

Operating Committee
PJM Conference & Training Center, Audubon, PA
February 9, 2016
9:00 a.m. – 4:00 p.m. EPT

Administration

1. The OC Agenda for this meeting was approved.
2. Draft Minutes of the January 5, 2016 OC meeting and the January 20, 2016 OC Special Session were reviewed and approved.
3. The OC Work Plan was reviewed.

Review of Operations

4. Review of Operational Events

Mr. Phil D'Antonio, PJM, reviewed PJM Operations since the last OC Meeting. The review included a complete summary of December 2015 operational events, and a partial summary of January 2016 events. The December summary included 2 Synchronous Reserve events and 3 Shared Reserve events. The January summary included 2 Cold Weather Alerts, 1 Synchronous Reserve event and 2 Shared Reserve events.

Endorsements / Approvals

There were no items scheduled for Endorsement at this Operating Committee Meeting.

First Readings

5. Manual 01 Changes

Mr. Ryan Nice, PJM, reviewed proposed changes to Manual 01: Control Center and Data Exchange Requirements. Changes included administrative updates to references and naming conventions, as well as the addition of Section 3.8 for planning, coordination and notification of system changes and events. The Operating Committee will be asked to endorse these changes at the next meeting.

6. Manual 12 Changes

Mr. Sree Yeddanapudi, PJM, reviewed a proposed revision to Manual 12: Balancing Operations. The revision consisted of a new attachment to the manual, Attachment F: Dynamic Transfers. Attachment F provides details of PJM business rules for implementing Dynamic Transfers, and is based on a whitepaper presented to OC members in March 2014. The updates also require revisions to the PJM Operating Agreement (OA) and Open Access Transmission Tariff (OATT); however, the OA/OATT revisions will be handled by the Governing Documents Enhancement & Clarification Subcommittee (GDECS). Stakeholders discussed the proposed changes and determined that a Problem Statement may be needed to thoroughly review and approve the document changes. Mr. Dave Souder, PJM, presented a related Problem Statement, but further committee discussion resulted in consensus that additional stakeholder education would be sufficient, and a Problem Statement would not be necessary. A vote was then held to determine next steps. The proposal was for the OC to forego a

Problem Statement, and instead, for PJM to provide additional education related to the Dynamic Transfer process implementation described in Attachment F of the Manual 12 revision. **The Operating Committee approved this proposed approach with 0 objections and 0 abstentions.** Additional Dynamic Transfer education will be provided to OC members at an OC Special Session scheduled for February 24, 2016. The Operating Committee will be asked to endorse these changes at the March OC meeting.

7. **Regional Transmission and Energy Scheduling Practices Changes**

Mr. Chris Pacella, PJM, reviewed proposed changes to the Regional Transmission and Energy Scheduling Practices document. The proposed changes were driven by the gas/market timeline alignment effort, as well as the generator offer flexibility proposals. The changes impact Sections 1.6, 2.1.2.2 and 2.1.2.11. This review is being provided to the Operating Committee for informational purposes.

OC Subcommittee Updates

8. **System Operations Subcommittee (SOS)**

Mr. Yeddanapudi provided a summary of the most recent SOS meeting.

9. **Systems Information Subcommittee (SIS)**

Mr. Mike Del Viscio, PJM, provided a summary of the most recent SIS meeting. Included in the summary was a recommendation for the OC to sunset the Phasor Data Quality Task Force (PDQTF), as it has met its goals, and create a new quarterly special session within the SIS to continue collaboration on phasor data quality. Mr. Del Viscio also reviewed plans for an upcoming survey to evaluate SIS efforts and provide feedback. The survey will be made available to SIS and OC members in mid-February.

10. **System Restoration Coordinators Subcommittee (SRCS)**

The SRCS had not met since the last OC meeting. The next SRCS meeting is scheduled for February 11, 2016.

11. **Metering Task Force (MTF)**

Ms. Nancy Huang, PJM, provided a summary of MTF activity since the last OC meeting.

