



NORTHEAST POWER COORDINATING COUNCIL, INC.  
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December 21, 2018

Members, Reliability Coordinating Committee  
and  
Members, Task Force on Coordination of Operation  
Members, Task Force on Coordination of Planning  
Members, Task Force on Infrastructure Security and Technology  
Members, Task Force on System Protection  
Members, Task Force on System Studies

Re: Minutes of the September 5, 2018 RCC Meeting

Sir / Madam:

Attached is the Minutes of the September 5, 2018 meeting of the NPCC Reliability Coordinating Committee, as approved at the December 4, 2018 RCC meeting.

Sincerely,

*Phil Fedora*

Philip A. Fedora  
Assistant Vice President - Reliability Services

cc: NPCC Staff



**NORTHEAST POWER COORDINATING COUNCIL**  
**Reliability Coordinating Committee Minutes**  
**September 5, 2018**

Mr. Evans-Mongeon called the meeting of the Reliability Coordinating Committee (RCC), held at the Courtyard by Marriott Saratoga Springs, NY to order at 10:00 am.

**Attendance**

**Officers of the Reliability Coordinating Committee**

Brian Evans-Mongeon, Chair	Utility Services, Inc.
Randy Crissman, Co-Vice Chair	New York Power Authority
Dave Conroy, Co-Vice Chair	Central Maine Power Company

**Sector 1 - Transmission Owners**

Central Hudson Gas & Electric Corporation	Frank Pace
Central Maine Power Company	David Conroy
Consolidated Edison Company of New York, Inc.	Martin Paszek – Alternate (via phone)
Eversource Energy	George Wegh
Hydro-One, Inc.	Tom Irvine
Long Island Power Authority	Anie Philip (via phone)
National Grid USA	Michael Schiavone
New York Power Authority	Brian Hayduk - Alternate (proxy to Randy Crissman)
Nova Scotia Power, Inc.	(via written proxy)
Rochester Gas & Electric Corporation	Will Nichols – Alternate (via phone)
The United Illuminating Company	David Bradt
Vermont Electric Power Company, Inc.	Hantz Presume

**Sector 2 – Reliability Coordinators**

Hydro-Quebec TransEnergie	Stephane Desbiens - Alternate
ISO New England, Inc.	Michael Henderson
New Brunswick Power Corporation	Rich Kowalski – Alternate (proxy to Randy MacDonald)
New York ISO	Zach Smith
Ontario IESO	Gabriel Adam (via phone)

**Sector 3 – Transmission Dependent Utilities, Distribution Companies and Load Serving**

**Entities**

Consolidated Edison Company of New York, Inc.	(proxy to Sofia Gadea Omelchenko)
Eversource Energy	Barry Bruun (via phone)
Long Island Power Authority	(proxy to Anie Philip – via phone)
New York Power Authority	(proxy to Randy Crissman)

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New Brunswick Power Corporation                      Randy MacDonald (via phone)

**Sector 4 Generation Owners**

Consolidated Edison Company                      (proxy to Sofia Gadea Omelchenko)  
of New York, Inc.

Dominion Resources Services, Inc.                      Sean Bodkin  
Long Island Power Authority                      (proxy to Anie Philip – via phone)

New York Power Authority                      Randy Crissman

NextEra Energy Resources                      Allen Schriver (via phone)

Ontario Power Generation, Inc.                      David Kwan – Alternate – via phone

Vistra Energy Corporation                      Ken Stell (via phone)

**Sector 5 – Marketers, Brokers, and Aggregators**

Consolidated Edison Company                      Sofia Gadea Omelchenko

Long Island Power Authority                      (proxy to Anie Philip – via phone)

New York Power Authority                      (proxy to Randy Crissman)

Utility Services, Inc.                      Brian Evans-Mongeon

**Sector 6 – State and Provincial Regulatory and/or Governmental Authorities**

New York Power Authority                      Shivaz Chopra

New York State Department of Public                      Humayun Kabir – Alternate (via phone)  
Service

