

Markets and Reliability Committee  
The Chase Center on the Riverfront, Wilmington, DE  
October 26, 2017  
9:00 a.m. – 2:10 p.m. EPT

## Administration

Ms. Suzanne Daugherty and Mr. Dave Anders welcomed the participants, and provided the antitrust and code of conduct announcements.

## Endorsements/Approvals

### 1. Draft Minutes

Minutes of the September 28, 2017 meeting of the Markets and Reliability Committee (MRC) were **approved** by acclamation with no objections or abstentions.

### 2. PJM Manuals

- A. Ms. Lisa Morelli presented proposed Manual 11: Energy & Ancillary Services and proposed revisions to the Operating Agreement (OA) and Tariff associated with capping of intraday offers.
- B. Mr. Rami Dirani presented proposed revisions to Manual 11: Energy & Ancillary Services associated with the offer verification process and offer capping logic for the implementation of Order 831: Energy Offer Verification. Dr. Catherine Tyler, Monitoring Analytics, and Mr. Dirani discussed ongoing dialogue between PJM and the Independent Market Monitor regarding some specific details of the proposed Manual 11 revisions.
- C. Mr. Mike Herman presented proposed revisions to Manual 14B: Regional Transmission Planning Process to add information related to the contingency definitions.
- D. Mr. John Reynolds presented proposed revisions to Manual 19: Load Forecasting and Analysis to clarify when load drop estimates are produced and the required periodic review of the Manual.

Following discussion, items 2.A, and 2.C and 2.D were **endorsed** by acclamation with no objections and one abstention. Item 2.B was **endorsed** by acclamation with 13 objections and two abstentions. There were no objections to moving approval/endorsement of OA and Tariff revisions associated with capping of intraday offers from the standard agenda to the consent agenda for the October 26, 2017 Members Committee (MC) meeting.

### 3. Balancing Ratio

Mr. Adam Keech discussed Tariff revisions for calculation of the Balancing Ratio used in determination of the Market Seller Offer Cap for use in the 2018 Base Residual Auction. He also presented a proposed Problem Statement and Issue Charge concerning the same for subsequent auctions. Following discussion the committee **endorsed** the proposed Tariff revisions by acclamation with no objections and 10 abstentions, and **approved** the Problem Statement and Issue Charge by acclamation with no objections and one abstention. There were no objections to moving endorsement

of the Tariff revisions from the standard agenda to the consent agenda for the October 26, 2017 MC meeting.

4. Distributed Energy Resources Update

Ms. Suzanne Daugherty noted that the proposed charter revision to convert the effort to a subcommittee will be considered at a future MRC meeting following Market implementation Committee voting on the proposed charter revision.

5. 2017 Installed Reserve Margin Study Results

Mr. Tom Falin reviewed the 2017 Installed Reserve Margin (IRM) study results. Following discussion the committee **endorsed** the study results by acclamation with no objections and no abstentions. There were no objections to moving approval of the study results from the standard agenda to the consent agenda for the October 26, 2017 MC meeting.

6. Restoration Planning Generator Data

Mr. David Schweizer presented proposed OA revisions associated with PJM sharing of restoration planning generator data with Transmission Owners. Following discussion the committee **endorsed** the proposed OA revisions by acclamation with no objections and no abstentions.

## First Readings

7. 2018 Day Ahead Scheduling Reserve (DASR) Requirement

Mr. Eric Endress presented proposed revisions to the 2018 DASR requirement. The committee will be asked to endorse the proposed revisions at its next meeting.

8. Credit Requirements for Regulation

Mr. Hal Loomis presented proposed Tariff revisions related to a proposed change in credit requirements for regulation resources. The committee will be asked to endorse the Tariff revisions at its next meeting.

9. FTR Credit Requirements for Transmission Upgrades

Mr. Hal Loomis presented proposed revisions to FTR credit requirements to reduce exposure posed by congestion reductions resulting from major transmission upgrades. The committee will be asked to endorse the proposal at its next meeting. Ms. Daugherty noted that endorsement votes will be taken at both the MRC and MC at their December 7, 2017 meetings.

