

Markets and Reliability Committee
The Chase Center on the Riverfront, Wilmington, DE
April 19, 2018
9:00 a.m. – 12:35 p.m. EPT

Administration (9:00-9:05)

Welcome, announcements and Anti-trust and Code of Conduct announcement – Ms. Suzanne Daugherty and Mr. Dave Anders

Mr. Anders addressed recent issues with PJM's teleconference provider, indicating that in the future teleconference numbers and codes will be available on the committee calendar on PJM.com only if users are logged to the website.

Mr. Anders provided an update on the work of the Energy Price Formation Sr. Task Force (EPFSTF). He discussed a recent letter from PJM President and CEO Andy Ott on behalf of the PJM Board of Managers regarding recommended adjustments to the timing of the different price formation issues under consideration. He noted discussion of the recommendations at the April 18, 2018 EPFSTF meeting which provided greater detail on the implications of the Board's recommendation, noting that there was no objection to moving forward with the proposed adjustment in timing.

Mr. Daugherty noted that Ohio Valley Electric Corporation had decided to delay their integration into PJM and a related notice had been filed with the FERC. In response to related questions received at the April 16, 2018 Members Committee Webinar, PJM posted with the April 19, 2018 Markets & Reliability Committee (MRC) meeting materials information regarding the impacts of the delay on ARRs and FTRs.

Endorsements/Approvals (9:05-10:20)

1. Draft Minutes (9:05-9:10)

Minutes of the March 22, 2018 meeting of the MRC were **approved** by acclamation with no objections or abstentions.

2. PJM Manuals (9:10-9:40)

- A. Ms. Brinda Malladi presented proposed revisions to Manual 14A New Services Request Process to clarify the language to match existing procedures.
- B. Mr. Jonathan Kern presented proposed revisions to PJM Manual 14B Regional Transmission Planning Process to correct items found during a periodic review, including a revision to the generator deliverability procedure.
- C. Mr. Ray Fernandez reviewed conforming revisions to Manual 28: Operating Agreement Accounting, to address changes based on a recent FERC Compliance Order and a technical correction for Revenue Data for Settlements calculation for generation resources.
- D. Mr. Rami Dirani reviewed conforming revisions to Manual 11: Energy & Ancillary Services Market

Operations, to correct certain provisions regarding price-based offers.

Following discussion, the proposed manual revisions in items 2A through 2.C were **endorsed** by acclamation with no objections or abstentions. Item 2.D will be discussed further at the Market Implementation Committee.

3. PJM External Capacity Filing (9:40-9:55)

Mr. Aaron Berner and Ms. Nikki Militello discussed revisions to Manual 12: Balancing Operations regarding the addition of reviews required to permit external generation to participate in PJM's market as a Pseudo-Tied generator. Following discussion, the proposed revisions were **endorsed** by acclamation with two objections and three abstentions.

4. Balancing Ratio Issue Charge (9:55-10:10)

Mr. Pat Bruno presented proposed revisions to Balancing Ratio Issue Charge that is currently being worked at the Market Implementation Committee (MIC). Following discussion, the proposed revisions were **endorsed** by acclamation with five objections and one abstention.

5. Operating Committee (OC) Charter Update (10:10-10:20)

Mr. David Souder presented proposed revisions to the OC Charter. Following discussion, the proposed revisions were **endorsed** by acclamation with no objections or abstentions.

First Readings (10:20-11:35)

6. Variable Operations & Maintenance Packages (10:20-10:40)

Ms. Melissa Pilog reviewed the solution packages endorsed at the Market Implementation Committee (MIC) to address the Variable Operations & Maintenance (VOM) Costs issue. The committee will be asked to endorse a proposal at its next meeting.

7. Operating Agreement (OA) Provision (10:40-10:50)

Mr. Dave Souder reviewed an update to the confidentiality provision of the OA to specify that PJM may share member confidential information with reliability entities in addition to NERC. The committee will be asked to endorse these updates at its next meeting.

8. PJM Manuals (10:50-11:40)

- A. Mr. Kevin Hatch presented proposed changes to Manual 36: System Restoration as a part of the periodic review process for manuals. The committee will be asked to endorse the manual revisions at its next meeting.
- B. Mr. Yuri Smolanitsky presented proposed changes to Manual 03: Transmission Operations. The committee will be asked to endorse the manual revisions at its next meeting.
- C. Mr. Keyur Patel reviewed conforming revisions to Manual 11: Energy & Ancillary Services Market Operations, related to the FERC Order on Virtual Bidding. The committee will be asked to endorse

the manual revisions at its next meeting.