**Sector 7 – Sub-Regional Reliability Councils, Customers, other Regional Entities and Interested Entities**

New York State Reliability Council, LLC                      Roger Clayton

**NPCC Staff**

Gerry Dunbar                      Manager of Reliability Criteria Requirements

Phil Fedora                      Assistant Vice President, Reliability Services

Brian Hogue                      Information Systems & Security  
Management

Andreas Klaube                      Engineer, Operations

Quoc Le (via phone)                      Manager, System Planning and Protection

Michael Lombardi                      Manager, System Studies

Andrey Oks                      Director of Operations Coordination

Ralph Rufrano                      Manager, Events Analysis

Rafael Sahiholamal                      Senior Reliability Engineer

Edward Schwerdt                      President & CEO

**Guests**

David Cadregari                      Chair, Task Force on Infrastructure Security  
& Technology

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Alessia Dawes	Chair, CP-11 Working Group
Kevin DePugh	Chair, Task Force on System Studies
Patrick Doyle	Chair, Task Force on Coordination of Operation
Alex Echevarria	Chair, Task Force on System Protection
Dean Latulipe (part time - via phone)	Chair, SS-38 Working Group
Aaron Markham	Vice Chair, Task Force on Coordination Operation
Dan Schwarting	Vice Chair, CP-11 Working Group
William Vesely	Vice Chair, Task Force on Infrastructure Security & Technology
Ben Wu	Orange & Rockland Utilities

**Quorum Statement**

Mr. Fedora indicated that a quorum had been achieved, by member attendance, proxy, or alternate designation. He also indicated he received the following written proxy:

**Sector 1 – Transmission Owners**

David Stanford – Nova Scotia Power, Inc.

**Antitrust Guidelines for NPCC Meetings**

A motion was made and seconded to waive the reading of the NPCC Antitrust Compliance Guidelines and was unanimously passed.

**President & CEO Report**

**NPCC Board Strategic Session**

Mr. Schwerdt reported that the NPCC Board will be holding its Annual Strategic Planning Session later today. During that session the Board will reflect on the changing reliability landscape faced by NPCC, both in terms of the changes within the industry itself as well as the emerging risks that the industry faces. The discussions will be wide ranging and contemplative in order to consider different perspectives and alternatives for the future. Considerations will include where the industry, NERC and NPCC will be seven to ten years in the future. The output of this discussion is used to inform NPCC's budget and operational planning, as well as to provide input to NERC's strategic planning discussions that the ERO Enterprise engages in with the CEO's of the Regional Entities, the NERC Board of Trustees, the stakeholders at the Member Representatives Committee, and the other relevant committees of NERC that NPCC representatives actively participate in. The meeting today is organized around the recent report of the Reliability Issues Steering Committee which was chaired by Mr. Brandien from ISO-New England.



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**Update on Supply Chain Risks**

On August 10, 2017, the NERC Board of Trustees approved the Cyber Security – Supply Chain Risk Management requirements in the following standards: CIP-005-6, CIP-010-3, and CIP-013-1. As part of that approval, the Board directed NERC to study the nature and complexity of cyber security supply chain risks, including risks associated with low impact assets not currently subject to the Supply Chain Standards. NERC staff provided an interim report to the BOT during its August 2018 meeting that included a summary of the Supply Chain Risk Assessment Report that was prepared for NERC by the Electric Power Research Institute. Key takeaways from that report include: the identification of some 10 emerging practices that could reduce additional supply chain risk, the recommendation for additional research to model and assess the impact of a common-mode threat, as well as suggested data analysis techniques for assessing vulnerabilities.

In addition to the staff presentation, the North American Transmission Forum referenced a Cyber Security Supply Chain Risk Management Guidance document that it had made publicly available as a part of its policy input to the NERC Members Representative Committee and the Board of Trustee’s August meetings. That document (included in the Agenda package) describes leading practices for establishing and implementing a cyber security supply chain risk management plan, including procurement, specification, vendor requirements, and managing existing equipment activities. The hallmarks of the described approach include:

- Foundational Practices that require coordination between supply chain risks and cyber security risk management efforts.
- Organization-Wide Coordination throughout all layers of the business and the system-development life cycle. And lastly,
- Risk Management Processes that define the cyber security supply chain objectives, evaluate the risks and respond to those risks.

He encouraged the RCC to freely share the document within their respective organizations.

Mr. Crissman added that the DHS recently announced the formation of the National Risk Management Center (NRMC), and the creation of an Information and Communications Technology (ICT) Supply Chain Task Force. The intent of the Task Force is to apply cyber security supply chain risk management plans to all the critical infrastructures across the country, not just for the electricity sector.

**Chair Report**

**Agenda**

Mr. Evans-Mongeon reviewed the Agenda provided in the Agenda package; no changes were made.