10. Price Responsive Demand

Mr. Pete Langbein presented three proposals developed by the Demand Response Subcommittee to address Price Responsive Demand. The committee will be asked to endorse a proposal at its next

meeting. Ms. Daugherty noted that endorsement votes will be taken at both the MRC and MC at their December 7, 2017 meetings.

## 11. PJM Manuals

- A. Mr. Yuri Smolanitsky presented proposed revisions to Manual 03: Transmission Operations. The committee will be asked to endorse the manual revisions at its next meeting.
- B. Mr. David Schweizer presented proposed revisions to Manual 10: Pre-Scheduling Operations. The committee will be asked to endorse the manual revisions at its next meeting.
- C. Mr. Chris Pilog presented proposed revisions to Manual 13: Emergency Operations. The committee will be asked to endorse the manual revisions at its next meeting.
- D. Mr. David Schweizer presented proposed revisions to Manual 14D: Generator Operational Requirements. The committee will be asked to endorse the manual revisions at its next meeting.
- E. Ms. Terri Esterly presented a first read of revisions to Manual 18: PJM Capacity Market, and Mr. Ray Fernandez presented a first read of revisions to Manuals 11: Energy & Ancillary Services, 27: Open Access Transmission Tariff Accounting, 28: Operating Agreement Accounting and 29: Billing associated with the implementation of Five-Minute Settlements. The committee will be asked to endorse the manual revisions at its next meeting.

## Informational Updates

### PJM Technologies

Ms. Daugherty announced that PJM Technologies, Inc., PJM Interconnection's wholly-owned non-FERC regulated subsidiary, has been engaged by the province of Zhejiang, China, to help it develop the wholesale electricity market design and market rules for that province. This work is commencing during October 2017 and is expected to take about 20 months. It will be conducted in collaboration with China Electric Power Research Institute.

## 12. Capacity Construct / Public Policy Sr. Task Force (CCPPSTF)

Mr. Dave Anders provided an informational update on the activities of the CCPPSTF.

## 13. Ohio Valley Electric Corporation (OVEC) Integration

Mr. Scott Cunningham, OVEC, discussed integration of the OVEC.

## 14. Transmission Facilities Access Form Security

Mr. Ron DeLoach discussed added measures to secure the Transmission Facilities spreadsheets on PJM.com.

## 15. Work Plan Review

Mr. Anders discussed review of work plans for ongoing stakeholder process issues.

## 16. Winter Season Resource Adequacy and Capacity Requirements (1:10-1:40)

Mr. Tom Falin discussed work of the Resource Adequacy Analysis Subcommittee on the Winter Season Resource Adequacy and Capacity Requirements Problem Statement and Issue Charge.

## 17. PJM.com Updates (1:40-1:50)

Ms. Tawnya Luna provided an update on the upcoming revisions to the PJM.com website.

### Future Agenda Items (1:50)

No new future agenda items were identified.

### Future Meeting Dates

December 7, 2017	9:00 a.m.	Philadelphia, PA
December 21, 2017	9:30 a.m.	Wilmington, DE

Author: D. A. Anders

### CHAIR/SECRETARY

Daugherty	Suzanne	PJM Interconnection, LLC	Not Applicable
Anders	David	PJM Interconnection, LLC	Not Applicable

### VOTING PARTICIPANTS

Last Name	First Name	Company	Sector
Barker	Jason	Exelon Business Services Company, LLC	Transmission Owner
Benchek	Jim	American Transmission Systems, Inc.	Transmission Owner
Brodbeck	John	EDP Renewables North America, LLC	Generation Owner
Bruce	Susan	Letterkenny Industrial Development Authority - PA	Electric Distributor
Bruce	Susan	Kimberly-Clark Corporation	Generation Owner
Bruce	Susan	Industrial Energy Users-Ohio	Other Supplier
Bruce	Susan	Trustees of the University of Pennsylvania	End User Customer
Bruce	Susan	MeadWestvaco Corporation	End User Customer
Bruce	Susan	Wellsboro Electric Company	Electric Distributor
Bruce	Susan	ArcelorMittal USA LLC	End User Customer
Bruce	Susan	Linde, LLC	End User Customer
Bruce	Susan	Praxair, Inc.	End User Customer