- D. Mr. Peter Lamaina presented Manual 14A: New Services Request Process updates to Attachment F and G, to align with the current data submission process in Queue Point. The committee will be asked to endorse the manual revisions at its next meeting.
- E. Mr. Glenn Bray presented revisions proposed by the Relay Subcommittee's cover to cover periodic review of Manual 07: Protection Standards. The committee will be asked to endorse the manual revisions at its next meeting.

Informational Updates (11:40-12:25)

9. PC Cost Containment Update (11:40-12:00)

Ms. Janell Fabiano provided an update on the Cost Containment issue being worked through special sessions of the Planning Committee. Ms. Daugherty reviewed the process for review and voting on this issue at the May 24, 2018 MRC meeting.

10. Generation Transfer Update (12:00-12:15)

Ms. Rebecca Stadelmeyer provided an update on PJM's generation transfer efforts.

11. Reactive Transfer Interface Definition Changes (12:15-12:25)

Mr. Yuri Smolanitsky presented updated Reactive Transfer Interface definitions.

12. ComEd RAS/SPS Retirements at University Park North (12:25-12:35)

Mr. Alan Engelmann, ComEd, presented information related to the retirement of the University Park North Remedial Action Scheme.

Future Agenda Items (12:35)

No new future agenda items were identified.

Future Meeting Dates

May 24, 2018	9:30 a.m.	Valley Forge, PA
June 21, 2018	9:00 a.m.	Wilmington, DE
July 26, 2018	9:00 a.m.	Wilmington, DE
August 23, 2018	9:00 a.m.	Valley Forge, PA
September 27, 2018	9:00 a.m.	Valley Forge, PA
October 25, 2018	9:00 a.m.	Wilmington, DE
December 6, 2018	9:00 a.m.	Wilmington, DE
December 20, 2018	9:30 a.m.	Valley Forge, PA

Author: D. A. Anders

Attendees

Chair and Secretary

Last Name	First Name	Company	Sector
Daugherty	Suzanne	PJM Interconnection	Not Applicable
Anders	David	PJM Interconnection	Not Applicable

Voters

Last Name	First Name	Company	Sector
Benchek	Jim	American Transmission Systems, Inc.	Transmission Owner
Birnel	William	Westar Energy, Inc.	Other Supplier
Bruce	Susan	Air Products & Chemicals, Inc.	End User Customer
Bruce	Susan	ArcelorMittal USA LLC	End User Customer
Bruce	Susan	Gerdau Ameristeel Energy, Inc.	Other Supplier
Bruce	Susan	Industrial Energy Users-Ohio	Other Supplier
Bruce	Susan	Kimberly-Clark Corporation	Generation Owner
Bruce	Susan	Lehigh Portland Cement Company	End User Customer
Bruce	Susan	Letterkenny Industrial Development Authority - PA	Electric Distributor
Bruce	Susan	Linde, LLC	End User Customer
Bruce	Susan	MeadWestvaco Corporation	End User Customer
Bruce	Susan	Praxair, Inc.	End User Customer
Bruce	Susan	Procter & Gamble Paper Products Company (The)	Generation Owner
Bruce	Susan	Trustees of the University of Pennsylvania	End User Customer
Bruce	Susan	Wellsboro Electric Company	Electric Distributor
Campbell	Bruce	Enerwise Global Technologies, Inc.	Other Supplier
Campbell	Bruce	MidAtlantic Power Partners, LLC	Other Supplier
Davis	James	Virginia Electric & Power Company	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
Greiner	Gary	Public Service Electric & Gas Company	Transmission Owner
Guerry	Katie	EnerNOC, Inc.	Other Supplier
Helms	Joseph	Rainbow Energy Marketing Corporation	Other Supplier
Hoatson	Tom	Riverside Generating, LLC	Generation Owner
Hoatson	Tom	West Deptford Energy, LLC	Generation Owner
Horstmann	John	Dayton Power & Light Company (The)	Transmission Owner
Horton	Dana	Appalachian Power Company	Transmission Owner
Johnson	Carl	Allegheny Electric Cooperative, Inc.	Electric Distributor
Johnson	Carl	American Municipal Power, Inc.	Electric Distributor
Johnson	Carl	Blue Ridge Power Agency, Inc.	Electric Distributor