**The RCC then approved the Agenda provided in the Agenda package.**



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**RCC Nominating Committee**

Mr. Evans-Mongeon reminded the RCC that Mr. Crissman would succeed him as RCC Chair in 2019. He added that a Nominating Committee needs to be formed to recommend candidate(s) for the position of RCC Co-Vice Chair for 2019; the two Co- Vice Chairs need to be from different voting sectors. He asked for volunteers for the Nominating Committee. Mr. Evans-Mongeon asked Mr. Fedora to coordinate their efforts.

**[Following the meeting, Messrs. Clayton, Wu and Irvine) volunteered to serve on the Nominating Committee.]**

**Development of 2019-2020 Task Force/RCC Work Plans**

Mr. Evans-Mongeon reminded the Task Force Chairs and the RCC that review and approval of the proposed 2019 - 2020 Task Force Work Plans will take place at the December 4, 2018 RCC meeting. The review and approval of the proposed 2019 RCC Work Plan will take place following the RCC's approval of the proposed NPCC Task Force 2019 – 2020 Work Plans later in that meeting.

**RCC Scope**

Mr. Evans-Mongeon referred to the RCC Scope provided in the Agenda package, which was approved by the NPCC Board at its meeting on January 31, 2018. He asked the RCC to review and provide Mr. Fedora any comments/changes prior to the December 4, 2018 RCC meeting, the NPCC Board will consider the RCC Scope at its January 2019 meeting.

**NPCC 2018 General Meeting**

Mr. Evans-Mongeon referred the RCC to the notice included in the Agenda package – the 2018 NPCC General Meeting will be held at The Westin Prince Toronto Hotel, starting at 1:00 pm on Wednesday, December 5, 2018.

**Proposed 2019 RCC Meeting Dates**

Mr. Fedora confirmed the following dates and locations for the 2019 RCC meetings:

- ✓ Wednesday February 27, 2019 - New York Times Square Residence Inn by the Marriott, NYC
- ✓ Wednesday May 29, 2019 - New York Times Square Residence Inn by the Marriott, NYC
- ✓ Wednesday September 4, 2019 - New York Times Square Residence Inn by the Marriott, NYC
- ✓ Tuesday December 3, 2019 - Montreal Marriott Chateau Champlain, Montreal, Quebec  
(in conjunction with the NPCC 2019 Board/Annual/General Meetings)

**Impacts of Photovoltaic and Distributed Energy Resources (DER) netting**

Mr. Evans-Mongeon shared his experience with distribution system DER netting; cloud cover influencing the amount of 5% voltage reduction testing, and PRC-08 (UFLS) Standard audit performance dependent on the varying amount of amount of DERs on the system from year to year.



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Mr. Henderson mentioned recent related DER articles in the IEEE Power and Energy magazine – he expressed his opinion that assessments need to look at the system more probabilistically, rather than from the deterministic point of view taken by current Standards requirements.

Mr. Adam suggested that different assessment tools need to be considered, depending on the circumstance and objective of the study. Mr. Hayduk noted the challenges associated with gathering the data needed to truly understand system performance. Mr. Henderson added that there is a balance between observability and controllability. Mr. Bodkin agreed that there is a data/information problem identifying the amounts of behind the meter solar generation on the system.

**Consent Agenda**

The Reliability Coordinating Committee unanimously approved (written proxy votes in favor) the following Consent Agenda items:

**September 5, 2018 Meeting Minutes**

The Draft-For-Approval Minutes of the September 5, 2018 Reliability Coordinating Committee were approved, with the changes as noted at the meeting.

**RCC Membership Changes**

The following changes to RCC Membership were approved:

**Sector 1, Transmission Owners**

- ✓ Ms. Joy Brake succeeds Mr. James Delorme as an alternate, both for Nova Scotia Power, Inc.
- ✓ Mr. Brian Hayduk succeeds Mr. Michael Schiavone as a member, both for National Grid USA, effective October 1, 2018.
- ✓ Mr. Bart Franey succeeds Mr. Brian Hayduk as an alternate, both for National Grid USA, effective October 1, 2018.

Mr. Fedora indicated that Mr. Schiavone has announced his retirement at the end of the month. The RCC acknowledged and thanked Mr. Schiavone for his contributions to NPCC and the RCC during his career and wished him well in his upcoming retirement.

