretary)	Jeffrey	PJM Interconnection, LLC	Not Applicable
Alfayyoumi	Mohammed	Dominion Virginia Power	Transmission Owner
Benchek	Jim	First Energy Solutions	Transmission Owner
Borgatti	Michael	Gabel and Associates	Not Applicable
Braerman	Ken	Baltimore Gas & Electric	Transmission Owner
Fitch	Neal	NRG Power Marketing LLC	Generation Owner
Foladare	Ken	Tangibl Group	
Ford	Adrien	Old Dominion Electric Cooperative	Electric Distributor
Greiner	Gary	PSEG Energy Resources and Trade LLC	Other Supplier
Horstmann	John	Dayton Power & Light Company	Transmission Owner

Jardot	Gina	Essential Power Rock Springs, LLC	Transmission Owner
Johnson	Carl	Customized Energy Solutions, Ltd.*	Not Applicable
Kogut	George	New York Power Authority	Other Supplier
Lowe	Connie	Dominion Virginia Power	
Midgley	Sharon	Exelon Business Services	Transmission Owner
O'Connell	Bob	PPGI Fund A/B Development, LLC	Generation Owner
Pratzon	David	GT Power Group	Not Applicable
Scarpignato	David	Calpine Energy Services, L.P.	Generation Owner
Sweeney	Rory	RTO Insider	Not Applicable
Trayers	Barry	Citigroup Energy, Inc.	Other Supplier
Vayda	Brian	Borough of Park Ridge, NJ	Electric Distributor

### In Attendance (Via Conference Call)

Last Name	First Name	Company	Sector
Ainspan	Malcolm	Energy Curtailment Specialists, Inc.	Other Supplier
Berlinski	Mike	Customized Energy Solutions, Ltd.*	Not Applicable
Bolan	Martin	First Energy Solutions	
Bonner	Charles	Dominion Virginia Power	
Brodbeck	John	EDP Renewables North America, LLC	Other Supplier
Campbell	Bruce	CPower	
Carmean	Gregory	OPSI	Not Applicable
Chintapalli	Raj	BP Energy Company	Other Supplier
Davis	Becky	Talen Energy Marketing, LLC	Generation Owner
DeLosa	Joe	Delaware Public Service Commission	Not Applicable



Domian	Christin	Duquesne Light Company	Transmission Owner
Dugan	Chuck	East Kentucky Power Cooperative, Inc.	Transmission Owner
Farber	John	Delaware Public Service Commission	Not Applicable
Filomena	Guy	Customized Energy Solutions, Ltd.	Not Applicable
Gagen	Rod	Dominion	
Gates	Terry	AEP	Transmission Owner
Gebolys	Debbie	Public Utility Commission of Ohio	Not Applicable
Gilani	Rehan	Consolidated Edison	Transmission Owner
Hanebuth	Michele	Orange & Rockland	Transmission Owner
Hoatson	Tom	LS Power	
Hopkins	Sandra	Dominion	
Hudis	Gabriella	Gabel and Associates	Not Applicable
Hunter	Andy	FirstEnergy Solutions Corp.	Transmission Owner
Hyzinski	Tom	Talen Energy Marketing, LLC	Generation Owner
Janicki	Diane	Boston Energy Trading and Marketing LLC	Generation Owner
Jones	Ryan	CCS Energy	
Kirk	Ryan	AEP	
Libbos	Robin	FirstEnergy Solutions Corporation	Transmission Owner
Mabry	David	McNees Wallace & Nurick LLC	Not Applicable
Markiewicz	Cindy	Allegheny Power	Transmission Owner
O'Leary	Christopher	PSEG Energy Resources and Trade LLC	Transmission Owner
Ondayko	Brock	AEP Energy Supply	Generation Owner
Owens	Ernest	ITC Mid-Atlantic Development LLC	Other Supplier