Johnson	Carl	Borough of Chambersburg	Electric Distributor
Johnson	Carl	Borough of Mont Alto, Pennsylvania	Electric Distributor
Johnson	Carl	Buckeye Power, Inc.	Electric Distributor
Johnson	Carl	Central Virginia Electric Cooperative	Electric Distributor
Johnson	Carl	City of Dover, Delaware	Electric Distributor
Johnson	Carl	Delaware Municipal Electric Corporation, Inc.	Electric Distributor
Johnson	Carl	Easton Utilities Commission	Electric Distributor
Johnson	Carl	Energy Cooperative Association of Pennsylvania	Other Supplier
Johnson	Carl	Galt Power, Inc.	Other Supplier
Johnson	Carl	Hagerstown Light Department	Electric Distributor
Johnson	Carl	Illinois Municipal Electric Agency	Electric Distributor
Johnson	Carl	Indiana Municipal Power Agency	Generation Owner
Johnson	Carl	Madison Gas & Electric Co.	Other Supplier
Johnson	Carl	North Carolina Electric Membership Corporation	Electric Distributor
Johnson	Carl	North Carolina Municipal Power Agency Number 1	Other Supplier
Johnson	Carl	Northern Illinois Municipal Power Agency	Electric Distributor
Johnson	Carl	Northern Virginia Electric Cooperative (NOVEC)	Electric Distributor
Johnson	Carl	Old Dominion Electric Cooperative	Electric Distributor
Johnson	Carl	Thurmont Municipal Light Company	Electric Distributor
Johnson	Carl	Town of Williamsport (The)	Electric Distributor
Johnson	Carl	WPPI Energy	Other Supplier
Kelly	Stephen	Brookfield Energy Marketing LP	Other Supplier
Kilgallen	Kevin	Avangrid Renewables, LLC	Generation Owner
Kilgallen	Kevin	EDP Renewables North America, LLC	Generation Owner
Kinser	Cynthia	Consumer Protection and Advocate Division of the Tennessee Attorney General	End User Customer
Kogut	George	New York Power Authority	Other Supplier
Long	Scott	Allegheny Electric Cooperative, Inc.	Electric Distributor
McMackin	Devin	ITC Interconnection LLC	Transmission Owner
Pakela	Greg	DTE Energy Trading, Inc.	Other Supplier
Pelletier	Eveline	H.O. Energy Services (U.S.), Inc.	Other Supplier
Philips	Marji	Direct Energy Business, LLC	Other Supplier
Philips	Marji	Newark Energy Center, LLC	Generation Owner
Pratzon	David	Eastern Generation, LLC	Generation Owner
Pratzon	David	Essential Power Rock Springs, LLC	Transmission Owner
Pratzon	David	Wheelabrator Frackville Energy Co., Inc.	Generation Owner
Scarpignato	David	Calpine Energy Services, L.P.	Generation Owner
Sturgeon	John	Duke Energy Business Services LLC	Transmission Owner
Swalwell	Bradley	Tangent Energy Solutions, Inc.	Other Supplier
Trayers	Barry	Citigroup Energy, Inc.	Other Supplier
Wicks	Tonja	Duquesne Light Company	Transmission Owner

Wilkie	Brian	Rockland Electric Company	Transmission Owner
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Non-Voting Participants

Last Name	First Name	Member Name	Sector
Barker	Jason	Exelon Business Services Company, LLC	Transmission Owner
Bleiweis	Bruce	DC Energy, LLC	Other Supplier
Borgatti	Michael	Gable and Associates	Not Applicable
Bowring	Joe	Monitoring Analytics, LLC	Not Applicable
Branch	John	Edgecombe Genco	Generation Owner
Bray	Glenn	PPL Electric Utilities	Transmission Owner
Brouillette	Kyle	Indiana Municipal Power Agency	Generation Owner
Brown	David	BPU	Not Applicable
Carmean	Gregory	OPSI	Not Applicable
Case	Ethan	Cypress Creek Renewables, LLC	Generation Owner
Chatha	Mariam	Public Service Enterprise Group	Not Applicable
Chocarro	Iker	E.ON Climate & Renewables	Generation Owner
Cocco	Michael	Old Dominion Electric Cooperative	Electric Distributor
Crystle	Gil	UGI Energy Services, LLC	Other Supplier
Denby	Brett	Northern Virginia Electric Cooperative (NOVEC)	Electric Distributor
Depillo	Raymond	Public Service Electric & Gas Company	Transmission Owner
Diaz	Juan	Customized Energy Solutions, Ltd.*	Not Applicable
Dillon	Matt	UGI Development Company	Generation Owner
Domian	Christin	Duquesne Light Company	Transmission Owner
Evrard	David	Pennsylvania Office of Consumer Advocate	End User Customer
Filomena	Guy	Customized Energy Solutions, Ltd.*	Not Applicable
Foladare	Kenneth	Tangibl	Not Applicable
Fox	Angela	Affirmed Energy	Other Supplier
Fuess	Christian	Consultant	Not Applicable
Fuess	Jay	PBF Power Marketing, LLC	Generation Owner
Gagen	Rod	Dominion Energy Generation Marketing, Inc.	Generation Owner
Gallup	Perri	American Electric Power	Not Applicable
Gebolys	Debbie	Public Utilities Commission of Ohio	Not Applicable
Gilani	Rehan	ConEdison Energy	Not Applicable
Greening	Michele	PPL Electric Utilities	Transmission Owner
Hanser	Erik	Michigan Public Service Commission	Not Applicable
Harmon	Mike	American Electric Power	Not Applicable
Hastings	David	MICS	Other Supplier
Heinle	Erik	DC Office of The People's Council	End User Customer
Hitch	George	Dominion Energy Generation Marketing, Inc.	Generation Owner
Hoatson	Tom	Riverside Generating	Generation Owner
Hudis	Gabriella	Gable and Associates	Not Applicable

