

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Increasing Market and Planning Efficiency  
through Improved Software

Docket No. AD10-12-005

SUPPLEMENTAL AGENDA NOTICE

(May 23, 2014)

Take notice that the Commission staff will convene a technical conference on June 23, 24, and 25, 2014 to discuss opportunities for increasing real-time and day-ahead market efficiency through improved software.

This conference will bring together diverse experts from public utilities, the software industry, government, research centers and academia and is intended to build on the discussions initiated in the previous Commission staff technical conferences on increasing market and planning efficiency through improved software.

The agenda for this conference is attached. If any changes occur, the revised agenda will be posted on the calendar page for this event on the Commission's web site<sup>1</sup> prior to the event.

Kimberly D. Bose,  
Secretary.

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<sup>1</sup> <http://www.ferc.gov/industries/electric/indus-act/market-planning/2014-conference.asp>.

Monday, June 23, 2014

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8:30 AM Introduction (3M-2)  
**Richard O'Neill**, Federal Energy Regulatory Commission (*Washington, District of Columbia*)

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9:00 AM Session M1 (Meeting Room 3M-2)  
**Overcoming Computational Challenges on Large Scale Security Constrained Unit Commitment Problems - MISO and ALSTOM's Experience with MIP Solver**  
Yonghong Chen, MISO (*Carmel, Indiana*)  
Xing Wang, Qianfan Wang, Alstom Grid (*Redmond, Washington*)  
**Experiences of Operation Efficiency Evaluation and Improvement at PJM**  
Hong Chen, PJM Interconnection (*Audubon, Pennsylvania*)  
**Day-Ahead and Short-Term Unit Commitment OPF with Voltage Stability Constraints**  
Khaled Abdul-Rahman, Enamul Haq, Jun Wu, California ISO (*Folsom, California*)  
Hsiao-Dong Chiang, Bigwood Systems, Inc. (*Ithaca, New York*)  
**Reserve Requirement Calculator in SPP Integrated Marketplace**  
Jie Wan, Alstom Grid (*Redmond, Washington*)  
Casey Cathey, Southwest Power Pool (*Little Rock, Arkansas*)

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11:00 AM Break

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11:15 AM Session M2 (Meeting Room 3M-2)  
**Optimizing Wind Generation in ERCOT Nodal Market**  
Resmi Surendran, Hailong Hui, ERCOT (*Taylor, Texas*)  
Chien-Ning Yu, ABB/Ventyx (*Santa Clara, California*)  
**Wind Dispatch Using Do-Not-Exceed Limit**  
Tongxin Zheng, Eugene Litvinov, Jinye Zhao, ISO New England (*Holyoke, Massachusetts*)

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12:15 PM Lunch

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1:30 PM Session M3 (Meeting Room 3M-2)  
**Estimation of the Secure Range for Dynamic Interchange Adjustment**  
Slava Maslennikov, ISO New England (*Holyoke, Massachusetts*)  
Yuri Makarov, Pavel Etignov, PNNL (*Richland, Washington*)  
**Topology Control Algorithms Simulations in PJM with AC Modeling**  
Pablo Ruiz, Xiao Li, Bruce Tsuchida, The Brattle Group (*Cambridge, Massachusetts*)  
Michael C. Caramanis, Evgeniy Goldis, Boston University (*Boston, Massachusetts*)  
C. Russ Philbrick, Polaris Systems Optimization (*Shoreline, Washington*)  
Aleksandr Rudkevich, Newton Energy Group (*Newton, Massachusetts*)  
Richard D. Tabors, Across The Charles (*Cambridge, Massachusetts*)  
**On the Use of Operating Parameters in Defining Marginal Cost and Minimizing Uplift**  
Paul Sotkiewicz, PJM Interconnection, LLC (*Audubon, Pennsylvania*)

