



NORTHEAST POWER COORDINATING COUNCIL, INC.
1040 AVE. OF THE AMERICAS, NEW YORK, NY 10018 (212) 840-1070 FAX (212) 302-2782

June 1, 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 February 28, 2018 RCC Meeting

Sir / Madam:

Attached is the minutes of the February 28, 2018 meeting of the NPCC Reliability Coordinating Committee, as approved at the May 30, 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
February 28, 2018

Mr. Evans-Mongeon called the meeting of the Reliability Coordinating Committee (RCC), held at the New York Times Square Residence Inn, New York, 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 - Alternate
Central Maine Power Company	David Conroy
Consolidated Edison Company of New York, Inc.	Martin Paszek - Alternate
Eversource Energy	George Wegh
Hydro-One, Inc.	Tom Irvine
Long Island Power Authority	Anie Philip - Alternate (via phone)
National Grid USA	Michael Schiavone
New York Power Authority	(proxy to Randy Crissman)
New York State Electric & Gas Corp.	Ray Kinney
Rochester Gas & Electric Corporation	Will Nichols – Alternate (via phone)
The United Illuminating Company	David Bradt
Vermont Transco, LLC	Hantz Presume

Sector 2 – Reliability Coordinators

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

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

Consolidated Edison Company of New York, Inc.	(proxy to Martin Paszek)
Eversource Energy	Barry Bruun
Hydro Quebec Distribution	Abdelhakin Sennoun - Alternate (via phone)
Long Island Power Authority	(proxy to Anie Philip - via phone)



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

New Brunswick Power Corporation Randy MacDonald – Alternate (via phone)

Sector 4 Generation Owners

Consolidated Edison Company of New York, Inc.	Peter Yost
Dominion Resources Services, Inc. Dynergy, Inc.	Sean Bodkin (via phone) Dan Roethemeyer (via phone)
Long Island Power Authority	Lycyna Khazanovich – Alternate (via phone)
New York Power Authority	Randy Crissman
NextEra Energy Resources	Allen Schriver (via phone)
Ontario Power Generation, Inc.	David Ramkalawan David Kwan - Alternate (proxy to Edward Schwerdt)
Talen Energy Supply, LLC	

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	Jennie Liu
Utility Services, Inc.	Brian Evans-Mongeon

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

Long Island Power Authority	(proxy to Anie Philip – via phone)
New York Power Authority	(proxy to Randy Crissman)

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

New York State Reliability Council, LLC	Roger Clayton
---	---------------

NPCC Staff

Sal Buffamante	Assistant Vice President Audits and Risk Assessment
Gerry Dunbar	Manager of Reliability Criteria Requirements
Phil Fedora	Assistant Vice President, Reliability Services
Damase Hebert	Senior Compliance Attorney
Brian Hogue	Information Systems & Security Management
Andreas Klaube	Engineer, Operations
Quoc Le	Manager, System Planning and Protection
Michael Lombardi	Manager, System Studies
Kristin McKeown	General Council
Maritza Feliciano Marquez (part-time)	Office Manager
Jennifer Mattiello (via phone)	Senior Vice President & COO

February 28, 2018



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

Scott Nied	Director, Mitigation
Andrey Oks	Director of Operations Coordination
Ralph Rufrano	Manager, Events Analysis
Rafael Sahiholamal	Senior Reliability Engineer
Edward Schwerdt	President & CEO
Catherine Varela (part-time)	Office Manager

Guests

Kyle Ardolino (via phone)	Chair, CO-12 Working Group
Scott Brown (part-time - via phone)	New Brunswick Power Corporation
Alessia Dawes (via phone)	Chair, CP-11 Working Group
Kevan DePugh	Chair, Task Force on Coordination of System Studies
Patrick Doyle	Chair, Task Force on Coordination of Operation
Alex Echevarria	Chair, Task Force on System Protection
David Cadregari (via phone)	Chair, Task Force on Infrastructure Security & Technology
Mathieu Labbe (via phone)	Chair, CO-12 Working Group
Dan Schwarting (via phone)	Vice Chair, CP-11 Working Group
Ben Wu	Orange & Rockland Utilities
Wes Yeomans	New York ISO

Mr. Evans-Mongeon recognized the contributions of Ms. Feliciano, who will be retiring from NPCC after 32 years of service; the RCC expressed their appreciation for her efforts over the years in coordinating and organizing the RCC meetings and wished her well in her retirement. Mr. Evans-Mongeon then introduced Ms. Varela to the RCC; she will be taking over Ms. Feliciano's RCC responsibilities moving forward.

