

**Markets and Reliability Committee**  
**PJM Conference and Training Center, Audubon, PA**  
**November 17, 2016**  
**9:00 a.m. – 2:30 p.m. EPT**

## Administration

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

## Endorsements/Approvals

### 1. Draft Minutes

Minutes of the October 27, 2016 meeting of the Markets and Reliability Committee (MRC) were **approved** by acclamation with no objections or abstentions.

### 2. PJM Manuals

- A. Ms. Nicole Scott reviewed proposed changes to Manual 03: Transmission Operations resulting from the periodic review of the manual.
- B. Mr. Aaron Berner presented updates to the Tariff and Manual 14A: Generation and Transmission Interconnection Process that are a result of discussions at Special Planning Committee sessions regarding New Service Request Cost Allocation & Study Methods.
- C. Mr. Mike Herman presented modifications to PJM Manual 14B: PJM Region Transmission Planning Process regarding the Capacity Import Limit calculation procedure. The procedure resides in Attachment G.11 of Manual 14B.
- D. Mr. Jeff Schmitt reviewed proposed revisions to Manual 15: Cost Development Guidelines regarding Fuel Cost Policies contingent upon FERC approval of PJM's related compliance filing.
- E. Ms. Terri Esterly presented proposed revisions to Manual 18B: Energy Efficiency Measurement & Verification identified through the periodic review of the manual.
- F. Mr. Jerry Bell reviewed proposed draft changes to Manual 21: Rules and Procedures for Determination of Generating Capability related to generator testing requirements.
- G. Mr. Ray Fernandez reviewed proposed revisions to Manual 28: Operating Agreement Accounting to better describe a fully metered EDC.

Following discussion, the committee **endorsed** the proposed revisions in items 2.A through 2.C and 2.E through 2.G by acclamation with no objections and one abstention to item 2G. Action on item 2.D was deferred to a future meeting.

### 3. Day Ahead Scheduling Reserve (DASR) Requirement

Mr. Tom Hauske reviewed the preliminary 2017 DASR Requirement. This reserve requirement will be incorporated into Manual 13: Emergency Operations, and become effective on January 1, 2017.

Following discussion the committee **endorsed** the 2017 DASR Requirement and associated Manual 13 revisions by acclamation, with no objections or abstentions.

#### 4. Glossary of Terms

Ms. Janell Fabiano provided an update on the new [Glossary available on PJM's website](#), as well as the pending retirement of Manual 35: Definitions and Acronyms. Following discussion the committee **endorsed** retiring Manual 35 by acclamation, with no objections or abstentions.

#### 5. Underperformance Risk Management Sr. Task Force (URMSTF)

Ms. Rebecca Carroll presented a proposal regarding underperformance risk management in Capacity Performance. Following discussion, the proposal **failed** in a sector-weighted vote with 2.38 in favor.

#### 6. Seasonal Capacity Resources Sr. Task Force (SCRSTF)

Mr. Jeff Whitehead, Direct Energy, moved and Mr. Griffiths seconded extension of Base Capacity for one year, that the Base Capacity penalty rate and stop loss be made comparable to that for Capacity Performance, and that the extended time be used to explore potential options for recognizing the capacity value /contribution of seasonal resources. Following discussion, the motion **failed** in a sector-weighted vote with 2.93 in favor.

#### 7. Sell Back of Excess Capacity

Mr. Jeff Whitehead, Direct Energy, presented a proposed problem statement / issue charge regarding PJM's sell back of excess capacity in Reliability Pricing Model (RPM) Incremental Auctions. Several Members offered suggested friendly amendments to the first key work activity in the issue charge which were consolidated as follows:

Review PJM RPM Incremental Auction process and structure with specific focus on circumstances where PJM is a capacity seller. The review should look at the general structure of the RPM Incremental Auctions including but not limited to the number of incremental auctions, timing of incremental auctions, and PJM participation in incremental auctions. Nothing is intended to affect the rules regarding offers made by individual market sellers.

Following discussion the committee **approved** the proposed problem statement / issue charge by acclamation, with one objection and no abstentions.

