

Markets and Reliability Committee
The Chase Center on the Riverfront, Wilmington, DE
July 28, 2016
9:00 a.m. – 12:00 p.m. EPT

Administration (9:00-9:05)

Ms. Daugherty and Ms. Ford welcomed the participants, and provided the announcements and anti-trust and code of conduct announcements.

Endorsements/Approvals (9:05-10:40)

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

Minutes of the June 30, 2016 meeting of the Markets and Reliability Committee (MRC) were **approved** by acclamation with no objections or abstentions.

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

- A. Mr. Keyur Patel presented proposed revisions to Manual 11: Energy & Ancillary Services Market Operations for the Day-Ahead Scheduling Reserve (DASR).
- B. Mr. Jason Shoemaker presented proposed revisions to Manual 14C: Generation and Transmission Interconnection Facility Construction to support the inclusion of Order 1000 processes.
- C. Mr. Tom Falin presented proposed revisions to Manual 20: PJM Resource Adequacy Analysis resulting of the periodic review of the manual
- D. Mr. Dave Budney presented proposed revisions to Manual 29: Billing as part of the periodic review process

Following discussion, the committee **endorsed** the proposed revisions in items 2.A through 2.D by acclamation with no objections or abstentions.

3. Underperformance Risk Management Sr. Task Force (URMSTF) Charter (9:40-9:55)

Ms. Rebecca Carroll presented the proposed draft charter for the URMSTF. Following discussion, the committee postponed taking action until after agenda item 6 and then **approved** the proposed charter by acclamation with no objections or abstentions.

4. Auction Specific Bilateral Transactions (9:55-10:10)

Ms. Jen Tribulski presented PJM's proposed solution on Auction Specific Bilateral Transactions. Following discussion, the committee **endorsed** the proposed manual revisions by acclamation with no objections or abstentions.

5. FERC Order 825 (10:10-10:40)

Mr. Ray Fernandez presented a proposed problem statement and issue charge related to the recently

issued FERC Order 825. The sixth key work activity was amended to read “Develop a new set of steps within the demand curve to be implemented as a result of the Final Rule, if necessary.” Following discussion, the committee **approved** the amended proposed problem statement and issue charge by acclamation with no objections or abstentions.

6. Non-Performance Assessment Charge Rate

Mr. David Scarpignato, Calpine, presented a proposed problem statement / issue charge regarding the calculation of the Capacity Performance non-performance charge rate.

Mr. Bob O’Connell, PPGI, moved and Mr. Jason Cox, Dynegy, seconded a motion to postpone consideration of Calpine’s proposal until the MRC meeting after PJM files a report with the Commission indicating that a revision of the Non Performance Charge Rate is warranted. Following discussion, the motion **failed** in a sector-weighted vote with 2.43 in favor.

The issue charge was amended to indicate the Market Implementation Committee as the location for working the issue. Following discussion, the problem statement / issue charge **failed** in a sector-weighted vote with 2.21 in favor.

First Readings (10:40-11:15)

7. PJM Manuals (10:40-11:15)

- A. Mr. Ron DeLoach presented proposed revisions to Manual 3A: Energy Management System (EMS) Model Updates and Quality Assurance (QA) regarding administrative and modeling process updates. The Committee will be asked to endorse these proposed revisions at its next meeting.
- B. Mr. Tong Zhao presented proposed revisions to changes to Manual 11: Energy & Ancillary Services Market Operations as part of the periodic review process. The Committee will be asked to endorse these proposed revisions at its next meeting.
- C. Mr. Tom Hauske presented proposed revisions to Manual 12: Balancing Operations regarding administrative and conforming updates. The Committee will be asked to endorse these proposed revisions at its next meeting.
- D. Mr. David Schweizer presented proposed revisions to Manual 14D: Generator Operational Requirements regarding updates to the unit cold weather testing process. The Committee will be asked to endorse these proposed revisions at its next meeting.
- E. Mr. Phil D’Antonio presented proposed revisions to Manual 37: Reliability Coordination as part of the manual’s periodic review. The Committee will be asked to endorse these proposed revisions at its next meeting.