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

Mr. Fedora reviewed the NPCC Antitrust Guidelines in the Agenda package, and suggested contacting NPCC Inc.'s Secretary, Ruta Skucas at (202) 530-6428 for further information.



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

President & CEO Report

Mr. Schwerdt provided the following report:

NPCC 2018 Corporate Goals

The ongoing changes within the electricity utility industry and the resultant impacts on how bulk power system reliability is actually assured is driving a number of critical reliability initiatives within NPCC. Consistent with and in support of activities across the entire ERO Enterprise, NPCC in 2018 will be addressing a number of Regionally-specific existing risks to reliability, as well as identifying and assessing several emerging risks that could affect Northeastern North America. Targeted efforts to reduce reliability risks due to protection system misoperations, event severity, and the need for accurate modeling of distributed energy resources are identified within the Board's approved NPCC 2018 Corporate Goals, which are included in the Agenda package. Additionally, plans to assess risks to resource adequacy due to accelerated retirement of traditional generation sources, severe disruptions on the natural gas distribution system, and the correlation between the availability of distributed energy resources with load have been developed.

These planned assessments into emerging risks represent a continuation of NPCC's ongoing commitment to Regional reliability assurance, and these assessments are supported by the establishment of performance-based reliability standards both within the ERO itself and NPCC specifically, and also risk-informed compliance monitoring. Working in concert, this is a measured approach building on a foundation that looks at what is challenging today as well as tomorrow. To strengthen that commitment, initiatives regarding the development of potential approaches to addressing reliability related impacts from distribution level distributed energy resources on the Bulk Electric System will be pursued, and enhanced efforts to reduce the degree of risk from any identified non-compliance trends. Additionally, as the physical and cyber threats to the reliability of the international, interconnected bulk power system are evolving, even as the Bulk Power System (BPS) itself is changing, enhanced NPCC outreach to address those threats is a key objective.

Lastly, the identification of the most critical BPS facilities within Northeastern North America provides a foundation for NPCC's risk-based approach to assuring reliability. During 2018 the CP-11 Working Group will continue to enhance the consistency of application of the current methodology used to identify those critical facilities and to test alternate approaches. Included in the RCC's endorsement for the testing, was a commitment to establish objective criteria to judge the results of that testing. Updates to those efforts are included in the Agenda package.

In parallel with that testing, NPCC will be conducting a high-level comprehensive strategic review of the need for NPCC's Regionally-specific reliability Criteria. The evaluation is intended to identify overarching reliability benefits of imposing more-stringent requirements



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

within major focus areas, including: planning; operations; and system protection. Not a requirement by requirement review, but one conducted from a strategic point of view. The outcome of such a review could then lead to an evaluation of the cost effectiveness/benefit of the application of NPCC Criteria on the most critical Northeastern North America facilities, expected in early 2019. A status report will be provided later at today's meeting.

Bulk Power System Resilience

On September 29, 2017, the Secretary of the U.S. Department of Energy directed the Federal Energy Regulatory Commission (FERC) to consider a proposed rule requiring RTOs and ISOs to establish a tariff mechanism for the purchase of energy from eligible, reliable and resilient resources that, among other characteristics, that, among other characteristics, had a 90-day on-site fuel supply. On January 8, 2018, FERC issued an order terminating the rulemaking it had initiated in response to the DOE directive and initiated a new proceeding on Grid Resilience in RTOs and ISOs. Within that FERC order, the Commission indicated that it understands resilience to mean, "The ability to withstand and reduce the magnitude and/or duration of disruptive events, which includes the capability to anticipate, absorb, adapt to and/or rapidly recover from such an event." The FERC order requests the RTOs and ISOs to comment on the meaning of resilience and to address some 19 questions related to how they assess threats to resilience, highlighting any unique challenges that exist within their respective areas. Responses are due to the Commission by March 9, 2018, with reply comments to the Commission due by April 9th.