Huntoon	Stephen	Energy Counsel LLP	Not Applicable
Hurwich	Mark	Elliott Bay Energy Trading LLC	Other Supplier
Hutoon	Steve	Energy Counsel LLP	Not Applicable
Hydzinski	Tom	GT PowerGroup	Generation Owner
Janicki	Diane	Boston Energy Trading & Marketing, LLC	Not Applicable
Jones	Ryan	Allegheny Electric Cooperative, Inc.	Electric Distributor
Knernschield	Jenjira	Old Dominion Electric Cooperative	Electric Distributor
Liang-Nicol	Cecilia	FirstEnergy Solutions Corp.	Transmission Owner
Lieberman	Steven	American Municipal Power, Inc.	Electric Distributor
Logan	Sharon	Federal Energy Regulatory Commission	Not Applicable
Mack	Amanda	NextEra Energy Transmission, LLC	Other Supplier
Mancuso	Melanie	FirstEnergy Solutions Corp.	Transmission Owner
Manning	James	North Carolina Electric Membership Corporation	Electric Distributor
Martin	Valerie	Federal Energy Regulatory Commission	Not Applicable
Marton	Dave	FirstEnergy Solutions Corp.	Transmission Owner
Merola	Becky	Calpine Energy Services, L.P.	Generation Owner
Midgley	Sharon	Exelon Business Services Company, LLC	Transmission Owner
Nakayama	Hiroki	Marubeni Power International, Inc.	Generation Owner
Nawaz	Zainab	New Jersey Board of Public Utilities	Not Applicable
O'Connell	Robert	PPGI Fund A/B Development, LLC.	Generation Owner
Ondayko	Brock	American Electric Power	Not Applicable
Peoples	John	Duquesne Light Company	Transmission Owner
Poulos	Greg	CAPS	Not Applicable
Price	Ruth Ann	Delaware Division of the Public Advocate	End User Customer
Rainey	Frank	PEI Power Corporation	Generation Owner
Raymond	Chris	My Sherpa	Not Applicable
Reams	William	Allegheny Electric Cooperative, Inc.	Electric Distributor
Rohrbach	John	Southern Maryland Electric Cooperative	Electric Distributor
Sasser	Jonathan	Customized Energy Solutions, Ltd.*	Not Applicable
Schneider	Jon	FirstEnergy Solutions Corp.	Transmission Owner
Segner	Sharon	LS Power	Not Applicable
Shealy	Erin	GDS Associates	Not Applicable
Shields	Dan	Office of The Ohio Consumers' Counsel	Not Applicable
Sillin	John	Federal Energy Regulatory Commission	Not Applicable
Stern	Alex	Public Service Electric & Gas Company	Transmission Owner
Stewart	Travis	Gable and Associates	Not Applicable
Stone	Andy	Gable and Associates	Not Applicable
Stubbe	Judy	Duke Energy Business Services LLC	Transmission Owner
Sweeney	Rory	RTO Insider	Not Applicable
Tsao	Stephanie	Standard & Poor's Global	Not Applicable