Informational Updates (11:15-12:00)

8. New 500kV Transmission Line Designation (11:15-11:30)

Mr. Paul Santarelli, PPL Electric Utilities, reviewed a new 500kV transmission line designation resulting from the cut-in of the new Shickshinny 500kV switchyard in PPL.

9. Manual 15: Cost Development Guidelines (11:30-12:00)

Mr. Jeff Schmitt discussed proposed revisions to Manual 15: Cost Development Guidelines regarding fuel cost policies and as part of the periodic review process. The committee will be asked to endorse these proposed revisions at a future meeting.

Future Agenda Items (12:00)

No new future agenda items were identified.

Future Meeting Dates

August 25, 2016	9:00 a.m.	Wilmington, DE
September 29, 2016	9:00 a.m.	Wilmington, DE
October 27, 2016	9:00 a.m.	Wilmington, DE
November 17, 2016	9:00 a.m.	Wilmington, DE
December 22, 2016	9:00 a.m.	Wilmington, DE

Chair/Secretary

Last Name	First Name	Company	Role
Daugherty	Suzanne	PJM Interconnection, LLC	Chair
Ford	Adrien	PJM Interconnection, LLC	Acting Secretary

Voters

Last Name	First Name	Company	Sector
Batta	Michael	Virginia Electric & Power Company	Transmission Owner
Benchek	Jim	FirstEnergy Solutions Corp.	Transmission Owner
Bleiweis	Bruce	DC Energy, LLC	Other Supplier
Borgatti	Michael	Rep.'g Covanta Energy Group, LLC	Generation Owner
Borgatti	Michael	Rep.'g Jersey Green Energy LLC	Other Supplier
Borgatti	Michael	Rep.'g NextEra Energy Power Marketing, LLC	Generation Owner
Borgatti	Michael	Rep.'g York County Solid Waste and Refuse Authority	Generation Owner
Borgatti	Michael	Rep.'g Newark Energy Center, LLC	Generation Owner
Borgatti	Michael	Rep.'g Elgin Energy Center, LLC	Generation Owner
Borgatti	Michael	Rep.'g Longview Power, LLC	Generation Owner
Brodbeck	John	EDP Renewables North America, LLC	Generation Owner
Bruce	Susan	Rep.'g Trustees of the University of Pennsylvania	End User Customer
Bruce	Susan	Rep.'g MeadWestvaco Corporation	End User Customer
Bruce	Susan	Rep.'g Procter & Gamble Paper Products Company (The)	End User Customer
Bruce	Susan	Rep.'g Gerdau Ameristeel Energy, Inc.	Other Supplier
Bruce	Susan	Rep.'g Air Products & Chemicals, Inc.	End User Customer
Bruce	Susan	Rep.'g Kimberly-Clark Corporation	Generation Owner
Bruce	Susan	Rep.'g Lehigh Portland Cement Company	End User Customer
Bruce	Susan	Rep.'g Praxair, Inc.	End User Customer
Bruce	Susan	Rep.'g Linde, LLC	End User Customer