**Task Force Roster Changes**

The following changes to Task Force and Working Group memberships were approved:

**Task Force on Coordination of Operations**

- ✓ Mr. Matthew Antonio succeeds Mr. Michael Schiavone as an alternate for National Grid USA.
- ✓ Mr. James Delorme will no longer serve as an alternate for the Nova Scotia Power, Inc.
- ✓ Mr. Dave Kelly will no longer serve as an alternate for the Nova Scotia Power, Inc.
- ✓ Mr. Jason Boniface will serve as the alternate for Hydro One, Inc.
- ✓ Mr. Jonathan Pollock will serve as the alternate for the New Brunswick Power Corporation.





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**Task Force on Coordination of Planning**

- ✓ Mr. Edward Roedel will serve as an alternate member for The United Illuminating Company.

**Task Force on Infrastructure Security and Technology**

- ✓ Mr. Jamie Rees succeeds Mr. Neal Hickey as a member, both for the New Brunswick Power Corporation.
- ✓ Mr. Sheraz Majid succeeds Mr. Alan Wong as a member, both for Hydro One, Inc.
- ✓ Ms. Vicki O'Leary succeeds Mr. Mark Kenny as a member, both for Eversource Energy.

**Task Force on System Studies**

- ✓ Mr. Keith Burrell succeeds Ms. Yachi Lin as an alternate member, both of the New York ISO.

**Task Force on System Protection**

- ✓ Ms. Yujie Zhang succeeds Mr. Len Swanson as an alternate, both for National Grid USA.
- ✓ Mr. Keith Lee will serve as a member for Hydro One, Inc.
- ✓ Mr. Anthony Napikoski from The United Illuminating Company will serve as the Vice-Chair.

**CO-1 Working Group on Control Performance**

- ✓ Mr. Jonathan Beaudoin succeeds Mr. Hubert Nolet- Côté as an alternate, both of Hydro-Québec TransÉnergie.
- ✓ Mr. Brad Greer succeeds Mr. Jonathan Pollock as a member for New Brunswick Power Corporation.
- ✓ Mr. Kyle Craig succeeds Mr. Brad Greer as an alternate, both of New Brunswick Power Corporation.
- ✓ Mr. Bill Henson from ISO-New England, Inc. succeeds Mr. Jonathan Pollock from New Brunswick Power Corporation as the Chair.
- ✓ Mr. Dominic Richard from Hydro-Québec TransÉnergie succeeds Mr. Bill Henson from ISO New England, Inc. as the Vice-Chair.

**CO-11 Working Group on Restoration**

- ✓ Mr. Martin Beaudin succeeds Mr. Patrick Toner as a member, both for Hydro-Québec TransÉnergie.
- ✓ Mr. Patrick Toner will serve as an alternate for Hydro-Québec TransÉnergie.

**CO-12 Working Group on Seasonal Assessment**

- ✓ Mr. Scot Rolfe succeeds Mr. Michael Courchesne as a member, both for ISO New England, Inc.
- ✓ Mr. Michael Courchesne succeeds Mr. Scot Rolfe as an alternate, both from ISO New England, Inc.
- ✓ Mr. Tim Hicks succeeds Mr. Rod Hicks as a member, both for New Brunswick Power Corporation.
- ✓ Mr. Rod Hicks will serve as an alternate for New Brunswick Power Corporation.

**CP-8 Working Group on Review of Resource and Transmission Adequacy**

- ✓ Mr. Philip Moy succeeds Ms. Lucyna Khazanovich as a member, both of PSEG LI.
- ✓ Ms. Laura Popa will serve as an alternate for the New York Independent System Operator.
- ✓ Mr. Michael Welch will serve as an alternate for the New York Independent System Operator.
- ✓ Mr. Ben O'Rourke will serve as an alternate for the New York Independent System Operator.





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- ✓ Ms. Sadhana Shrestha will serve as an alternate for the New York Independent System Operator.

**SP-7 Working Group on Protection System Misoperation Review**

- ✓ Mr. Louis-David Côté succeeds Mr. Jean-Francois Marquis as an alternate, both from Hydro-Quebec TransEnergie.
- ✓ Mr. Yujie Lu will serve as a member for National Grid USA.
- ✓ Mr. Alan Freeman-Scott will serve as a member for IRONHOUSE, Inc.