Policy input from the NPCC Board submitted to the NERC Board of Trustees (BOT) recommended, in part, that any grid security/resiliency initiatives be technologically neutral and be coordinated with state and/or provincial responsibilities and authorities. During their February meeting, the NERC BOT received a report from the Reliability Issues Steering Committee (RISC) on a framework for discussion of resilience. That framework included the need for: confirmation of a common understanding of resilience; assessment of how the key elements of resilience are addressed within the ERO Enterprise; and identification of additional efforts that need to be undertaken.

NERC Items

There are several changes ongoing within the ERO Enterprise that Mr. Schwerdt highlighted. Included in those are the following: 1) on December 14, 2017 NERC announced that it was beginning a continent-wide search for a new president and chief executive officer; 2) the NERC BOT approved, during its February meeting, the planned dissolution of SPP RE with most of the registered entities going to the MRO; 3) the FRCC Board is considering a possible transition of its registered entities to SERC and the potential dissolution of the FRCC Regional Entity in early Fall; 4) within WECC, there are ongoing considerations



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

regarding changes to the footprint for Peak Reliability, currently the single Reliability Coordinator in the Western Interconnection; and 5) the MRO Board announced yesterday the appointment of an interim President and CEO, as well as the initiation of a search for a permanent President and CEO successor.

Mr. Henderson noted that the strategic review of the NPCC criteria may take a fair amount of careful, thoughtful work, and emphasized the need to allocate sufficient time to address the important issues that need to be addressed. He stated his support for the effort.

Mr. Schwerdt responded that a subcommittee of the NPCC Board develops the corporate goals, and that they are intended to be a “stretch” to achieve. The submitted goals are then reviewed and approved by the full NPCC Board at their first meeting of the year. The approved goals serve to inform the RCC of the important activities related to the changes in the industry and the associated challenges to reliability assurance. The NPCC strategic focus is on maintaining future NPCC reliability. The reorganization of the RCC Work plan around the ERO strategic goals helps to create a “line-of-sight” that demonstrates how the RCC’s Task Force and Working Groups activities support the NPCC Board’s strategic focus. Mr. Schwerdt thanked Mr. Henderson for his commitment to support NPCC’s efforts. He noted that the strategic review of the NPCC criteria was a request from a NPCC member to take a step back to do a strategic review of why we do what we do, does it provide the reliability benefits we think it does, and is it the most cost-effective way to achieve those risk informed reliability benefits.

Mr. Henderson said that reflection and consideration of member comments/input is appreciated. Mr. Evans-Mongeon responded that he looks forward to Mr. Henderson’s involvement.

Mr. Evans-Mongeon added that it should come as no surprise that the steps being taken by the RCC, the NPCC leadership and staff are the right steps to take.

Chair Report

Agenda

Mr. Evans-Mongeon said the following two Agenda Items have been requested to be moved from the Informational to Items for Discussion:

- ✓ Eastern Interconnection Reliability Assessment Group; and,
- ✓ The Compliance Committee Report.

The RCC then approved the Agenda provided in the Agenda package with this change.

Following up on Mr. Schwerdt’s report, Mr. Evans-Mongeon recognized the efforts and involvement of the RCC and the members regarding the information that comes from the



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

ERO and NPCC's efforts to properly align and prioritize the RCC and their Task Forces corresponding work assignments.

NPCC 2018 Corporate Goals

Mr. Evans-Mongeon referred the RCC to the NPCC 2018 Corporate goals provided in the Agenda package.