#### 8. Combined Cycle Modelling Problem Statement

Mr. Bob O'Connell, PPGI Fund A/B Development, LLC, discussed the activities of the Combined Cycle User Group, and presented a proposed problem statement / issue charge regarding Combined Cycle unit modelling. Following discussion the committee **approved** the proposed problem statement / issue charge by acclamation, with no objections or abstentions. The work associated with a related prior problem statement / issue charge approved by the Operating Committee in 2012 will be incorporated into the work of the new Senior Task Force.

## 9. Winter Season Resource Adequacy and Capacity Requirements

Mr. Jim Wilson, on behalf of The MD Office of the Peoples' Counsel, presented a proposed problem statement / issue charge regarding Winter Season Resource Adequacy and Capacity Requirements. Following discussion the committee **approved** the proposed problem statement / issue charge by acclamation, with 10 objections and four abstentions.

## 10. Pumped Hydro Storage

Mr. Steve Shparber presented proposed Tariff, and Operating Agreement revisions related to pumped hydro storage developed by the GDECS. Following discussion the committee **endorsed** the proposed revisions by acclamation, with no objections or abstentions.

## 11. Replacement of Capacity Obligations

Mr. Barry Trayers, CitiGroup Energy Inc., presented proposed revisions to Manual 18: Capacity Market regarding the immediate replacement of capacity obligations. He noted that at the October 27, 2016 MRC meeting he had accepted a proposed friendly amendment. Mr. Trayers indicated that he no longer considered that amendment to be friendly, and therefore the motion was returned to its original state. Mr. Trayers moved and Mr. O'Connell seconded the original proposed revisions to Manual 18. Following discussion the motion was **approved** with two objections and 12 abstentions.

## First Readings

## 12. Residual ARR Enhancements

Mr. Brian Chmielewski presented the proposed solution to the Residual ARR Enhancements issue. The committee will be asked to endorse this package at its next meeting.

## 13. Distributed Energy Resources

Mr. Dave Anders provided an update on the progress of the Special MRC meetings on Distributed Energy Resources.

## 14. FTR Undiversified Credit Adder

Mr. Hal Loomis presented proposed revisions to the FTR undiversified credit adder. The committee will be asked to endorse the proposed revisions at its next meeting.

## 15. PJM Manuals

- A. Mr. Augustine Caven reviewed proposed revisions to Manual 10: Pre-Scheduling Operations regarding the periodic review of the manual, end of outage reporting and the 72-hour maintenance outage recall process. The committee will be asked to endorse the proposed revisions at its next meeting.
- B. Mr. Chris Pulong reviewed proposed changes to Manual 13: Emergency Operations. The committee will be asked to endorse the proposed revisions at its next meeting.

- C. Ms. Sue Glatz presented proposed revisions to Section 6.1.6 of Manual 14C: Generation and Transmission Interconnection Facility Construction. The committee will be asked to endorse the proposed revisions at its next meeting.
- D. Mr. Augustine Caven reviewed proposed revisions to Manual 14D: Generator Operational Requirements regarding fuel limitation reporting. The committee will be asked to endorse the proposed revisions at its next meeting.

## Informational Updates

None

## Future Agenda Items

No new future agenda items were identified.

## Future Meeting Dates

December 22, 2016	9:00 a.m.	Wilmington, DE	Wilmington, DE
January 26, 2017	9:00 a.m.	Wilmington, DE	Wilmington, DE
February 23, 2017	9:00 a.m.	Wilmington, DE	Wilmington, DE
March 23, 2017	9:00 a.m.	Wilmington, DE	Wilmington, DE
April 27, 2017	9:00 a.m.	Wilmington, DE	Wilmington, DE
May 25, 2017	9:00 a.m.	Cambridge, MD	Cambridge, MD
June 22, 2017	9:00 a.m.	Wilmington, DE	Wilmington, DE
July 27, 2017	9:00 a.m.	Wilmington, DE	Wilmington, DE
August 24, 2017	9:00 a.m.	Wilmington, DE	Wilmington, DE
September 28, 2017	9:00 a.m.	Wilmington, DE	Wilmington, DE
October 26, 2017	9:00 a.m.	Wilmington, DE	Wilmington, DE
November 30, 2017	9:00 a.m.	Wilmington, DE	Wilmington, DE
December 21, 2017	9:00 a.m.	Wilmington, DE	Wilmington, DE

## CHAIR/SECRETARY

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

## VOTING PARTICIPANTS

Last Name	First Name	Company	Sector
Ament	Todd	Cube Hydro Partners, LLC	Generation Owner
Barker	Jason	Exelon Business Services Company, LLC	Transmission Owner
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 Elgin Energy Center, LLC	Generation Owner