**SP-9 (Ad Hoc) Working Group on Telecommunication Circuits used for Teleprotection and Remedial Action Schemes**

- ✓ Mr. Nghia Lac will serve as a member for National Grid USA.
- ✓ Mr. Gideon Boakye-Ansah as an alternate for National Grid USA.
- ✓ Mr. Chuck Victor of Nova Scotia Power, Inc. succeeds Mr. David Lambert of Hydro-Québec TransEnergie as the Chair.

**SS-37 Working Group on Base Case Development**

- ✓ Ms. Pramila Nirbhavane succeeds Mr. Keith Burrell as an alternate, both of the New York Independent System Operator.

**SS-38 Working Group on Inter-Area Dynamic Analysis**

- ✓ Mr. Chuanjiang Zhu will serve as an alternate for National Grid USA.
- ✓ Mr. Michael Roszkowski will serve as an alternate for Consolidate Edison Company of New York.
- ✓ Mr. Kai Ni will serve as the member, replacing Mr. Zequi Li, both from the New York Independent System Operator.
- ✓ Mr. Kofi Nimako will serve as an alternate member for the New York Independent System Operator.

**IST-2 Telecommunications Working Group**

- ✓ Mr. Neal Hickey will no longer serve as a member for the New Brunswick Power Corporation.

**IST-4 Working Group on Cyber Security Roster**

Approved as provided in the Agenda package.

**2018 NPCC Major project List**

Approved as provided in the Agenda package.

**2018 NPCC BPS List**

Approved as provided in the Agenda package.

**Directory No. 1 Implementation Plan**

Approved as provided in the Agenda package.

**2017 CCEP Implementation Plan**

Approved as provided in the Agenda package.



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**Reliability Coordinating Committee Actions**

**Retirement of NPCC Document A-01 - Criteria for Review and Approval of Documents**

Mr. Dunbar reported that the NPCC Directory - *Development and Revision Manual* included in the Agenda package was revised to incorporate the relevant sections of NPCC Document A-01 - *Criteria for Review and Approval Documents* in advance of formally proposing the retirement of Document A-01. As a result, the Task Force on Coordination of Planning (which has jurisdiction over Document A-01) recommended to the RCC that Document A-01 be retired. The RCC agreed to recommend that the NPCC Full Membership approve the retirement of Document A-01.

**The RCC then unanimously approved the proposal to retire the NPCC Document A-01 which will be presented to the NPCC Full Membership for final ballot approval (written proxy in favor).**

**Scope for developing Guidelines for Incorporating Distributed Energy Resources into Planning Studies**

Mr. Conroy stated that the focus of NPCC's 2018 Corporate Goal III-3 (Develop and Maintain Accurate DER Models) is to "promote and assist in the development of guidelines and practices to address Distributed Energy Resources (DERs) in planning models." A survey was conducted earlier this year to identify the current methods used throughout the NPCC Area for incorporation of installed DERs in planning practices; the survey results were reported to the RCC at its May 30, 2018 meeting. The Scope for developing Guidelines *for Incorporating Distributed Energy Resources into Planning Studies* (included in the Agenda package) was developed for incorporating DERs into planning studies, based on the information obtained from the survey.

He explained the Guidelines will be developed in two steps:

- ✓ What impacts of DER need to be considered in planning studies; and,
- ✓ How to model DERs to account for those impacts.

For each proposed guideline, the following will be considered:

- ✓ What issues require a guideline?
- ✓ Investigate the current literature and industry practices on those issues
- ✓ Create a proposed guideline to address those issues
- ✓ Can the guideline can be implemented today, or are new practices or technologies needed?

A report regarding the development of guidelines for incorporating DERs into planning studies with input from the other NPCC Task Forces, is planned to be delivered to the RCC at its December 4, 2018 meeting.



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In response to a question by Mr. Clayton, Mr. Conroy explained how information provided by the recently issued NPCC DER BES Impact Reporting Form would be considered in the development of the Guidelines.

Mr. Evans-Mongeon mentioned that this represents an opportunity to build upon other industry and NERC DER initiatives during the development of the Guidelines.

In response to a question by Mr. Clayton, Mr. Evans-Mongeon also outlined on-going joint NERC Operating and Planning Committee activities related to DERs.

Mr. Bodkin mentioned that the California ISO's Standard Authorization Request for proposed NERC Reliability Standards for inverter-based technologies should also be considered. Mr. Shriver also mentioned development of an IEEE standard for transmission connected inverters.

Mr. Kowalski advocated that NPCC members become engaged in the NERC System Planning Impacts from Distributed Energy Resources (SPIDER) initiative to have an opportunity to influence the related DER efforts on the national level.