Primary Frequency Response Discussion

12. **PJM RTO Primary Frequency Response**

Mr. Dave Souder led a discussion around Primary Frequency Response (Governor Response). A look back at past frequency response communications was provided, including an overview of the recently distributed GO governor survey. The [NERC Industry Advisory](#) on Generator Governor Frequency Response was then reviewed, along with the Manual 14D updates which were made in response to the NERC advisory. Education on the topic of frequency response in system restoration was then provided. Future OC agenda items related to Primary Frequency Response are expected, including a summary of the GO survey results at the May OC meeting.

Tool and Informational Updates

13. Review of Operating Metrics

Mr. Dave Souder reviewed the PJM Operating Metrics Slides, updated with January metrics data. Metrics included PJM's load forecast error, BAAL performance, transmission / generation outage statistics, and Perfect Dispatch performance.

14. NERC Lessons Learned

Mr. Phil D'Antonio reviewed 3 recently posted NERC Lessons Learned on the following topics:

- SOL and IROL Monitoring Tool Leads to Unnecessary Manual Load Shedding
- Control Network Communication Path
- Human Error Leads to Evacuation of Primary Control Room

15. Pricing Interface Update

There were no new or updated Closed Loop Interfaces implemented since the last OC.

16. Generator Cold Weather Testing Update

Mr. Schweizer provided an update on the Generator Cold Weather Testing efforts. Testing was extended into the second week of January due to the mild December temperatures, and high number of resulting test cancellations. A comparison of this winter's testing statistics compared to last winter showed a decrease in the number of units tested, but an increase in the total MWs tested. Total success rate was calculated to be 97% by unit count, and 98% by MW total.

17. NERC and Regional Coordination Update

Mr. Bill Temple, PJM, provided an update on NERC, SERC and RFC standards and other pertinent regulatory and compliance information, and solicited feedback from the members on the N&RC departmental efforts. There are currently several standards under development including BAL-005-1, BAL-006-2, FAC-001-3, IRO-018-2 and TOP-010-2. Standards subject to future enforcement were also reviewed, including a number of BAL, COM, MOD, PER and PRC standards which become enforceable on July 1, 2016.

18. Grid Security Drill

Mr. LeRoy Bunyon, PJM, provided details of the annual grid security exercise scheduled for November 9, 2016. A kickoff meeting will be held at PJM sometime in May 2016.

Capacity Performance

19. Unit Specific Operating Parameters vs. Real-Time Values

[Unit Parameters/Values – Stakeholder Venues – Topics #2 and 3](#)

Ms. Alpa Jani, PJM, reviewed additional details related to the Unit Specific Parameter Adjustment Process. The review included a change in the definition of Minimum Downtime, and the transition plan for implementing the change. Stakeholders were also informed that the proposed Soak Time parameter will be defined within Manual 11, but will not be added to eMKT/Markets Gateway, and will not be considered a parameter limited value for June 1, 2016. Mr. Tong Zhao, PJM, then provided a demo of the process for entering Parameter Limited Exceptions within the Markets Gateway tool.

Finally, Mr. Mike Bryson, PJM, reviewed several Performance Assessment Hour examples involving the use of Real Time Values.

20. Performance Assessment Hour Education

Ms. Rebecca Stadelmeyer, PJM, review educational materials related to Performance Assessment Hour. The materials incorporated a table of resource types, and their expected vs. actual performance over the next few delivery years as the Capacity Performance product is implemented. Additional Performance Assessment Hour scenarios were also reviewed.

21. Performance Assessment Hour Ramp Rate

[Unit Parameters/Values – Stakeholder Venues](#) – Topic #1

Ms. Rebecca Stadelmeyer reviewed an updated solution proposal to the Ramp Rate problem statement. The initial proposal involved PAH ramp rate limited dispatch signal where the ramp rate was determined based on a comparison between inputted and historical average ramp rate. The new proposal looks the same for long-term implementation purposes, but the short-term plan would be for GOs to update their ramp rate value in Markets Gateway by April 1, 2016, and have PJM / IMM review each value. PJM will be holding a Special Session of the OC on February 24, 2016 to continue discussions around several current topics. During this Special Session, the proposed Ramp Rate solution will be presented to OC members as an official First Read.