Borgatti	Michael	Rep'g Jersey Green Energy LLC	Other Supplier
Borgatti	Michael	Rep'g Longview Power, LLC	Generation Owner
Borgatti	Michael	Rep'g Moxie Freedom LLC	Generation Owner
Borgatti	Michael	Rep'g Newark Energy Center, LLC	Generation Owner
Borgatti	Michael	Rep'g NextEra Energy Power Marketing, LLC	Generation Owner
Borgatti	Michael	Rep'g York County Solid Waste and Refuse Authority	Generation Owner
Bruce	Susan	Rep'g Air Liquide Industrials U.S., L.P.	End User Customer
Bruce	Susan	Rep'g Air Products & Chemicals, Inc.	End User Customer
Bruce	Susan	Rep'g Gerdau Ameristeel Energy, Inc.	Other Supplier
Bruce	Susan	Rep'g Industrial Energy Users-Ohio	Other Supplier
Bruce	Susan	Rep'g Kimberly-Clark Corporation	Generation Owner
Bruce	Susan	Rep'g Lehigh Portland Cement Company	End User Customer
Bruce	Susan	Rep'g Letterkenny Industrial Development Authority	Electric Distributor
Bruce	Susan	Rep'g Linde, LLC	End User Customer
Bruce	Susan	Rep'g MeadWestvaco Corporation	End User Customer
Bruce	Susan	Rep'g Praxair, Inc.	End User Customer
Bruce	Susan	Rep'g Procter & Gamble Paper Products Company (The)	End User Customer
Bruce	Susan	Rep'g Trustees of the University of Pennsylvania	End User Customer
Bruce	Susan	Rep'g Wellsboro Electric Company	Electric Distributor
Campbell	Bruce	Enerwise Global Technologies, Inc.	Other Supplier
Campbell	Bruce	Rep'g MidAtlantic Power Partners, LLC	Other Supplier
Cox	Jason	Dynegy Marketing and Trade, LLC	Generation Owner
Crystle	Gil	UGI Development Company	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
Fuess	Jay	Rep'g Church Hill Solar Farm, LLC	Generation Owner
Fuess	Jay	Rep'g Diamond State Generation Partners, LLC	Generation Owner
Fuess	Jay	Rep'g Ictec.com, Inc.	Other Supplier
Fuess	Jay	Rep'g Kuehne Chemical Company, Inc.	Other Supplier
Fuess	Jay	Rep'g PBF Power Marketing, LLC	Generation Owner
Garnett	Bryan	Duke Energy Business Services LLC	Transmission Owner



Greening	Michele	PPL Electric Utilities Corp. dba PPL Utilities	Transmission 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 Illinois Citizens Utility Board	End User Customer
Griffiths	Dan	Rep'g Indiana Office of Utility Consumer Counselor	End User Customer
Griffiths	Dan	Rep'g Maryland Office of People's Counsel	End User Customer
Griffiths	Dan	Rep'g New Jersey Division of Rate Counsel	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 Ohio Consumers' Counsel	End User Customer
Griffiths	Dan	Rep'g West Virginia Consumer Advocate Division	End User Customer
Guerry	Katie	EnerNOC, Inc.	Other Supplier
Hastings	David	Rep'g Chesapeake Trading Group, LLC	Other Supplier
Hastings	David	Rep'g Mercuria Energy America, Inc.	Other Supplier
Hastings	David	Rep'g Northstar Trading Ltd.	Other Supplier
Hastings	David	Rep'g Saracen Energy East LP	Other Supplier
Hastings	David	Rep'g SESCO Enterprises, LLC	Other Supplier
Hastings	David	Rep'g Solios Power Mid-Atlantic Trading LLC	Other Supplier
Hastings	David	Rep'g Tenaska Power Services Co.	Generation Owner
Helms	Joseph	Rainbow Energy Marketing Corporation	Other Supplier
Hendrix	Chris	Texas Retail Energy, LLC	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
Hyzinski	Thomas	Talen Energy Marketing, LLC	Generation Owner
Jardot	Gina	Essential Power Rock Springs, LLC	Transmission Owner
Johnson	Carl	Rep'g American Municipal Power, Inc.	Electric Distributor
Johnson	Carl	Rep'g Blue Ridge Power Agency, Inc.	Electric Distributor
Johnson	Carl	Rep'g Borough of Chambersburg	Electric Distributor
Johnson	Carl	Rep'g Borough of Mont Alto, Pennsylvania	Electric Distributor
Johnson	Carl	Rep'g Buckeye Power, Inc.	Electric Distributor
Johnson	Carl	Rep'g Central Virginia Electric Cooperative	Electric Distributor
Johnson	Carl	Rep'g City of Dover, Delaware	Electric Distributor
Johnson	Carl	Rep'g Delaware Municipal Electric Corporation, Inc.	Electric Distributor
Johnson	Carl	Rep'g Easton Utilities Commission	Electric Distributor