**The RCC then unanimously approved the Scope for developing Guidelines for Incorporating Distributed Energy Resources into Planning Studies provided in the Agenda package (written proxy in favor).**

**NPCC Directory No. 8 – System Restoration**

Mr. Doyle stated that the NPCC Task Force on Coordination of Operation (TFCO) and its CO-11 Restoration Working Group, in coordination with the Task Force on System Protection conducted a focused review of the proposed NPCC Directory No. 8 – System Restoration to better align the criteria with PRC-005-6 - Protection System, Automatic Reclosing, and Sudden Pressure Relaying Maintenance.

The revisions to NPCC Directory No. 8 (provided in the Agenda package) promote improved efficiency in the maintenance programs for those facilities that are subject to the requirements of PRC-005 and Directory No. 8.

The Directory was posted to the NPCC Open Process for a forty-five day comment period and the TFCO, in coordination with the TFSP, have responded to all comments. The TFCO recommended that the RCC submit the NPCC Regional Reliability Directory No. 8 – System Restoration provided in the Agenda package to the NPCC Full Membership for final approval by ballot.

**The RCC then unanimously recommended balloting the revised NPCC Regional Reliability Directory No. 8 - System Restoration provided in the Agenda package for Full Member approval (written proxy in favor).**



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**Items for Discussion**

**Operations Roundtable**

Mr. Evans-Mongeon led a RCC discussion of system operations during the 2018 summer period, and preparations for the 2018-19 winter period, including lessons learned from the winter of 2017 – 2018.

**Review of A-10 Methodology**

Mr. Adam provided an overview of the objectives of the existing A-10 methodology review and the status to date; he then introduced Ms. Dawes, Chair CP-11 Working Group, to provide a Phase 2 update.

Ms. Dawes and Mr. Schwarting, Vice Chair, CP-11 Working Group gave a presentation (included in the Agenda package) describing the status of the CP-11 Working Group review in accordance with the Phase 2 Action Plan. The results of the first iteration of testing to assess proposed revisions to the existing A-10 methodology and alternate methodologies were summarized. These proposals were developed consistent with the scope of work in order to enhance consistency of application and reduce resources required to identify the most critical Bulk Power System facilities. She indicated that the testing of proposed methodologies continues with the development of an element by element approach for applicability to Directory No. 1.

Next steps include:

- ✓ Complete testing;
- ✓ Continue work on Directory No. 1 applicability;
- ✓ Select a Preferred Methodology;
- ✓ Recommend applicability of a Preferred Methodology to the individual NPCC Directories; and,
- ✓ Identify Potential Consequences of a Preferred Methodology.

Ms. Dawes said the Phase 2 report is planned to be completed by the end of October; she indicated that the CP-11 Working Group would be available in November for an RCC Webinar in advance of the December 4, RCC meeting, if requested.

The RCC then discussed the results presented and provided feedback to be considered by the CP-11 Working Group in their deliberations, including the definition of a Local Area, criteria for BPS exclusions, and the amount of effort required alternative methodologies testing.

Mr. Evans-Mongeon asked how the information will be provided to those NPCC Full Members that do not have Task Force on Coordination of Planning (TFCP) and/or Task Force on System Studies (TFSS) representation. Ms. Dawes responded that the information is treated confidentially with distribution limited to the TFCP and TFSS via a secure FTP



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site. Mr. Schwarting indicated that the CP-11 Working Group representatives are encouraged to reach out to companies directly, or through their respective Reliability Coordinator to discuss the study results.

Mr. Evans-Mongeon stated he just wanted to make sure those who may be affected by a change in the A-10 methodology are not precluded from a review of the results during the course of the study.

**Strategic Review of NPCC Criteria**

Mr. Dunbar referred to the draft report (included in the Agenda package) of the *Strategic Review of the Need for NPCC Reliability Criteria*, that was developed in response to direction provided by the NPCC Board of Directors. He explained that an initial draft of the report was provided to the appropriate NPCC Task Forces and that Task Force comments have been incorporated.

In accordance with the Task Force on Coordination of Planning (TFCP) approved Action Plan, the report will be submitted to the RCC and RSC for a 30-day comment period ending October 5, 2018; all comments will be considered in the development of a final report to be considered for endorsement by the TFCP at its November 8-9, 2018 meeting and subsequently submitted to the RCC and RSC at their December 2018 meetings.