Future Meeting Dates

March 8, 2016	9:00 a.m.	PJM Interconnection - Conference and Training Center
April 5, 2016	9:00 a.m.	PJM Interconnection - Conference and Training Center
May 10, 2016	9:00 a.m.	PJM Interconnection - Conference and Training Center
June 7, 2016	9:00 a.m.	PJM Interconnection - Conference and Training Center
July 12, 2016	9:00 a.m.	PJM Interconnection - Conference and Training Center
August 9, 2016	9:00 a.m.	PJM Interconnection - Conference and Training Center
September 13, 2016	9:00 a.m.	PJM Interconnection - Conference and Training Center
October 4, 2016	9:00 a.m.	PJM Interconnection - Conference and Training Center
November 1, 2016	9:00 a.m.	PJM Interconnection - Conference and Training Center
December 13, 2016	9:00 a.m.	PJM Interconnection - Conference and Training Center

Author: Jeff McLaughlin

In Attendance (In Person)

Last Name	First Name	Company	Sector
Bryson (Chair)	Mike	PJM Interconnection, LLC	Not Applicable
McLaughlin (Secretary)	Jeffrey	PJM Interconnection, LLC	Not Applicable
Benchek	Jim	FirstEnergy Solutions Corporation	Transmission Owner
Blair	Tom	Monitoring Analytics, LLC	Not Applicable
Bleiweis	Bruce	DC Energy LLC	Other Supplier

Foladare	Kenneth	IMG Midstream LLC	Generation Owner
Garnett	Bryan	Duke Energy	Transmission Owner
Greiner	Gary	PSEG Energy Resources and Trade LLC	Other Supplier
Hackman	Harry	Primary Power LLC	Other Supplier
Hagaman	Derek	GT Power Group	Not Applicable
Hastings	David	Market Interconnection LLC	Not Applicable
Horstmann	John	Dayton Power & Light Company	Transmission Owner
Kogut	George	New York Power Authority	Other Supplier
Lieberman	Steven	Old Dominion Electric Cooperative	Electric Distributor
Lukowski	Kenneth	Powercosts, Inc.	Not Applicable
Midgley	Sharon	Exelon Business Services	Transmission Owner
Pratzon	David	GT Power Group	Not Applicable
Scarpignato	David	Calpine Energy Services LP	Generation Owner
Trayers	Barry	Citigroup Energy, Inc.	Other Supplier
Weaver	David	Exelon	Transmission Owner

In Attendance (Via Conference Call)

Last Name	First Name	Company	Sector
Ainspan	Malcolm	Energy Curtailment Specialists, Inc.	Other Supplier
Barker	Jason	Exelon	
Berger	Ken	Dominion	
Blackshear	David	Gridforce Energy Management, LLC	Other Supplier
Bolan	Martin	First Energy Solutions	
Bonner	Charles	Dominion Virginia Power	

Borgatti	Michael	Gable and Associates	Not Applicable
Buhler	Tom	Rockland Electric Company	Transmission Owner
Campbell	Bruce	EnergyConnect, Inc.	Other Supplier
Carlson	Trent	GridLiance	
Carmean	Gregory	OPSI	Not Applicable
Cicero	Nick	FirstEnergy Solutions Corporation	
Cocco	Michael	Old Dominion Electric Cooperative	Electric Distributor
Coffman Smith	Andrew	SNL Financial	Not Applicable
Cox	Jason	Dynegy Marketing and Trade, LLC	Generation Owner
Cox	Phil	American Electric Power	
Coyle	Billy	Dominion	
Currier	Jeff	Dominion	
D'Alessandris	Lou	FirstEnergy Solutions Corporation	
Davis	Connie	City of Cleveland, DPU	Electric Distributor
DeLosa	Joe	State of Delaware	Not Applicable
DeNevas	Joe	Potomac Electric Power Company	
DeVitto	Ralph	Rockland Electric Company	Transmission Owner
Duan	Robert	Ontario Power Generation	Other Supplier
Dugan	Chuck	East Kentucky Power Cooperative	Transmission Owner
Esposito-Hils	Pati	TransCanada Power Marketing Ltd.	Other Supplier
Farber	John	State of Delaware	Not Applicable
Feierabend	Rick	Dominion	
Filomena	Guy	Customized Energy Solutions, Ltd.*	Not Applicable