Johnson	Carl	Rep'g Energy Cooperative Association of PA	Other Supplier
Johnson	Carl	Rep'g Galt Power, Inc.	Other Supplier
Johnson	Carl	Rep'g Hagerstown Light Department	Electric Distributor
Johnson	Carl	Rep'g Illinois Municipal Electric Agency	Electric Distributor
Johnson	Carl	Rep'g Indiana Municipal Power Agency	Generation Owner
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 Northern Virginia Electric Cooperative	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 WPPI Energy	Other Supplier
Kelly	Stephen	Brookfield Energy Marketing LP	Other Supplier
Kilgallen	Kevin	Avangrid Renewables, LLC	Generation Owner
Kilgallen	Kevin	Rep'g EDP Renewables North America, LLC	Generation Owner
Kogut	George	New York Power Authority	Other Supplier
Lieberman	Steven	Old Dominion Electric Cooperative	Electric Distributor
Long	Scott	Allegheny Electric Cooperative, Inc.	Electric Distributor
Ma	Alex	Invenergy, LLC	Generation Owner
Melnyk	Markian	Atlantic Grid Operations A, LLC	Other Supplier
Merola	Becky	Noble Americas Gas & Power Corp.	Other Supplier
O'Connell	Robert	Rep'g Carroll County Energy LLC	Generation Owner
O'Connell	Robert	Rep'g PPGI Fund A/B Development, LLC	Generation Owner
Pakela	Greg	DTE Energy Trading, Inc.	Other Supplier
Pratzon	David	Rep'g Eastern Generation, LLC	Generation Owner
Pratzon	David	Rep'g Wheelabrator Frackville Energy Co., Inc.	Generation Owner
Prokop	Brenda	ITC Interconnection LLC	Transmission Owner
Rohrbach	John	Southern Maryland Electric Cooperative, Inc.	Electric Distributor
Rohrbach	John	Wabash Valley Power Association, Inc.	Electric Distributor
Rushing	Nathan	CPV Maryland, LLC	Generation Owner
Rutigliano	Tom	Rep'g Achieving Equilibrium LLC	Other Supplier
Rutigliano	Tom	Rep'g Altus Power America, Inc.	Generation Owner
Rutigliano	Tom	Rep'g Demansys Energy, LLC	Other Supplier
Rutigliano	Tom	Rep'g Earth Networks, Inc.	Other Supplier
Rutigliano	Tom	Rep'g EMC Development Company, Inc.	Other Supplier
Scarpignato	David	Calpine Energy Services, L.P.	Generation Owner

Scoglietti	Barbara	Tangent Energy Solutions, Inc.	Other Supplier
Trayers	Barry	Citigroup Energy, Inc.	Other Supplier
Wadsworth	Joe	Vitol Inc.	Other Supplier
Whitehead	Jeffrey	Direct Energy Business, LLC	Other Supplier
Wicks	Tonja	Duquesne Light Company	Transmission Owner
Wiegand-Jackson	Laurie	IPKeys Power Partners, LLC	Other Supplier
Yu	Joel	Rockland Electric Company	Transmission Owner