Bruce	Susan	Lehigh Portland Cement Company	End User Customer
Bruce	Susan	Air Products & Chemicals, Inc.	End User Customer
Bruce	Susan	Gerdau Ameristeel Energy, Inc.	Other Supplier
Bruce	Susan	Procter & Gamble Paper Products Company (The)	Generation Owner
Campbell	Bruce	MidAtlantic Power Partners, LLC	Other Supplier
Campbell	Bruce	Enerwise Global Technologies, Inc.	Other Supplier
Campbell	Bruce	Enerwise	Other Supplier
Crystle	Gil	UGI Development Company	Generation Owner
Davis	James	Virginia Electric & Power Company	Transmission Owner
Davis	James	Dominion Energy	Transmission Owner
Dugan	Chuck	East Kentucky Power Cooperative, Inc.	Transmission Owner
Ellison	Alan	Grays Ferry Cogeneration Partnership	Generation Owner
Fitch	Neal	NRG Power Marketing, LLC	Generation Owner
Fondacci	Luis	North Carolina Electric Membership Corporation	Electric Distributor
Ford	Adrien	Old Dominion Electric Cooperative	Electric Distributor
Garnett	Bryan	Duke Energy Business Services LLC	Transmission Owner
Guerry	Katie	EnerNOC, Inc.	Other Supplier
Greiner	Gary	Public Service Electric & Gas Company	Transmission Owner
Helms	Joseph	Rainbow Energy Marketing Corporation	Other Supplier
Hoatson	Tom	Riverside Generating, LLC	Generation Owner
Hoatson	Tom	West Deptford Energy, LLC	Generation Owner
Hoatson	Tom	Riverside Generating	Generation Owner
Hohenshilt	Jennifer	Talen Energy Marketing, LLC	Generation Owner
Horstmann	John	Dayton Power & Light Company (The)	Transmission Owner
Horton	Dana	Appalachian Power Company	Transmission Owner
Hurwizh	Mark	Elliott Bay Energy Trading LLC	Other Supplier
Hyzinski	Thomas	Dynegy Marketing and Trade, LLC	Generation Owner
Johnson	Carl	Buckeye Power, Inc.	Electric Distributor
Johnson	Carl	WPPI Energy	Other Supplier
Johnson	Carl	North Carolina Municipal Power Agency Number 1	Other Supplier
Johnson	Carl	Madison Gas & Electric Co.	Other Supplier
Johnson	Carl	Energy Cooperative Association of Pennsylvania (The)	Other Supplier
Johnson	Carl	Town of Williamsport (The)	Electric Distributor
Johnson	Carl	Thurmont Municipal Light Company	Electric Distributor
Johnson	Carl	Borough of Mont Alto, Pennsylvania	Electric Distributor



Johnson	Carl	Hagerstown Light Department	Electric Distributor
Johnson	Carl	Illinois Municipal Electric Agency	Electric Distributor
Johnson	Carl	Northern Virginia Electric Cooperative (NOVEC)	Electric Distributor
Johnson	Carl	American Municipal Power, Inc.	Electric Distributor
Johnson	Carl	Indiana Municipal Power Agency	Generation Owner
Johnson	Carl	Easton Utilities Commission	Electric Distributor
Johnson	Carl	City of Dover, Delaware	Electric Distributor
Johnson	Carl	Delaware Municipal Electric Corporation, Inc.	Electric Distributor
Johnson	Carl	Borough of Chambersburg	Electric Distributor
Johnson	Carl	Central Virginia Electric Cooperative	Electric Distributor
Johnson	Carl	Blue Ridge Power Agency, Inc.	Electric Distributor
Johnson	Carl	Galt Power, Inc.	Other Supplier
Johnson	Carl	Allegheny Electric Cooperative, Inc.	Electric Distributor
Johnson	Carl	Northern Illinois Municipal Power Agency	Electric Distributor
Kelly	Stephen	Brookfield	Other Supplier
Kilgallen	Kevin	Avangrid Renewables, LLC	Generation Owner
Kogut	George	New York Power Authority	Other Supplier
Lieberman	Steven	American Municipal Power, Inc.	Electric Distributor
Long	Scott	Allegheny Electric Cooperative, Inc.	Electric Distributor
Melnyk	Markian	Atlantic Grid Operations A, LLC	Other Supplier
Phillips	Marjorie	Direct Energy Business LLC	Other Supplier
Poulos	Greg	Delaware Division of the Public Advocate	End User Customer
Poulos	Greg	Pennsylvania Office of Consumer Advocate	End User Customer
Poulos	Greg	Illinois Citizen Utility Board	End User Customer
Poulos	Greg	Office of the People's Counsel for the District of Columbia	End User Customer
Poulos	Greg	Consumer Protection and Advocate Division of the Tennessee Attorney General	End User Customer
Poulos	Greg	New Jersey Division of Rate Counsel	End User Customer
Poulos	Greg	Maryland Office of People's Counsel	End User Customer
Poulos	Greg	West Virginia Consumer Advocate Division	End User Customer
Poulos	Greg	Indiana Office of Utility Consumer Counselor (IN OUCC)	End User Customer
Poulos	Greg	Office of the Attorney General, Kentucky	End User Customer
Poulos	Greg	Consumer Advocates of the PJM States	End User Customer
Pratzon	David	Essential Power Rock Springs, LLC	Transmission Owner
Pratzon	David	Eastern Generation, LLC	Generation Owner