Fitch	Neal	NRG Power Marketing LLC	Generation Owner
Garavaglia	John	Commonwealth Edison Company	Transmission Owner
Gebele	Don	Dayton Power & Light Company	Transmission Owner
Gebolys	Debbie	Other	Not Applicable
Godson	Gloria	Pepco Holdings	
Gouda	John	Old Dominion Electric Cooperative	Electric Distributor
Greening	Michele	PPL EnergyPlus, L.L.C.	Transmission Owner
Griffiths	Dan	Consumer Advocates of PJM States	Not Applicable
Herel	Suzanne	RTO Insider	Not Applicable
Hoatson	Tom	LS Power	
Hostetler	Tim	Appalachian Power Company	Transmission Owner
Hunter	Andy	First Energy Solutions Corporation	Transmission Owner
Jardot	Gina	Essential Power Rock Springs, LLC	Transmission Owner
Johnson	Carl	Customized Energy Solutions, Ltd.*	Not Applicable
Kowalczyk	Nick	Rockland Electric Company	Transmission Owner
Levine	Jeffrey	GDF SUEZ Energy	
Liang-Nicol	Cecilia	First Energy Solutions Corporation	Transmission Owner
Libbos	Robin	FirstEnergy Solutions Corporation	Transmission Owner
Liu-Raufer	Phyllis	Public Service Electric & Gas	
Lowe	Connie	Dominion Virginia Power	Not Applicable
Ma	Alex	Invenergy, LLC	Generation Owner
Mabry	David	McNees Wallace & Nurick LLC	Not Applicable
Markiewicz	Cindy	Allegheny Power	Transmission Owner

McEachern	Ben	GDF SUEZ Energy North America	Other Supplier
Meekins	Alan	Dominion Resources, Inc.	
Moerner	Lisa	NedPower Mount Storm, LLC	Generation Owner
Mota	Virginia	Swiss Re Group	
Norton	Chris	American Municipal Power, Inc.	Electric Distributor
O'Connell	Bob	Main Line Electricity Market Consultants	Not Applicable
O'Leary	Christopher	PSEG Energy Resources and Trade LLC	Transmission Owner
Ondayko	Brock	AEP Energy Supply	Generation Owner
Pakela	Gregory	DTE Energy Supply, Inc.	Other Supplier
Patten	Kevin	AEP Energy, Inc.	Other Supplier
Pleiss	Bob	Constellation Energy	
Price	Russel	UGI Utilities, Inc.	Transmission Owner
Rajan	Abhijit	Dominion	
Rutigliano	Tom	Achieving Equilibrium LLC	Other Supplier
Sasser	Jonathan	Customized Energy Solutions, Ltd.*	Not Applicable
Schum	Alice	Illinois Municipal Electric Agency	
Scoglietti	Barbara	Tangent Energy Solutions, Inc.	Other Supplier
Siegfried	Trevor	PPL Electric Utilities	
Sillin	John	Federal Energy Regulatory Commission	Not Applicable
Slade	Louis	Dominion Virginia Power	Transmission Owner
Smith	Jacque	ReliabilityFirst Corporation	Not Applicable
Stefanowicz	Vince	Talen Energy Marketing, LLC	Generation Owner
Summers	Ted	Direct Energy, LP	Other Supplier

Tatum	Ed	American Municipal Power, Inc.	Electric Distributor
Wetzel	Ray	Constellation Energy	
Wharton	Ron	Public Service Electric & Gas	Transmission Owner
White	Doug	North Carolina Electric Membership Corporation	Electric Distributor
Whitehead	Jeff	Direct Energy Business	Other Supplier
Wilhite	Chad	First Energy Solutions Corporation	
Wilmoth	Emily	Dominion	
Wisersky	Megan	Madison Gas & Electric Company	Other Supplier
Yu	Joel	Consolidated Edison	Not Applicable