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3:00 PM Break

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3:30 PM Session M4 (Meeting Room 3M-2)  
**Operational and Practical Considerations for Stochastic Unit Commitment Solutions**  
Nivad Navid, Todd Ramey, Dhiman Chatterjee, MISO (*Carmel, Indiana*)  
**Performance-based Regulation Compensation Improve PJM Market Efficiency**  
Ying Xiao, Alstom Grid (*Redmond, Washington*)  
Paul Sotkiewicz, PJM Interconnection, LLC (*Audubon, Pennsylvania*)  
**Performance-Based Pricing of Frequency Regulation in Electricity Markets**  
Alex Papalexopoulos, Panagiotis Andrianesis, ECCO International (*San Francisco, California*)

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5:00 PM Adjourn

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Tuesday, June 24, 2014

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8:15 AM	Arrive and welcome (3M-2)
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8:30 AM	<p>Session T1-A (Meeting Room 3M-2)</p> <p><b>On Deployment Barriers and Research Challenges for Stochastic Unit Commitment</b> Jean-Paul Watson, Sandia National Laboratories (<i>Albuquerque, New Mexico</i>)</p> <p><b>A Comparison of Various Unit Commitment Techniques Dealing with Uncertainty</b> Daniel Kirschen, Yury Dvorkin, Yishen Wang, Ting Qiu, Hrvoje Pandzic, University of Washington (<i>Seattle, Washington</i>)</p> <p><b>An Improved Stochastic Unit Commitment Formulation to Accommodate Wind Uncertainty</b> Canan Uckun, Audun Botterud, Argonne National Laboratory (<i>Lemont, Illinois</i>) John R. Birge, University of Chicago (<i>Chicago, Illinois</i>)</p> <p><b>Economic Impacts of Wind Covariance Estimation on Power Grid Operations</b> Cosmin Petra, Mihai Anitescu, Victor Zavala, Argonne National Laboratory (<i>Argonne, Illinois</i>)</p>
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	<p>Session T1-B (Meeting Room 3M-4)</p> <p><b>Full AC Network Integrated Core Solver for the SuperOPF Framework</b> Hsiao-Dong Chiang, Bin Wang, Patrick Causgrove, Bigwood Systems, Inc. (<i>Ithaca, New York</i>)</p> <p><b>Graph-Theoretic Algorithm for Arbitrary Polynomial Optimization Problems</b> Javad Lavaei, Ramtin Madani, Ghazal Fazelnia, Abdulrahman Kalbat, Columbia University (<i>New York, New York</i>) Somayeh Sojoudi, New York University (<i>New York, New York</i>)</p> <p><b>Moment-Based Relaxations of Optimal Power Flow Problems</b> Daniel Molzahn, Ian Hiskens, University of Michigan (<i>Ann Arbor, Michigan</i>)</p> <p><b>Local Optima and Bounds in Optimal Power Flow Problems</b> Kenneth McKinnon, Edinburgh University (<i>Edinburgh, United Kingdom</i>) Waqqas Bukhsh, Technical University of Denmark (<i>Copenhagen, Denmark</i>)</p>
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10:30 AM	Break
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10:45 AM	<p>Session T2-A (Meeting Room 3M-2)</p> <p><b>Robust Reserve Modeling for Wind Power Integration in Ramp-Based Unit Commitment</b> German Morales-Espana, Royal Institute of Technology (KTH) (<i>Madrid, Spain</i>) Ross Baldick, University of Texas (<i>Austin, Texas</i>) Javier Garcia-Gonzalez, Andres Ramos, Universidad Pontificia Comillas (<i>Madrid, Spain</i>)</p> <p><b>Concepts and Practice Using Stochastic Programs for Determining Reserve Requirements</b> Robert Entriken, Eamonn Lannoye, Aidan Tuohy, EPRI (<i>Palo Alto, California</i>) Garret LaBove, Russ Philbrick, PSO Edward Lo, CAISO Larsen Plano, PG&amp;E</p> <p><b>SCUC and SCD Software for Fully Coordinated Regional Power Markets</b> Assef Zobian, Cambridge Energy Solutions (<i>Cambridge, Massachusetts</i>) Kurt Glaesemann, Northwest National Laboratory (<i>Richland, Washington</i>)</p>
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	<p>Session T2-B (Meeting Room 3M-4)</p> <p><b>Establishing a Consistent State of the European Electricity Transmission Network by Merging Non-synchronised Data from Several Countries with an AC Optimal Power Flow</b> Maxime Fender, Artelys (<i>Montreal, Canada</i>) Mireille Chevallier, Rte (<i>Versailles, France</i>) Sylvain Mouret, Pierre Girardeau, Manuel Ruiz, Artelys (<i>Paris, France</i>)</p> <p><b>Operating Beyond PV Curve Limits</b> Marija Ilic, Jeffrey Lang, NETSS, Inc (<i>Sudbury, Massachusetts</i>) Sanja Cvijic</p> <p><b>Stochastic Optimal Power Flow with Uncertain Reserves from Flexible Loads</b> Johanna Mathieu, Siqian Chen, University of Michigan (<i>Ann Arbor, Michigan</i>) Maria Vrakopoulou, Goran Andersson, ETH Zurich (<i>Zurich, Switzerland</i>)</p>
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Tuesday, June 24, 2014