Bruce	Susan	Rep.'g Letterkenny Industrial Development Authority	Electric Distributor
Bruce	Susan	Rep.'g Wellsboro Electric Company	Electric Distributor
Bruce	Susan	Rep.'g Industrial Energy Users-Ohio	Other Supplier
Bruce	Susan	Rep.'g Air Liquide Industrials U.S., L.P.	End User Customer
Cox	Jason	Dynegy Marketing and Trade, LLC	Generation Owner
Dugan	Chuck	East Kentucky Power Cooperative, Inc.	Transmission Owner
Ellison	Alan	Grays Ferry Cogeneration Partnership	Generation Owner
Esposito	Patricia	TransCanada Power Marketing Ltd.	Generation Owner
Evrard	David	Pennsylvania Office of Consumer Advocate	End User Customer
Fitch	Neal	NRG Power Marketing, LLC	Generation Owner
Fondacci	Luis	North Carolina Electric Membership Corporation	Electric Distributor
Garnett	Bryan	Duke Energy Business Services LLC	Transmission Owner
Godson	Gloria	Exelon Business Services Company, LLC	Transmission Owner
Greening	Michele	Talen Energy Marketing, LLC	Generation Owner
Greiner	Gary	Public Service Electric & Gas Company	Transmission Owner
Griffiths	Dan	Rep.'g Delaware Division of the Public Advocate	End User Customer
Griffiths	Dan	Rep.'g Ohio Consumers' Counsel	End User Customer
Griffiths	Dan	Rep.'g Indiana Office of Utility Consumer Counselor (IN OUCC)	End User Customer
Griffiths	Dan	Rep.'g Office of the Attorney General, Kentucky	End User Customer
Griffiths	Dan	Rep.'g Office of the People's Counsel for the District of Columbia	End User Customer
Griffiths	Dan	Rep.'g Illinois Citizens Utility Board	End User Customer
Griffiths	Dan	Rep.'g Maryland Office of People's Counsel	End User Customer
Griffiths	Dan	Rep.'g West Virginia Consumer Advocate Division	End User Customer
Griffiths	Dan	Rep.'g New Jersey Division of Rate Counsel	End User Customer
Griffiths	Dan	Rep.'g Pennsylvania Office of Consumer Advocate	End User Customer
Guerry	Katie	EnerNOC, Inc.	Other Supplier
Hastings	David	Rep.'g Twin Cities Power, LLC	Other Supplier
Hastings	David	Rep.'g SESCO Enterprises, LLC	Other Supplier
Hastings	David	Rep.'g Mercuria Energy America, Inc.	Other Supplier
Hastings	David	Rep.'g Saracen Energy East LP	Other Supplier
Hastings	David	Rep.'g Town Square Energy East, LLC	Other Supplier
Hastings	David	Rep.'g Solios Power Mid-Atlantic Trading LLC	Other Supplier
Hastings	David	Rep.'g Northstar Trading Ltd.	Other Supplier
Hoatson	Tom	West Deptford Energy, LLC	Generation Owner
Horstmann	John	Dayton Power & Light Company (The)	Transmission Owner
Horton	Dana	Appalachian Power Company (AEP Generation)	Transmission Owner
Johnson	Carl	Rep.'g Allegheny Electric Cooperative, Inc.	Electric Distributor
Johnson	Carl	Rep.'g Buckeye Power, Inc.	Electric Distributor
Johnson	Carl	Rep.'g Old Dominion Electric Cooperative	Electric Distributor

Johnson	Carl	Rep.'g Blue Ridge Power Agency, Inc.	Electric Distributor
Johnson	Carl	Rep.'g Central Virginia Electric Cooperative	Electric Distributor
Johnson	Carl	Rep.'g Borough of Chambersburg	Electric Distributor
Johnson	Carl	Rep.'g Delaware Municipal Electric Corporation, Inc.	Electric Distributor
Johnson	Carl	Rep.'g City of Dover, Delaware	Electric Distributor
Johnson	Carl	Rep.'g Easton Utilities Commission	Electric Distributor
Johnson	Carl	Rep.'g North Carolina Electric Membership Corporation	Electric Distributor
Johnson	Carl	Rep.'g Indiana Municipal Power Agency	Generation Owner
Johnson	Carl	Rep.'g American Municipal Power, Inc.	Electric Distributor
Johnson	Carl	Rep.'g Northern Virginia Electric Cooperative (NOVEC)	Electric Distributor
Johnson	Carl	Rep.'g Illinois Municipal Electric Agency	Electric Distributor
Johnson	Carl	Rep.'g Hagerstown Light Department	Electric Distributor
Johnson	Carl	Rep.'g Borough of Mont Alto, Pennsylvania	Electric Distributor
Johnson	Carl	Rep.'g Thurmont Municipal Light Company	Electric Distributor
Johnson	Carl	Rep.'g Town of Williamsport (The)	Electric Distributor
Johnson	Carl	Rep.'g Energy Cooperative Association of PA	Other Supplier
Johnson	Carl	Rep.'g Madison Gas & Electric Co.	Other Supplier
Johnson	Carl	Rep.'g North Carolina Municipal Power Agency # 1	Other Supplier
Johnson	Carl	Rep.'g WPPI Energy	Other Supplier
Johnson	Carl	Rep.'g Galt Power, Inc.	Other Supplier
Kelly	Stephen	Brookfield Energy Marketing LP	Other Supplier
Kogut	George	New York Power Authority	Other Supplier
Lieberman	Steven	Old Dominion Electric Cooperative	Electric Distributor
Long	Scott	Allegheny Electric Cooperative, Inc.	Electric Distributor
Melnyk	Markian	Atlantic Grid Operations A, LLC	Other Supplier
Merola	Becky	Noble Americas Gas & Power Corp.	Other Supplier
O'Connell	Robert	PPGI Fund A/B Development, LLC	Generation Owner
Pratzon	David	Rep.'g Wheelabrator Frackville Energy Co., Inc.	Generation Owner
Pratzon	David	Rep.'g Eastern Generation, LLC	Generation Owner
Prokop	Brenda	ITC Interconnection LLC	Transmission Owner
Richardson	Frank (Chip)	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner
Riding	MQ	Essential Power Rock Springs, LLC	Transmission Owner
Rohrbach	John	Rep.'g Southern Maryland Electric Cooperative, Inc.	Electric Distributor
Rohrbach	John	Rep.'g Wabash Valley Power Association, Inc.	Electric Distributor
Rutigliano	Tom	Rep.'g Demansys Energy, LLC	Other Supplier
Rutigliano	Tom	Rep.'g Enerwise Global Technologies, Inc.	Other Supplier
Rutigliano	Tom	Rep.'g EMC Development Company, Inc.	Other Supplier
Rutigliano	Tom	Rep.'g Achieving Equilibrium LLC	Other Supplier
Rutigliano	Tom	Rep.'g Earth Networks, Inc.	Other Supplier