**Updated results – 2017/2018 Under Frequency Load Shedding (UFLS) Assessment**

Mr. Latulipe presented 2017/2018 NPCC UFLS Assessment updates for the base line simulations as well as the available results of the sensitivity simulations, following up on the preliminary results presented at the May 30, 2018 RCC meeting.

His presentation (included in the Agenda package) summarized the status of the three scenarios being investigated in the assessment:

- ✓ Baseline (using conventional static load (algebraic) load model);
- ✓ Sensitivity to Dynamic Load Model (using the Composite load (CMLD) model in PSSE);  
and,
- ✓ Sensitivity to high Distributed Generation.

He explained that the next steps include: 1) finishing simulations utilizing the PSSE CMLD Model and 2) running sensitivity simulations with dynamic models for Distributed Generation. Utilizing the 2017 *NERC Reliability Guideline for Distributed Energy Resource Modeling*.

The SS-38 Working Group on Inter-Area Dynamic Analysis plans to submit its final draft report for RCC review and approval at the December 4, 2018 RCC meeting.



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**NPCC Goal Deliverables**

*Goal III-1 - Composite Misoperations Metric*

Mr. Sahiholamal reported that the Task Force on System Protection endorsed the proposed Entity Misoperation Composite Metric Score (Entity MCM Score) included in the Agenda package at its July 17-19, 2018 meeting. The metric developed through the SP-7 Working Group fosters high reliability by encouraging the industry to improve its score/performance over time by addressing “Unknown” protection system misoperations and other causes.

*Goal III-2 - Trend Analysis of 2015-2016 Events*

Mr. Rufrano presented an assessment which illustrated the comparison and trend analysis of the 2017 NPCC and ERO-wide events, utilizing NERC’s Event Severity Risk Index (eSRI) vs. NPCC’s eSRI category ranges. The results of this analysis were combined with those of the 2015 and 2016 data that was presented to the RCC at its May 30, 2018 meeting.

He explained that the data analyzed was submitted through the ERO Event Analysis Program, which is used to gauge the relative impact of the events trending year-to-year for the subject period for NPCC, the other regions and NERC in aggregate.

*Goal IV-1 – Preliminary Results (Accelerated Retirements)*

The focus of NPCC Corporate Goal IV-1, *Accelerated Retirement of Conventional NPCC Resources*, is to “assess the risks to resource adequacy due to accelerated retirement of conventional NPCC resources replaced with distributed energy resources on the system over the next ten years.”

Based on the scope presented to the RCC at its February 28, 2018 meeting, Mr. Lombardi presented the preliminary results (included in the Agenda package) of the conventional generation retirement, generation additions and demand level for the 2028 assessment year, based on the scope of work presented to the RCC at its February 28, 2018 meeting, The 2018 NERC Long-Term Reliability Assessment data and the guidance of the NPCC CP-8 Working Group formed the basis of the assumptions used in the preliminary results.

The RCC discussed the preliminary results and provided comments. Mr. Lombardi indicated that the completed evaluation results are planned to be reported at the December 4, 2018 RCC meeting.

*Goal IV-2 – Preliminary Results – (Gas Disruption)*

Mr. Fedora presented preliminary results of the assessment (included in the Agenda package) to confirm NERC’s screening analysis of a generation cluster within NPCC that may create reliability risks under significant loss of natural gas infrastructure and make recommendations on mitigation if any reliability issues are identified.





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He explained that a representative three-day electric summer 2018 peak load period was modeled assuming a corresponding residential, commercial, and industrial gas demand and generator gas demand forecast. Following a gas disruption, it was assumed that deliveries to gas-fired generation would continue until a pressure threshold limitation occurred; replacement generation would be needed for the loss of gas-only units. Dual fuel (gas-oil) units were assumed to be able to fuel-switch. The completed assessment results are expected to be reported at the December 4, 2018 RCC meeting.

*Goal IV -3 Preliminary Results (Wind/Solar Load Correlation)*

Mr. Klaube presented the preliminary results of the wind & behind-the-meter (BTM) solar peak load correlation assessment on wind and BTM solar resources (included in the Agenda package) performed by NPCC staff. He explained NPCC staff coordinated data gathering and validation efforts with the CP-8 Working Group and the CO-12 Working Groups. Completed study results are planned to be reported at the December 4, 2018 RCC meeting.