Pratzon	David	Wheelabrator Frackville Energy Co., Inc.	Generation Owner
Prokop	Brenda	ITC Interconnection LLC	Transmission Owner
Rohrbach	John	Southern Maryland Electric Cooperative	Electricity Distributor
Rushing	Nathan	CPV Power Holdings	Generation Owner
Stewart	Travis	Gabel Associates	Not Applicable
Trayers	Barry	Citigroup Energy, Inc.	Other Supplier
Wadsworth	Joe	Vitol	Other Supplier
Wicks	Tonja	Duquesne Light Company	Transmission Owner
Wilkie	Brian	Rockland Electric Company	Transmission Owner

## NON-VOTING PARTICIPANTS

Last Name	First Name	Company	Sector
Borgatti	Michael	Gable & Associates	Not Applicable
Carmean	Gregory	OPSI	Not Applicable
Ainspan	Malcolm	NRG Curtailment Solutions, Inc.	Other Supplier
Beller	Amy	Simpson Thatcher & Bartlett	Not Applicable
Bolan	Martin	FirstEnergy Solutions Corp.	Transmission Owner
Chifling	Brian	OVEC	Not Applicable
Chintapalli	Raj	BP Energy	Other Supplier
Creem	Elliott	Itron	Not Applicable
Delosa	Joe	Delaware Public Service Commission	Not Applicable
Depillo	Ray	Public Service Electric & Gas Company	Transmission Owner
Dillon	Matthew	UGI Development Company	Generation Owner
Dolan	Ryan	American Municipal Power	Electric Distributor
Drom	Rick	Eckert Seamans	Not Applicable
Farber	John	Delaware Public Service Commission	Not Applicable
Filomena	Guy	Customized Energy Solutions, Ltd.*	Not Applicable
Foladare	Kenneth	Tangibl	Not Applicable
Gilani	Rehan	ConEdison Energy	Other Supplier
Godson	Gloria	Exelon Business Services Company, LLC	Transmission Owner
Greening	Michele	PPL Electric Utilities Corp.	Transmission Owner
Harmon	Mike	Ameren	Not Applicable
Haugh	Michael	The Ohio Consumer Counsel	End Use Customer
Heidorn	Richard	RTO Insider	Not Applicable
Heinle	Frederick	DC Office of the People's Counsel	End Use Customer