12:15 PM	Lunch
1:30 PM	<p>Session T3-A (Meeting Room 3M-2)</p> <p><b>A Stochastic Electricity Market Clearing Formulation with Consistent Pricing Properties</b> Victor Zavala, Mihai Anitescu, Argonne National Laboratory (<i>Argonne, Illinois</i>)</p> <p><b>Stochastic Modeling at Multiple Timescales</b> Hongyu Wu, Erik Ela, NREL (<i>Golden, Colorado</i>)</p> <p><b>Multistage Robust Unit Commitment with Affine Policies and Efficient Algorithms</b> Sun Xu, Alvaro Lorca, Georgia Institute of Technology (<i>Atlanta, Georgia</i>) Tongxin Zheng, Eugene Litvinov, ISO New England (<i>Holyoke, Massachusetts</i>)</p> <hr/> <p>Session T3-B (Meeting Room 3M-4)</p> <p><b>Model-Predictive Cascade Mitigation in Electric Power Systems With Storage and Renewables</b> Mads Almassalkhi, Ian Hiskens, University of Michigan (<i>Ann Arbor, Michigan</i>)</p> <p><b>Multi-time-step Chance Constrained Generation Re-dispatch</b> Daniel Bienstock, Columbia University (<i>New York, New York</i>) Michael Chertkov, Scot Backhaus, Russell Bent, Los Alamos National Laboratory (<i>Los Alamos, New Mexico</i>)</p> <p><b>Quantifying the Trade-off Between Secure and Economic Operation of Power Systems Under Uncertainty</b> Maria Vrakopoulou, John Lygeros, Goeran Andersson, ETH Zurich (<i>Zurich, Switzerland</i>) Kostas Margellos, UC Berkeley (<i>Berkeley, California</i>)</p> <hr/>
3:00 PM	Break
3:30 PM	<p>Session T4-A (Meeting Room 3M-2)</p> <p><b>Scenario Reduction for Scalable Stochastic Unit Commitment</b> Sarah Ryan, Yonghan Feng, Iowa State University (<i>Ames, Iowa</i>) Cesar Silva-Monroy, Jean-Paul Watson, Sandia National Laboratories (<i>Albuquerque, New Mexico</i>) David L. Woodruff, University of California Davis (<i>Davis, California</i>)</p> <p><b>Stochastic Models for Generation Unit Commitment</b> Tim Schulze, The School of Mathematics (<i>Edinburgh, United Kingdom</i>) Kenneth I.M. McKinnon, The University of Edinburgh (<i>Edinburgh, United Kingdom</i>)</p> <p><b>A Scalable Decomposition Algorithm for Solving Stochastic Transmission and Generation Investment Planning Problems</b> Francisco Munoz, Jean-Paul, Sandia National Laboratories (<i>Albuquerque, New Mexico</i>)</p> <hr/> <p>Session T4-B (Meeting Room 3M-4)</p> <p><b>Computational Performance of the Current-Voltage (IV) Linearization of the ACOPF: Before Extensions</b> Anya Castillo, Johns Hopkins University (<i>Baltimore, Maryland</i>)</p> <p><b>Transmission Switching with the Current-Voltage (IV) Linearization of the ACOPF</b> Paula Lipka, University of California, Berkeley (<i>Berkeley, California</i>)</p> <p><b>Evaluating High Penetrations of Off-Shore Wind using SMART-ISO</b> Warren B. Powell, Hugo P. Simao, Princeton University (<i>Princeton, New Jersey</i>)</p> <p><b>Computational Study of Security Constrained Economic Dispatch with Multi-period Rescheduling</b> Michael Ferris, Yanchao Liu, Feng Zhao, University of Wisconsin (<i>Madison, Wisconsin</i>)</p> <hr/>
6:00 PM	Adjourn