Patten	Kevin	AEP Energy, Inc.	Other Supplier
Price	Russell	UGI Utilities, Inc.	Transmission Owner
Price	Ruth Ann	Delaware Public Service Commission	Not Applicable
Rohrbach	John	ACES	
Ruck	Andrew	Public Service Electric & Gas	
Runowski	Brian	Commonwealth Edison Company	Transmission Owner
Sasser	Jonathan	Customized Energy Solutions, Ltd.*	Not Applicable
Sauriol	Dennis	AEP	
Schafer	Anita	Duke Energy	
Schloendorn	Ron	PECO	Transmission Owner
Schneider	Jon	First Energy Solutions	
Sillin	John	Federal Energy Regulatory Commission	Not Applicable
Skumanich	Bill	PPL Electric Utilities	Transmission Owner
Sock	Bryan	Public Service Electric & Gas Company	Other Supplier
Sullivan	James	Power Bridge LLC	Transmission Owner
Tangirala	Subha	ABB Enterprise Software	Not Applicable
Tsao	Stephanie	S&P Global Market Intelligence	Not Applicable
Wharton	Ron	Public Service Electric & Gas	Transmission Owner
White	Doug	North Carolina Electric Membership Corporation	Electric Distributor

## PJM Attendees

Last Name	First Name	Company	Sector
Anders	Dave	PJM Interconnection, LLC	Not Applicable
Baker	Scott	PJM Interconnection, LLC	Not Applicable

Bielak	Donnie	PJM Interconnection, LLC	Not Applicable
Boyle	Glen	PJM Interconnection, LLC	Not Applicable
Brown	Rich	PJM Interconnection, LLC	Not Applicable
Ciabattoni	Joe	PJM Interconnection, LLC	Not Applicable
Croop	Danielle	PJM Interconnection, LLC	Not Applicable
D'Antonio	Phil	PJM Interconnection, LLC	Not Applicable
DeLoach	Ron	PJM Interconnection, LLC	Not Applicable
Del Viscio	Mike	PJM Interconnection, LLC	Not Applicable
Derin	Bilge	PJM Interconnection, LLC	Not Applicable
Driscoll	Mary Ellen	PJM Interconnection, LLC	Not Applicable
Endress	Eric	PJM Interconnection, LLC	Not Applicable
Hauske	Tom	PJM Interconnection, LLC	Not Applicable
Heimbach	Mark	PJM Interconnection, LLC	Not Applicable
Holland	Risa	PJM Interconnection, LLC	Not Applicable
Hsia	Eric	PJM Interconnection, LLC	Not Applicable
Hugee	Jacqui	PJM Interconnection, LLC	Not Applicable
Jani	Alpa	PJM Interconnection, LLC	Not Applicable
Kappagantula	Sri	PJM Interconnection, LLC	Not Applicable
Keech	Adam	PJM Interconnection, LLC	Not Applicable
Kimmel	David	PJM Interconnection, LLC	Not Applicable
Miehlke	Tracy	PJM Interconnection, LLC	Not Applicable
Monken	Jonathon	PJM Interconnection, LLC	Not Applicable
Mulhern	Joe	PJM Interconnection, LLC	Not Applicable



Nice	Ryan	PJM Interconnection, LLC	Not Applicable
Olaleye	Michael	PJM Interconnection, LLC	Not Applicable
Orme	Brian	PJM Interconnection, LLC	Not Applicable
Pilong	Chris	PJM Interconnection, LLC	Not Applicable
Schuyler	Ken	PJM Interconnection, LLC	Not Applicable
Stadlmeyer	Rebecca	PJM Interconnection, LLC	Not Applicable
Stefanowicz	Vince	PJM Interconnection, LLC	Not Applicable
Velasco	Cheryl Mae	PJM Interconnection, LLC	Not Applicable
Walker	Preston	PJM Interconnection, LLC	Not Applicable
Weiss	Glenn	PJM Interconnection, LLC	Not Applicable