## NON-VOTING PARTICIPANTS

Last Name	First Name	Company	Sector
Ainspan	Malcolm	NRG Power Marketing, LLC	Generation Owner
Ament	Todd	Cube Hydro Partners, LLC	Generation Owner
Bloom	David	Baltimore Gas & Electric Company	Transmission Owner
Brown	Larry	Indiana Municipal Power Agency	Generation Owner
Burmeister	Geoff	PA Consulting Group	Not Applicable
Carmean	Gregory	OPSI	Not Applicable
Cocco	Michael	Old Dominion Electric Cooperative	Electric Distributor
Debellis	Eric	Environmental Law & Policy Center	Not Applicable
Delosa	Joe	Delaware Public Service Commission	Not Applicable
Dillon	Matthew	UGI Development	Generation Owner
Dugan	Chuck	East Kentucky Power Cooperative, Inc.	Transmission Owner
Ellison	Alan	Grays Ferry Cogeneration Partnership	Generation Owner
Farber	John	Delaware Public Service Commission	Not Applicable
Fereabend	Rick	Dominion Energy Marketing, Inc.	Generation Owner
Foladare	Ken	Tangibl Group	Not Applicable
Fort	Jim	Energy Authority (The)	Other Supplier
Foxen	Tim	Osaka Gas USA Corporation	Not Applicable
Garnett	Bryan	Duke Energy Business Services, LLC	Transmission Owner
Gebolys	Debbie	Public Utilities Commission of Ohio	Not Applicable
Gilani	Rehan	Consolidated Edison Energy, Inc.	Other Supplier
Giles	Steven	Allegheny Electric Cooperative, Inc.	Electric Distributor
Glen	Thomas	GT Power Group	Not Applicable
Gorman	Kevin	Highland Energy Group	Not Applicable
Haas	Howard	IMM	Not Applicable



Hagaman	Derek	GT Power Group	Not Applicable
Hamilton	Brian	Energy Consulting Services, LLC	Other Supplier
Hanser	Erik	Michigan Public Service Commission	Not Applicable
Harmon	Mike	Ameren Missouri	Other Supplier
Helms	Joe	Rainbow Energy Marketing Corporation	Other Supplier
Hendrix	Christopher	Texas Retail Energy, LLC	Other Supplier
Hoatson	Tom	West Deptford Energy LLC	Generation Owner
Hudis	Gabriella	Gabel & Associates	Not Applicable
Huntoon	Stephen	Energy Counsel	Not Applicable
Hurwich	Mark	Elliott Bay Energy Trading, LLC	Other Supplier
Hyatt	John	Monitoring Analytics	Not Applicable
James	Wilson	Wilson Economics	Not Applicable
Jett	William	Duke Energy Business Services, LLC	Transmission Owner
Johnson	Nick	Tenaska Power Services Co.	Generation Owner
Josyula	Siva	Monitoring Analytics	Not Applicable
Karrasch	Kim	IGS Energy	Not Applicable
Kilgallen	Kevin	Avangrid Renewables, LLC	Generation Owner
Kuhn	Tyler	DC Energy, LLC	Other Supplier
Lacy	Catharine	Dominion Resources	Not Applicable
Leasure	Jill	Keystone Conemaugh Project Office	Not Applicable
Leimann	John	Dominion Energy Marketing, Inc.	Generation Owner
Liang-Nicol	Cecilia	FirstEnergy Solutions Corp.	Transmission Owner
Logan	Sharon	FERC	Not Applicable
Long	Scott	Allegheny Electric Cooperative, Inc.	Transmission Owner
Ma	Alex	Invenergy, LLC	Generation Owner
Manning	James	North Carolina Electric Membership Corporation	Electric Distributor
Marinelli	Richard	Public Service Electric & Gas Company	Transmission Owner
Marsan	Mark	Public Service Electric & Gas Company	Transmission Owner
Martin	Bolan	FirstEnergy Solutions Corp.	Transmission Owner
Matheson	Douglas	EnerNOC, Inc.	Other Supplier
Mcalister	Lisa	American Municipal Power, Inc.	Electric Distributor
Merola	Becky	Noble Americas Gas & Power Corp.	Other Supplier
Metzler	Jakob	Castleton Commodities Merchant Trading L.P.	Other Supplier
Mok	Alan	Duke Energy Business Services, LLC	Transmission Owner
Nadel	Steven	PPL Electric Utilities Corporation d/b/a PPL Utilities	Transmission Owner