Scarpignato	David	Calpine Energy Services, L.P.	Generation Owner
Scoglietti	Barbara	Tangent Energy Solutions, Inc.	Other Supplier
Sitaraman	Nicole	Office of the People's Counsel for the District of Columbia	End User Customer
Trayers	Barry	Citigroup Energy, Inc.	Other Supplier
Whitehead	Jeffrey	Direct Energy Business, LLC	Other Supplier
Yu	Joel	Rockland Electric Company	Transmission Owner

Non-Voters

Last Name	First Name	Company	Sector
Ainspan	Malcolm	Energy Curtailment Specialists, Inc.	Other Supplier
Bainbridge	Thomas	FirstEnergy Solutions Corp.	Transmission Owner
Binder	Gerry	SESCO Enterprises LLC	Other Supplier
Bloom	David	Baltimore Gas and Electric Company	Other Supplier
Caletka	Patricia	New York State Electric & Gas Corporation	Other Supplier
Carmean	Gregory	OPSI	Not Applicable
Cocco	Michael	Old Dominion Electric Cooperative	Electric Distributor
Collins	Leonard	State of Delaware	Not Applicable
Dalessandris	Louis	LMD Consultants Inc.	Not Applicable
Delosa	Joseph	DE Public Service Commission	Not Applicable
Dickson	Douglas	New Jersey Board of Public Utilities	Not Applicable
Dillon	Matthew	UGI Development Company	Generation Owner
Dinicola	Laura	FirstEnergy Solutions Corp.	Transmission Owner
Domian	Christin	Mitsubishi Electric Power Products Inc.	Not Applicable
Drakely	Nicole	PPL Electric Utilities Corp. dba PPL Utilities	Transmission Owner
Everngam	Scott	The Federal Energy Regulatory Commission	Not Applicable
Farber	John	DE Public Service Commission	Not Applicable
Filomena	Guy	Customized Energy Solutions, Ltd.*	Not Applicable
Fitch	Neal	NRG Power Marketing LLC	Generation Owner
Foladare	Kenneth	IMG Midstream LLC	Generation Owner
Fox	Angela	Wylan Energy, L.L.C.	Not Applicable
Fuerst	Gary	American Transmission Systems, Inc.	Transmission Owner
Gebolys	Debbie	Public Utilities Commission of Ohio (The)	Not Applicable
Gil	Crystle	UGI Development Company	Transmission Owner
Gilani	Rehan	ConEdison Energy, Inc.	Other Supplier
Guy	Gary	Baltimore Gas and Electric Company	Transmission Owner
Hagaman	Derek	GT Power Group	Not Applicable
Hanser	Erik	Michigan Public Service Commission	Not Applicable
Harmon	Michael	Union Electric Company d/b/a Ameren Missouri	Other Supplier
Hayes	Patrick	Union Electric Company d/b/a Ameren Missouri	Other Supplier
Heise	Randi	Dominion Virginia Power	Not Applicable
Hemmert	John	Dayton Power & Light Company (The)	Transmission Owner