PJM Attendees

Last Name	First Name	Company	Sector
Antonelli	Diane	PJM Interconnection, LLC	Not Applicable
Bhavaraju	Murty	PJM Interconnection, LLC	Not Applicable
Boyle	Glen	PJM Interconnection, LLC	Not Applicable
Bruno	Pat	PJM Interconnection, LLC	Not Applicable
Burlew	Jim	PJM Interconnection, LLC	Not Applicable
Ciabattoni	Joe	PJM Interconnection, LLC	Not Applicable
Coll	Daniel	PJM Interconnection, LLC	Not Applicable
Coyne	Suzanne	PJM Interconnection, LLC	Not Applicable
D'Antonio	Phil	PJM Interconnection, LLC	Not Applicable
Del Viscio	Michael	PJM Interconnection, LLC	Not Applicable
DeMarco	Brian	PJM Interconnection, LLC	Not Applicable
Dirani	Rami	PJM Interconnection, LLC	Not Applicable

Driscoll	Mary Ellen	PJM Interconnection, LLC	Not Applicable
Esterly	Terri	PJM Interconnection, LLC	Not Applicable
Fabiano	Janell	PJM Interconnection, LLC	Not Applicable
Fahr	Suzie	PJM Interconnection, LLC	Not Applicable
Fernandez	Ray	PJM Interconnection, LLC	Not Applicable
Ford	Adrien	PJM Interconnection, LLC	Not Applicable
Hauske	Tom	PJM Interconnection, LLC	Not Applicable
Heimback	Mark	PJM Interconnection, LLC	Not Applicable
Holland	Risa	PJM Interconnection, LLC	Not Applicable
Hsia	Eric	PJM Interconnection, LLC	Not Applicable
Huang	Nancy	PJM Interconnection, LLC	Not Applicable
Hugee	Jacquelynn	PJM Interconnection, LLC	Not Applicable
Jani	Alpa	PJM Interconnection, LLC	Not Applicable
Kenney	Susan	PJM Interconnection, LLC	Not Applicable
Langbein	Pete	PJM Interconnection, LLC	Not Applicable
Lawruk	Mike	PJM Interconnection, LLC	Not Applicable
Martini	Danielle	PJM Interconnection, LLC	Not Applicable
Morelli	Lisa	PJM Interconnection, LLC	Not Applicable
Nice	Ryan	PJM Interconnection, LLC	Not Applicable
O'Neill	Jack	PJM Interconnection, LLC	Not Applicable
Olaleye	Michael	PJM Interconnection, LLC	Not Applicable
Pacella	Christopher	PJM Interconnection, LLC	Not Applicable
Patel	Anita	PJM Interconnection, LLC	Not Applicable

Phillips	Darlene	PJM Interconnection, LLC	Not Applicable
Rushing	Joseph	PJM Interconnection, LLC	Not Applicable
Schweizer	David	PJM Interconnection, LLC	Not Applicable
Seiler	Ken	PJM Interconnection, LLC	Not Applicable
Smith	Melissa	PJM Interconnection, LLC	Not Applicable
Souder	David	PJM Interconnection, LLC	Not Applicable
Souder	Rich	PJM Interconnection, LLC	Not Applicable
Stadelmeyer	Rebecca	PJM Interconnection, LLC	Not Applicable
Tacka	Natalie	PJM Interconnection, LLC	Not Applicable
Tam	Simon	PJM Interconnection, LLC	Not Applicable
Temple	Bill	PJM Interconnection, LLC	Not Applicable
Tribulski	Jen	PJM Interconnection, LLC	Not Applicable
Velasco	Cheryl Mae	PJM Interconnection, LLC	Not Applicable
Williams	Stan	PJM Interconnection, LLC	Not Applicable
Yeddanapudi	Sree	PJM Interconnection, LLC	Not Applicable