Heisey	Bradley	Tenaska	Generation Owner
Holland	Cynthia	New Jersey Board of Public Utilities	Not Applicable
Hudis	Gabriella	Gabel Associates	Not Applicable
Huntoon	Steve	Energy Counsel LLP	Not Applicable
Hyatt	John	Monitoring Analytics	Not Applicable
Janicki	Diane	Boston Energy Trading & Marketing	Generation Owner
Jardot	Gina	Essential Power Rock Springs, LLC	Transmission Owner
Jett	William	Duke Energy	Transmission Owner
Rohrbach	John	Southern Maryland Electric Cooperative	Electric Distributor
Tigue	John	New York State Electric Gas	Other Supplier
Jones	Ryan	Alleghany Electric Cooperative	Electric Distributor
Kaczanowski	Marak	Baltimore Gas & Electric	Transmission Owner
Kormos	Mike	Exelon	Transmission Owner
Laios	Takis	American Electric Power	Electric Distributor
Leasure	Jill	Keystone Conemaugh Project Office	Not Applicable
Lee	Michael	FERC	Not Applicable
Liang-Nicole	Cecilia	FirstEnergy Solutions Corp.	Transmission Owner
Logan	Sharon	FERC	Not Applicable
Marinelli	Richard	Public Service Electric & Gas Company	Transmission Owner
Markiewicz	Cynthia	FirstEnergy Solutions Corp.	Transmission Owner
Martin	Valerie	FERC	Not Applicable
Mcalister	Lisa	American Municipal Power	Electric Distributor
Mcbride	Suzanne	OVEC	Not Applicable
Merola	Jackie	Calpine	Other Supplier
Midgley	Sharon	Exelon Business Services Company, LLC	Transmission Owner
Miller	John	CoMed	Transmission Owner
Moncayo	Jorge	FERC	Not Applicable
Norton	Chris	American Municipal Power	Electric Distributor
O'Connell	Robert	PPGI Fund A/B Development, LLC.	Generation Owner
Ondayko	Brock	Appalachian Power Company	Transmission Owner
Pakela	Gregory	DTE Energy Trading, Inc.	Other Supplier
Pelletier	Eveline	HQ Energy Services	Other Supplier
Peoples	John	Duquesne Light Company	Transmission Owner
Price	Mark	DC Energy, LLC	Other Supplier
Rajan	Abhijit	Dominion Energy	Transmission Owner



Riehl	John	FERC	Not Applicable
Rothey	Kristin	American Municipal Power	Electric Distributor
Ruck	Andrew	Public Service Electric & Gas Company	Transmission Owner
Rutigliano	Tom	EMC	Other Supplier
Sasser	Jonathan	Customized Energy Solution	Not Applicable
Schreim	Morris	Maryland Public Service Commission	Not Applicable
Schneider	Jennifer	FirstEnergy Solutions Corp.	Transmission Owner
Schultheis	Daniel	Exelon Business Services Company, LLC	Transmission Owner
Shanker	Roy	East Coast Power	Generation Owner
Sillin	John	FERC	Not Applicable
Slagel	Ron	MICS	
Steele	Robert	Hyllgarth Energy	Not Applicable
Stone	Andy	Gabel Associates	Not Applicable
Tangirala	Subha	ABB	Not Applicable
Thomson	Heather	MAREC	Not Applicable
Tyler	Catherine	Monitoring Analytics	Not Applicable
Vanderlaan	Bill	Illinois Commerce Commission	Not Applicable
Vargo	Daniel	Allegheny Electric Cooperative	Electric Distributor
Vitiello	Jacki	Dominion Energy	Generation Owner
Walker	Jennifer	Exelon	Transmission Owner
Weber	Adam	Ameren	Not Applicable
Whitehead	Jeffrey	GT Power Group	Not Applicable
Wilhite	Chad	FirstEnergy Solutions Corp.	Transmission Owner
William	Amber	NYSEG	Other Supplier
Wilson	Bram	Diamond State Generation	Generation Owner
Wilson	James	Wilson Energy Economics	Not Applicable
Wisersky	Megan	Madison G&E	Other Supplier
Xenopoulos	Damon	SMXB	Not Applicable

## PJM ATTENDEES

Last Name	First Name	Company	Sector
Almgren	Ake	PJM Interconnection	Not Applicable
Aung	Thinzar	PJM Interconnection	Not Applicable
Barrett	Francis	PJM Interconnection	Not Applicable
Bastian	Jeff	PJM Interconnection	Not Applicable