Herel	Suzanne	RTO Insider	Not Applicable
Higgins	Sharon	Duke Energy Commercial Asset Management, Inc.	Generation Owner
Hitch	George	Dominion Energy Marketing, Inc.	Generation Owner
Huntoon	Stephen	NextEra Energy Power Marketing, LLC	Generation Owner
Janicki	Diane	Boston Energy Trading & Marketing, LLC	Generation Owner
Jardot	Gina	Essential Power Rock Springs, LLC	Transmission Owner
Jones	Hank	Dynegy Marketing & Trade, LLC	Generation Owner
Jones	Ryan	Allegheny Electric Cooperative, Inc.	Electric Distributor
Josyula	Siva	Monitoring Analytics, LLC	Not Applicable
Kaczanowski	Marek	Baltimore Gas and Electric Company	Transmission Owner
Karrasch	Kim	Interstate Gas Supply, Inc.	Other Supplier
Katayama	Tomohiro	Osaka Gas USA	Not Applicable
Lacy	Catharine	Dominion Virginia Power	Not Applicable
Marsan	Mark	Public Service Electric & Gas Company	Transmission Owner
Marton	Dave	FirstEnergy Solutions Corp.	Transmission Owner
Midgley	Sharon	Exelon Business Services Company, LLC	Transmission Owner
Mok	Alan	Duke Energy Kentucky, Inc.	Transmission Owner
Nadel	Steven	PPL Electric Utilities Corp. dba PPL Utilities	Transmission Owner
Ondayko	Brock	Appalachian Power Company	Transmission Owner
Ozkas	Deniz	Atlantic Grid Development	Not Applicable
Philips	Marji	Direct Energy Business, LLC	Other Supplier
Price	Ruth	Division of the Public Advocate of the State of Delaware	End User Customer
Quinlan	Pamela	Rockland Electric Company	Transmission Owner
Rainey	Frank	PEI Power Corporation	Generation Owner
Richardson	Frank	PPL Electric Utilities Corp. dba PPL Utilities	Transmission Owner
Riding	MQ	Essential Power OPP, LLC	Transmission Owner
Rutigliano	Tom	Achieving Equilibrium LLC	Other Supplier
Santarelli	Paul	Talen Energy Marketing, LLC	Generation Owner
Sasser	Jonathan	Customized Energy Solutions, Ltd.*	Not Applicable
Schneider	Jonathan	FirstEnergy Solutions Corp.	Transmission Owner
Schreim	Morris	Maryland Public Service Commission	Not Applicable
Schum	Alice	Illinois Municipal Electric Agency	Electric Distributor
Slagel	Ron	TDF Energy Services	Not Applicable
Stuchell	Jeff	FirstEnergy Solutions Corp.	Transmission Owner
Sweeney	Rory	RTO Insider	Not Applicable
Taylor	Robert	Exelon Business Services Company, LLC	Transmission Owner
Thompson	Matt	XO Energy MA, LP	Other Supplier
Thomson	Heather	Mid-Atlantic Renewable Energy	Not Applicable
Vargo	Daniel	Allegheny Electric Cooperative, Inc.	Electric Distributor
Vogel	Anne	AEP Appalachian Transmission Company, Inc.	Transmission Owner
Walker	Jennifer	Exelon Business Services Company, LLC	Transmission Owner

Wilhite	Chad	FirstEnergy Solutions Corp.	Transmission Owner
Williams	Amber	New York State Electric & Gas Corporation	Other Supplier
Wilson	James	Wilson Energy Economics	Not Applicable
Wisersky	Megan	Madison Gas & Electric Company	Other Supplier
Wynn	Laura	Stone Mattheis Xenopoulos & Brew PC	Not Applicable
York	Katherine	Tennessee Valley Authority	Other Supplier
Zilliox	Skylar	RES America Developments Inc	Generation Owner