**NERC Agenda Items**

*Joint Session: Planning, Operating & Critical Infrastructure Protection Committee June 11, 2018 Meeting*

Mr. Oks reviewed the following items from the Draft June 11, 2018 Joint Session included in the Agenda package:

- ✓ EPRI Electromagnetic Pulse (EMP) Research Project;
- ✓ Western Interconnection Gas – Electric Interface Study;
- ✓ Electricity Information Sharing and Analysis Center (E-ISAC) Update;
- ✓ Standards Efficiency Review Update;
- ✓ Inverter-based Resource Performance Task Force Update;
- ✓ Methods for Establishing IROLs Task Force Update; and,
- ✓ NERC organizational changes.

*Operating Committee (OC) Meeting*

Mr. Rufrano highlighted the following items from the June 11-12, 2018 OC Agenda included in the Agenda package:

- ✓ Event Analysis Subcommittee Scope Document - Approval
- ✓ Charter Revisions supporting a new Communications framework for approved or revised Reliability Guidelines - Approval
- ✓ Frequency response Annual Analysis - Informational
- ✓ Methods for Establishing IROL Task Force (MEITF)
  - MEITF Reliability Guideline – Approval
  - MEITF IROL Framework Assessment – Approval
- ✓ Inverter-based Resources Performance Task Force (IRPTF)
  - IRPTF and NERC Alert update
  - IRPTF Reliability Guideline - Approval





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Planning Committee (PC) Meeting

Mr. Fedora highlighted the following items from the Draft June 11-12, 2018 Planning Committee Agenda included in the Agenda package:

- ✓ Reliability Guidelines - Approval:
  - Methods for Establishing IROLs
  - BPS-Connected Inverter-based Resource Performance
  - Power Plant Model Verification for Inverter-Based Resources
- ✓ IROL Framework Assessment Report – Approval
- ✓ Discussion Topics– Informational
  - Accelerated Generation Retirements Special Reliability Assessment;
  - 2018 Long-Term Reliability Assessment Update and Discussion of Draft Key Findings;
  - NERC System Planning Impacts from Distributed Energy Resources (SPIDER) Scope Discussion and Subcommittee Establishment; and,
  - Member Roundtable:
    - FERC Reliability Technical Conference
    - Status of Underfrequency Loadshedding assessments
    - Sharing of recent seasonal operational experience

Mr. Henderson recommended RCC members consider participating in the NERC System Planning Impacts from Distributed Energy Resources (SPIDER) initiative; Mr. Evans-Mongeon stated that a call for membership would be issued following the June PC meeting.

Critical Infrastructure Protection Committee (CIPC)

Mr. Hogue noted the following items from the June 11-12, 2018 CIPC Agenda included in the Agenda package:

- ✓ CIPC Charter – Approval;
- ✓ NERC Supply Chain Risk Assessment Report;
- ✓ National Laboratories Update;
- ✓ EPRI - Integrated Grid Security and Risk Management Update:
  - Cloud Security
  - Penetration Testing Methodologies for Operational Technology Networks
  - Supply Chain Security Research
- ✓ Compliance Input Working Group - Cloud Computing Pilot Plan.

With no other matters to consider, the RCC meeting was adjourned.

**Next RCC Meeting Date**

Tuesday, December 4, 2018

**Location**

The Westin Prince Hotel  
Toronto, Ontario

**Distribution of Approved Minutes**

NPCC Full & General Member Representatives and Alternates

September 5, 2018



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**September 5, 2018**

Members, NPCC Board of Directors  
Members, NPCC Reliability Coordinating Committee  
Members, NPCC Public Information Committee  
Members, NPCC Compliance Committee  
Members, NPCC Regional Standards Committee  
Members, NPCC Task Force on Coordination of Operation  
Members, NPCC Task Force on Coordination of Planning  
Members, NPCC Task Force on Infrastructure Security and Technology  
Members, NPCC Task Force on System Protection  
Members, NPCC Task Force on System Studies  
NPCC Officers  
NPCC Staff  
Ruta Skucas, Esq.  
and  
Federal Energy Regulatory Commission – Andy Dodge, David Ortiz, David O’Connor,  
Juan Villar  
La Régie de L’Énergie – Daniel Soulier  
Ontario Energy Board – Veronica Mendes  
United States Department of Energy – David Meyer  
New Brunswick Department of Energy and Mines – David Sallows  
Nova Scotia Utility & Review Board – S. Bruce Outhouse, Q.C.