Berner	Aaron	PJM Interconnection	Not Applicable
Boyle	Glen	PJM Interconnection	Not Applicable
Brown	Rich	PJM Interconnection	Not Applicable
Bryson	Mike	PJM Interconnection	Not Applicable
Budney	David	PJM Interconnection	Not Applicable
Buehler	Susan	PJM Interconnection	Not Applicable
Burdis	Tim	PJM Interconnection	Not Applicable
Carroll	Rebecca	PJM Interconnection	Not Applicable
Chao	Hungpo	PJM Interconnection	Not Applicable
Coyne	Suzanne	PJM Interconnection	Not Applicable
Croop	Danielle	PJM Interconnection	Not Applicable
Cummings	Bridgid	PJM Interconnection	Not Applicable
DeLoach	Ron	PJM Interconnection	Not Applicable
Dirani	Rami	PJM Interconnection	Not Applicable
Dotter	Ray	PJM Interconnection	Not Applicable
Drauschak	Lisa	PJM Interconnection	Not Applicable
Driscoll	Maryellen	PJM Interconnection	Not Applicable
Duane	Vince	PJM Interconnection	Not Applicable
Egan	Amanda	PJM Interconnection	Not Applicable
Endress	Eric	PJM Interconnection	Not Applicable
Esterly	Theresa	PJM Interconnection	Not Applicable
Fabiano	Janell	PJM Interconnection	Not Applicable
Falin	Tom	PJM Interconnection	Not Applicable
Fernandez	Ray	PJM Interconnection	Not Applicable
Foster	Denise	PJM Interconnection	Not Applicable
Gledhill	Andrew	PJM Interconnection	Not Applicable
Harhai	Michelle	PJM Interconnection	Not Applicable
Hauske	Thomas	PJM Interconnection	Not Applicable
Hendrzak	Chantal	PJM Interconnection	Not Applicable
Herling	Steve	PJM Interconnection	Not Applicable
Herman	Michael	PJM Interconnection	Not Applicable
Holland	Risa	PJM Interconnection	Not Applicable
Hsia	Eric	PJM Interconnection	Not Applicable
Huge	Jaquelynn	PJM Interconnection	Not Applicable
Keech	Adam	PJM Interconnection	Not Applicable

Kelley	Michael	PJM Interconnection	Not Applicable
Kenney	Susan	PJM Interconnection	Not Applicable
Keshavamurthy	Bhavana	PJM Interconnection	Not Applicable
Koza	Frank	PJM Interconnection	Not Applicable
Langbein	Pete	PJM Interconnection	Not Applicable
Larocque	Matthew	PJM Interconnection	Not Applicable
Long	Amanda	PJM Interconnection	Not Applicable
Loomis	Hal	PJM Interconnection	Not Applicable
McGlynn	Paul	PJM Interconnection	Not Applicable
McLaughlin	Jeff	PJM Interconnection	Not Applicable
McLavery	Megan	PJM Interconnection	Not Applicable
Monzon	Stephanie	PJM Interconnection	Not Applicable
Morelli	Lisa	PJM Interconnection	Not Applicable
Murphy	Lori	PJM Interconnection	Not Applicable
Nix	Emma	PJM Interconnection	Not Applicable
O'Hara	Chris	PJM Interconnection	Not Applicable
O'Neil	Jack	PJM Interconnection	Not Applicable
Ott	Andrew	PJM Interconnection	Not Applicable
Patel	Anita	PJM Interconnection	Not Applicable
Perera	Asanga	PJM Interconnection	Not Applicable
Phillips	Darlene	PJM Interconnection	Not Applicable
Pilong	Chris	PJM Interconnection	Not Applicable
Pilong	Melissa	PJM Interconnection	Not Applicable
Pincus	Steve	PJM Interconnection	Not Applicable
Quevada	Jason	PJM Interconnection	Not Applicable
Rainer	Keith	PJM Interconnection	Not Applicable
Reynolds	John	PJM Interconnection	Not Applicable
Riley	Susan	PJM Interconnection	Not Applicable
Rocha-Garrido	Patricio	PJM Interconnection	Not Applicable
Schmitt	Jeff	PJM Interconnection	Not Applicable
Schuyler	Ken	PJM Interconnection	Not Applicable
Schweizer	David	PJM Interconnection	Not Applicable
Seiler	Ken	PJM Interconnection	Not Applicable
Slusser	Jeff	PJM Interconnection	Not Applicable
Snyder	Susan	PJM Interconnection	Not Applicable

Stefanowicz	Vincent	PJM Interconnection	Not Applicable
Tribulski	Jen	PJM Interconnection	Not Applicable
Ward	Michael	PJM Interconnection	Not Applicable
Williams	Stan	PJM Interconnection	Not Applicable