PJM Attendees

Last Name	First Name	Company	Sector
Baker	Scott	PJM Interconnection, LLC	Not Applicable
Barrett	Fran	PJM Interconnection, LLC	Not Applicable
Bastian	Jeff	PJM Interconnection, LLC	Not Applicable
Brown	Rich	PJM Interconnection, LLC	Not Applicable
Bryson	Michael	PJM Interconnection, LLC	Not Applicable
Budney	David	PJM Interconnection, LLC	Not Applicable
Carroll	Rebecca	PJM Interconnection, LLC	Not Applicable
Chao	Hungpo	PJM Interconnection, LLC	Not Applicable
Coyne	Suzanne	PJM Interconnection, LLC	Not Applicable
D'Antonio	Phil	PJM Interconnection, LLC	Not Applicable
DeLoach	Ron	PJM Interconnection, LLC	Not Applicable
Disciullo	Nick	PJM Interconnection, LLC	Not Applicable
Driscoll	Maryellen	PJM Interconnection, LLC	Not Applicable
Egan	Amanda	PJM Interconnection, LLC	Not Applicable
Fabiano	Janell	PJM Interconnection, LLC	Not Applicable
Falin	Tom	PJM Interconnection, LLC	Not Applicable
Fernandez	Ray	PJM Interconnection, LLC	Not Applicable
Foster	Denise	PJM Interconnection, LLC	Not Applicable
Hauske	Tom	PJM Interconnection, LLC	Not Applicable
Hendrzak	Chantal	PJM Interconnection, LLC	Not Applicable
Horger	Tim	PJM Interconnection, LLC	Not Applicable
Kenney	Susan	PJM Interconnection, LLC	Not Applicable
Larocque	Matthew	PJM Interconnection, LLC	Not Applicable
Manion	Evelyn	PJM Interconnection, LLC	Not Applicable
Mccomb	John	PJM Interconnection, LLC	Not Applicable
McLaverty	Megan	PJM Interconnection, LLC	Not Applicable
Monken	Jonathan	PJM Interconnection, LLC	Not Applicable
Monzon	Stephanie	PJM Interconnection, LLC	Not Applicable
O'Brien	Tom	PJM Interconnection, LLC	Not Applicable
O'Neill	Jack	PJM Interconnection, LLC	Not Applicable
Oskvig	Dean	PJM Board of Managers	Not Applicable
Ott	Andrew	PJM Board of Managers	Not Applicable

Patel	Keyur	PJM Interconnection, LLC	Not Applicable
Pilong	Chris	PJM Interconnection, LLC	Not Applicable
Price	Rob	PJM Interconnection, LLC	Not Applicable
Quevada	Jason	PJM Interconnection, LLC	Not Applicable
Robinson	Charles	PJM Interconnection, LLC	Not Applicable
Schmitt	Jeff	PJM Interconnection, LLC	Not Applicable
Schuyler	Ken	PJM Interconnection, LLC	Not Applicable
Schweizer	David	PJM Interconnection, LLC	Not Applicable
Sechrist	Erin	PJM Interconnection, LLC	Not Applicable
Shoemaker	Jason	PJM Interconnection, LLC	Not Applicable
Snyder	Sue	PJM Interconnection, LLC	Not Applicable
Souder	Michelle	PJM Interconnection, LLC	Not Applicable
Stadelmeyer	Rebecca	PJM Interconnection, LLC	Not Applicable
Stotesbury	Christina	PJM Interconnection, LLC	Not Applicable
Strella	Lauren	PJM Interconnection, LLC	Not Applicable
Swimm	Nora	PJM Interconnection, LLC	Not Applicable
Tribulski	Jen	PJM Interconnection, LLC	Not Applicable
Velasco	Cheryl Mae	PJM Interconnection, LLC	Not Applicable
Ward	Michael	PJM Interconnection, LLC	Not Applicable
Williams	Stan	PJM Interconnection, LLC	Not Applicable