Nakajima	Nasahiro	Osaka Gas USA Corporation	Not Applicable
Norton	Chris	American Municipal Power, Inc.	Electric Distributor
Olinger	Robert	Gen Ops, LLC	Other Supplier
Ondayko	Brock	AEP Energy, Inc.	Other Supplier
Peoples	John	Duquesne Light Company	Transmission Owner
Price	Mark	DC Energy, LLC	Other Supplier
Racine-Johnson	Evan	Golden Spread Electric Cooperative	Not Applicable
Rainey	Frank	PEI Power Corporation	Generation Owner
Riding	MQ	Essential Power, LLC	Generation Owner
Robins	Pip	EMC Development Company, Inc.	Other Supplier
Robson	Matt	SESCO Enterprises, LLC	Other Supplier
Rohrbach	John	Southern Maryland Electric Cooperative	Electric Distributor
Rushing	Nathan	CPV Maryland, LLC	Generation Owner
Salanek	Alexandra	Monitoring Analytics	Not Applicable
Sasser	Jonathan	Customized Energy Solutions	Not Applicable
Schneider	Jon	FirstEnergy Solutions Corp.	Transmission Owner
Schreim	Morris	Maryland Public Service Commission	Not Applicable
Scoglietti	Barbara	Tangent Energy Solutions, Inc.	Other Supplier
Seelaus	Tim	EMC Development Company, Inc.	Other Supplier
Shanker	Roy	H.Q. Energy Services (U.S.), Inc.	Other Supplier
Stern	Alexander	Public Service Electric & Gas Company	Transmission Owner
Stewart	Travis	Gabel & Associates	Not Applicable
Stubbe	Judy	Euke Energy Ohio, Inc.	Transmission Owner
Sweeney	Rory	RTO Insider	Not Applicable
Tangirala	Subha	ABB Power	Not Applicable
Tatum	Ed	American Municipal Power, Inc.	Electric Distributor
Thomson	Heather	Mid-Atlantic Renewable Energy Coalition	Not Applicable
Tsao	Stephanie	S & P Global	Not Applicable
Vargo	Daniel	Allegheny Electric Cooperative, Inc.	Transmission Owner
Vennekotter-Rothey	Kristin	American Municipal Power, Inc.	Electric Distributor
Wadsworth	Joe	Vitol, Inc.	Other Supplier
Waskiewicz	Michael	Hartree Partners, LP	Other Supplier
Watson	Mark	Platts	Not Applicable
Webster	John	Icetec.com, Inc.	Other Supplier
Wehr	Christopher	FirstEnergy Solutions Corp.	Transmission Owner



Wick	Tonja	Duquesne Light Company	Transmission Owner
Wiegand-Jackson	Laurie	IPKeys Power Partners LLC	Other Supplier
Wilhite	Ted	FirstEnergy Solutions Corp.	Transmission Owner
Williams	Amber	New York State Electric & Gas Corporation	Other Supplier
York	Katherine	Tennessee Valley Authority (The)	Other Supplier

## PJM PARTICIPANTS

Last Name	First Name	Company	Sector
Baker	Scott	PJM Interconnection, LLC	Not Applicable
Barrett	Francis	PJM Interconnection, LLC	Not Applicable
Bastian	Jeff	PJM Interconnection, LLC	Not Applicable
Bell	Jerry	PJM Interconnection, LLC	Not Applicable
Bell	Jerry	PJM Interconnection, LLC	Not Applicable
Berner	Aaron	PJM Interconnection, LLC	Not Applicable
Bhavaraju	Murty	PJM Interconnection, LLC	Not Applicable
Bressler	Stu	PJM Interconnection, LLC	Not Applicable
Brian	Bricklin	PJM Interconnection, LLC	Not Applicable
Brown	Rich	PJM Interconnection, LLC	Not Applicable
Bruno	Joshua	PJM Interconnection, LLC	Not Applicable
Bruno	Patrick	PJM Interconnection, LLC	Not Applicable
Bryson	Mike	PJM Interconnection, LLC	Not Applicable
Budney	David	PJM Interconnection, LLC	Not Applicable
Burdis	Tim	PJM Interconnection, LLC	Not Applicable
Callis	Joe	PJM Interconnection, LLC	Not Applicable
Carroll	Becky	PJM Interconnection, LLC	Not Applicable
Caven	Augustine	PJM Interconnection, LLC	Not Applicable
Chao	Hungpo	PJM Interconnection, LLC	Not Applicable
Chmielewski	Brian	PJM Interconnection, LLC	Not Applicable
Connell	Jason	PJM Interconnection, LLC	Not Applicable
Croop	Danielle	PJM Interconnection, LLC	Not Applicable
Dolan	James	PJM Interconnection, LLC	Not Applicable
Dotter	Ray	PJM Interconnection, LLC	Not Applicable
Driscoll	Mary Ellen	PJM Interconnection, LLC	Not Applicable
Duane	Vince	PJM Interconnection, LLC	Not Applicable