Wednesday, June 25, 2014

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8:45 AM Arrive and welcome (3M-2)

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9:00 AM Session W1-A (Meeting Room 3M-2)

**Distributionally Robust Congestion Management with Dynamic Line Ratings**

Feng Qiu, Jianhui Wang, Argonne National Laboratory (*Argonne, Illinois*)

**Real Time Dynamic Path Limit Computation for Market Efficiency and Grid Reliability**

Nilanjan Ray Chaudhuri, Naresh Acharya, Chaitanya Baone, Santosh Veda, GE Global Research (*Niskayuna, New York*)

**Implementation Of Dynamic Thermal Ratings in the Operational Environment**

Kwok Cheung, Alstom Grid (*Redmond, Washington*)

Hongxia Wu

**Identifying, Modeling and Utilizing The Hidden Capacity in the Transmission Network**

Richard Tabors, Tabors Caramanis Rudkevich (*Cambridge, Massachusetts*)

Adam Rousselle, Utility Risk Management Corporation (*New Hope, Pennsylvania*)

Aleksandr Rudkevich, Newton Energy Group (*Newton, Massachusetts*)

Michael Seelhof, Tabors Caramanis Rudkevich (*New York, New York*)

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Session W1-B (Meeting Room 3M-4)

**Stochastic Operations Toolkit for Power Systems with High Penetration of Solar Energy**

Cesar Silva-Monroy, Jean-Paul Watson, Francisco Munoz, Sandia National Laboratories (*Albuquerque, New Mexico*)

Richard Chen, Ali Pinar, Sandia National Laboratories (*Livermore, California*)

Andrew Mills, Lawrence Berkeley National Laboratory (*Berkeley, California*)

**Use of Cloud Computing in Power Market Simulations**

Aleksandr Rudkevich, John Goldis, Newton Energy Group (*Cambridge, Massachusetts*)

Richard Tabors, Lorna Omondi, Tabors Caramanis Rudkevich (*Cambridge, Massachusetts*)

**Incorporating Intra-hour Market Pricing**

Gary Dorris, Ascend Analytics, LLC (*Boulder, Colorado*)

**Facilitating Appropriate Compensation of Electric Energy and Reserve Through Standardized Contracts**

Leigh Tesfatsion, Deung-Yong Heo, Iowa State University (*Ames, Iowa*)

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11:00 AM Break

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11:15 AM Session W2-A (Meeting Room 3M-2)

**Concentric Relaxations and Transmission Switching**

Jim Ostrowski, Mike Hare, University of Tennessee (*Knoxville, Tennessee*)

Jianhui Wang, Argonne National Laboratory (*Argonne, Illinois*)

**Probabilistic Security Analysis of Optimal Transmission Switching**

Daniel Kirschen, Pierre Henneaux, University of Washington (*Seattle, Washington*)

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Session W2-B (Meeting Room 3M-4)

**Experience Solving the RTO Unit Commitment Test System**

Stephen Elbert, Pacific Northwest National Laboratory (*Richland, Washington*)

**Stochastic Look-ahead Dispatch with Intermittent Renewable Generation via Progressive Hedging and L-shaped Method**

Yingzhong (Gary) Gu, Le Xie, Texas A&M University (*College Station, Texas*)

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12:15 PM Adjourn

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