Tyler	Catherine	Monitoring Analytics, LLC	Not Applicable
Vargo	Daniel	Allegheny Electric Cooperative, Inc.	Electric Distributor
Weaver	David	Exelon Business Services Company, LLC	Transmission Owner
Welt	Dan	Marubeni Power International, Inc.	Generation Owner
Whitehead	Jeff	GT PowerGroup	Generation Owner
Wilson	Bram	PBF Power Marketing, LLC	Generation Owner

PJM Participants

Last Name	First Name	Member Company	Sector
Abt	Jason	PJM Interconnection	Not Applicable
Baker	Scott	PJM Interconnection	Not Applicable
Barrett	Francis	PJM Interconnection	Not Applicable
Bautista	Alejandro	PJM Interconnection	Not Applicable
Berner	Aaron	PJM Interconnection	Not Applicable
Brown	Rich	PJM Interconnection	Not Applicable
Bruno	Patrick	PJM Interconnection	Not Applicable
Bryson	Mike	PJM Interconnection	Not Applicable
Buehler	Susan	PJM Interconnection	Not Applicable
Burns	Gregory	PJM Interconnection	Not Applicable
Coyne	Suzanne	PJM Interconnection	Not Applicable
Croop	Danielle	PJM Interconnection	Not Applicable
Davis	Elizabeth	PJM Interconnection	Not Applicable
Dirani	Rami	PJM Interconnection	Not Applicable
Drauschak	Lisa	PJM Interconnection	Not Applicable
Egan	Amanda	PJM Interconnection	Not Applicable
Ellen	Mary	PJM Interconnection	Not Applicable
Endress	Eric	PJM Interconnection	Not Applicable
Fabiano	Janell	PJM Interconnection	Not Applicable
Fernandes	Anisha	PJM Interconnection	Not Applicable
Fernandez	Ray	PJM Interconnection	Not Applicable
Foster	Denise	PJM Interconnection	Not Applicable
Furnholm	Whitney	PJM Interconnection	Not Applicable
Glatz	Suzanne	PJM Interconnection	Not Applicable
Hatch	Kevin	PJM Interconnection	Not Applicable
Hauske	Tom	PJM Interconnection	Not Applicable
Hendrzak	Chantal	PJM Interconnection	Not Applicable
Herman	Michael	PJM Interconnection	Not Applicable
Horger	Tim	PJM Interconnection	Not Applicable
Hsia	Eric	PJM Interconnection	Not Applicable
Kalle	Ibrahima	PJM Interconnection	Not Applicable
Kenney	Susan	PJM Interconnection	Not Applicable

Kern	Jonathan	PJM Interconnection	Not Applicable
Kimmel	David	PJM Interconnection	Not Applicable
Larocque	Matthew	PJM Interconnection	Not Applicable
Lu	Chen	PJM Interconnection	Not Applicable
Malladi	Brinda	PJM Interconnection	Not Applicable
McGill	Susan	PJM Interconnection	Not Applicable
McGlynn	Paul	PJM Interconnection	Not Applicable
Militello	Nikki	PJM Interconnection	Not Applicable
Monzon	Stephanie	PJM Interconnection	Not Applicable
Morelli	Lisa	PJM Interconnection	Not Applicable
Nix	Emma	PJM Interconnection	Not Applicable
O'Brien	Tom	PJM Interconnection	Not Applicable
O'Hara	Chris	PJM Interconnection	Not Applicable
Patel	Anita	PJM Interconnection	Not Applicable
Patel	Keyur	PJM Interconnection	Not Applicable
Robinson	Evelyn	PJM Interconnection	Not Applicable
Schmitt	Jeff	PJM Interconnection	Not Applicable
Schuyler	Ken	PJM Interconnection	Not Applicable
Seiler	Ken	PJM Interconnection	Not Applicable
Shoemaker	Jason	PJM Interconnection	Not Applicable
Slusser	Jeff	PJM Interconnection	Not Applicable
Smith	Melissa	PJM Interconnection	Not Applicable
Smolanitsky	Yuri	PJM Interconnection	Not Applicable
Snyder	Susan	PJM Interconnection	Not Applicable
Souder	Dave	PJM Interconnection	Not Applicable
Souder	Michelle	PJM Interconnection	Not Applicable
Stadmeyer	Rebecca	PJM Interconnection	Not Applicable
Swimm	Nora	PJM Interconnection	Not Applicable
Velasco	Cheryl	PJM Interconnection	Not Applicable
Walter	Laura	PJM Interconnection	Not Applicable
Ward	Michael	PJM Interconnection	Not Applicable
Williams	Stanley	PJM Interconnection	Not Applicable
Zhenyu	Fan	PJM Interconnection	Not Applicable