Approved RCC Scope of Work

Mr. Evans-Mongeon referred to the RCC Scope of Work (included in the Agenda package) that was approved by the NPCC Board at their January 31st meeting.

Approved 2018 -2019 RCC Work Plan

Mr. Evans-Mongeon referred to the 2018 - 2019 RCC Work Plan (included in the Agenda package) that was approved by the NPCC Board at their January 31st meeting.

Consent Agenda

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

December 5, 2017 Meeting Minutes

The Draft-For-Approval Minutes of the December 5, 2017 Reliability Coordinating Committee were approved, with the changes as identified in the Agenda package.

RCC Membership Changes

The following changes to RCC Membership were approved:

Sector 7 - Sub-Regional Reliability Councils, Customers and Other Regional Entities and Interested Entities

- ✓ Mr. Mayer Sasson of New York State Reliability Council succeeds Mr. George Loehr as the alternate.

Task Force Roster Changes

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

Task Force on Coordination of Operation

- ✓ Mr. Nicola Presutti to serve as the alternate member for the Ontario Independent Electricity System Operator.

Task Force on System Studies

- ✓ Mr. Luc Matteau succeeds Mr. Vincent Fihey as member, both of Hydro-Québec TransÉnergie.



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

Task Force on Coordination of Planning

- ✓ Mr. Charif Moukarzel succeeds Mr. Eric Loiselle as the alternate member, both of Hydro Quebec TransEnergie.
- ✓ Mr. Vincent Fihey succeeds Mr. Marc Dusseault as member, both of Hydro-Quebec TransEnergie.
- ✓ Mr. Ajay Garg succeeds Mr. Ibrahim El Nahas as member, both of Hydro One, Inc.
- ✓ Mr. Farooq Qureshy succeeds Mr. Ajay Garg as the alternate member, both of Hydro One, Inc.

Task Force on Infrastructure Security and Technology

- ✓ Mr. James McNierney of the New York ISO succeeds Mr. Greg Goodrich.
- ✓ Mr. Tom O'Neill and Mr. Alain Vallieres to serve as alternate members, both of Hydro-Quebec TransEnergie.

IST-2 Telecommunications Working Group

- ✓ Mr. Eric Drummie succeeds Mr. Troy Wells as a member, both of New Brunswick Power Corporation.

SS-37 Working Group On Base Case Development

- ✓ Mr. Anish Joshi of ISO New England to serve as Vice Chair.
- ✓ Mr. Shounak Abhyankar succeeds Mr. Anish Joshi as a member, both of ISO New England.
- ✓ Mr. Mathieu Pélouquin succeeds Mr. François Bélanger as a member, both of Hydro-Québec TransEnergie.
- ✓ Mr. François Bélanger succeeds Mr. Vito DeLuca as an alternate member, both of Hydro-Québec TransEnergie.

SS-38 Working Group on Inter-Area Dynamic Analysis

- ✓ Mr. Ed Thomas of Consolidated Edison of New York to serve as a member.

CO-1 Working Group on Control Performance

- ✓ Ms. Gabrielle Genaurio succeeds Mr. David Kimmel as the member for PJM.
- ✓ Mr. David Kimmel to serve as the alternate member for PJM.

CO-10 Working Group on System Operational Tools

- ✓ Mr. Nick Zourntos and Mr. Pablo Gutierrez to serve as members, both of the Ontario Independent Electricity System Operator.

CO-12 Working Group on Seasonal Assessment

- ✓ Mr. Mathieu Labbé of TransEnergie Hydro-Quebec becomes Chairperson from Vice Chair, succeeding Mr. Kyle Ardolino of the New York ISO.
- ✓ Mr. Kyle Ardolino of New York ISO becomes the new Vice Chair.
- ✓ Mr. Scot Rolfe succeeds Mr. Kevin Clarke as the alternate member for ISO-New England.
- ✓ Mr. Harris Miller succeeds Mr. Harsh Dinesh as the alternate member for the New York ISO.