Egan	Amanda	PJM Interconnection, LLC	Not Applicable
Esterly	Theresa	PJM Interconnection, LLC	Not Applicable
Fabiano	Janell	PJM Interconnection, LLC	Not Applicable
Fallin	Tom	PJM Interconnection, LLC	Not Applicable
Fernandez	Ray	PJM Interconnection, LLC	Not Applicable
Ford	Adrien	PJM Interconnection, LLC	Not Applicable
Franks	Ed	PJM Interconnection, LLC	Not Applicable
Glatz	Sue	PJM Interconnection, LLC	Not Applicable
Glazer	Craig	PJM Interconnection, LLC	Not Applicable
Gledhill	Andrew	PJM Interconnection, LLC	Not Applicable
Harling	Steven	PJM Interconnection, LLC	Not Applicable
Hauske	Tom	PJM Interconnection, LLC	Not Applicable
Hendrzak	Chantal	PJM Interconnection, LLC	Not Applicable
Herman	Mike	PJM Interconnection, LLC	Not Applicable
Holland	Risa	PJM Interconnection, LLC	Not Applicable
Holter	Natasha	PJM Interconnection, LLC	Not Applicable
Hsia	Eric	PJM Interconnection, LLC	Not Applicable
Hugee	Jacquelynn	PJM Interconnection, LLC	Not Applicable
Tribulski	Jen	PJM Interconnection, LLC	Not Applicable
Keech	Adam	PJM Interconnection, LLC	Not Applicable
Kenney	Susan	PJM Interconnection, LLC	Not Applicable
Keshavamurthy	Bhavana	PJM Interconnection, LLC	Not Applicable
Koza	Frank	PJM Interconnection, LLC	Not Applicable
Langbein	Pete	PJM Interconnection, LLC	Not Applicable
Larocque	Matthew	PJM Interconnection, LLC	Not Applicable
Macgibbon	Doug	PJM Interconnection, LLC	Not Applicable
Mcanany	James	PJM Interconnection, LLC	Not Applicable
McLaverty	Megan	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
Ostertag	Kelly	PJM Interconnection, LLC	Not Applicable
Ott	Andy	PJM Interconnection, LLC	Not Applicable
Patel	Keyur	PJM Interconnection, LLC	Not Applicable
Perrera	Asanga	PJM Interconnection, LLC	Not Applicable



Pilong	Chris	PJM Interconnection, LLC	Not Applicable
Quevada	Jason	PJM Interconnection, LLC	Not Applicable
Quintavalla	Ginger	PJM Interconnection, LLC	Not Applicable
Riley	Susan	PJM Board Member	Not Applicable
Rocha	Patricio	PJM Interconnection, LLC	Not Applicable
Scheidecker	Paul	PJM Interconnection, LLC	Not Applicable
Schmidt	Jeff	PJM Interconnection, LLC	Not Applicable
Schuyler	Ken	PJM Interconnection, LLC	Not Applicable
Schweizer	David	PJM Interconnection, LLC	Not Applicable
Scott	Nicole	PJM Interconnection, LLC	Not Applicable
Seiler	Ken	PJM Interconnection, LLC	Not Applicable
Shparber	Steve	PJM Interconnection, LLC	Not Applicable
Snyder	Sue	PJM Interconnection, LLC	Not Applicable
Souder	Dave	PJM Interconnection, LLC	Not Applicable
Stadlmeyer	Rebecca	PJM Interconnection, LLC	Not Applicable
Stotesbury	Christina	PJM Interconnection, LLC	Not Applicable
Takahashi	Mark	PJM Board Member	Not Applicable
Velasco	Cheryl	PJM Interconnection, LLC	Not Applicable
Walter	Laura	PJM Interconnection, LLC	Not Applicable
Ward	Michael	PJM Interconnection, LLC	Not Applicable
Weiss	Glenn	PJM Interconnection, LLC	Not Applicable
Zadlo	Tom	PJM Interconnection, LLC	Not Applicable