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

- ✓ Ms. Sylvie Gicquel succeeds Mr. Jean-Dominic Lacas as the member, both of Hydro-Quebec Distribution.
- ✓ Mr. Abdelhakim Sennoun succeeds Ms. Isabelle Doré as the alternate member, both of Hydro-Quebec Distribution.
- ✓ Mr. Scott Leuthauser of Hydro-Quebec Energy Services (U.S.), Inc. to serve as a member.



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

SPS/RAS, BPS, UVLS, and DCT Exclusions List(s)

Approved as provided in the Agenda package.

Revised TFCP 2018 – 2019 Work Plan

The revised TFCP 2018 – 2019 Work Plan was approved, as provided in the Agenda package.

2017 NPCC Interim Transmission Reviews

The *2017 Maritimes Area, the 2017 New York, and the 2017 Quebec Interim Transmission Reviews* were approved, as provided in the Agenda package.

NPCC representatives to NERC’s Critical Infrastructure Protection Committee

The TFIST recommendations for NPCC representatives on the NERC Critical Infrastructure Protection Committee were approved, as provided in the Agenda package.

Reliability Coordinating Committee Actions

New Brunswick Dedicated Path Logic Type I SPS Modification

Mr. Brown reviewed New Brunswick (NB) Power’s request (provided in the Agenda package) for NPCC approval regarding the modification of its Dedicated Path Logic (DPL) Type I Special Protection System (SPS) No. 176. The NB – New England Interconnection DPL Type I SPS is designed to arm and reject generation if necessary following the loss of either of the two 345 kV tie lines between New Brunswick and New England. NB Power is proposing to modify the SPS so that the 400 MW Madawaska HVDC connection with Quebec can be selected for rejection. When importing on Madawaska, it could be selected to runback from its initial flow to either 175 MW or 0 MW. The modification would allow greater flexibility in selecting generation to reject.

The Task Force on Coordination of Planning (TFCP) reviewed the findings of the Task Force on Coordination of Operation, the Task Force on System Protection and the Task Force on System Studies at its February 6-7, 2018 meeting. The TFCP has reviewed this SPS modification and agrees that the SPS is in conformance with NPCC Regional Reliability Reference Directory No. 1 *Design and Operation of the Bulk Power System* and recommends RCC for approval.

The RCC then approved (written proxy in favor) the New Brunswick Dedicated Path Logic Type I Special Protection System Modification provided in the Agenda package – (Consolidated Edison – Sectors 1, 3, and 4 – abstain).



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

Action Plan – Phase 2 Review of A-10 Methodology

Mr. Adam reported that the Task Force on Coordination of Planning (TFCP) has reviewed the Action Plan for Phase 2 Review of A-10 methodology that was developed by the CP-11 Working Group and revised in accordance with RCC’s request from December 2018.

The Action Plan proposed identifies some key milestones and deliverables in 2018 and 2019 including:

1. Completion of testing and selection of a preferred methodology by the end of 2018, and
2. Development of a revised A-10 methodology by May 2019 for submission to the NPCC Open Process Review for comments beginning in July 2019.

TFCP recommends RCC approval of the proposed Action Plan for Phase 2 Review of the A-10 Methodology included in the Agenda package.

Mr. Schwerdt said his expectation is that the NPCC Board would like to see an “as appropriate” cost effectiveness analysis referenced as an item within the Task 4 NPCC Open Process review. He said the suggestion should be considered as a “friendly amendment.”

Mr. Adam asked if the desired cost effectiveness is related to executing the test or related to bringing the newly identified critical buses in compliance with NPCC requirements? Mr. Evans-Mongeon asked if the expectation is for the entities as a part of responding to the open process that they contribute their view to cost/benefit.

Mr. Schwerdt responded the questions that will need to be answered will depend on the recommended methodology, but a marker should be placed for the need for consideration of the cost effectiveness of a changed methodology as part of the open process review; it is not an assignment to the TFCP or the CP-11 Working Group.

Mr. Crissman said the cost effectiveness could be related to compliance with the standards, as opposed to some other factor. Mr. Schwerdt agreed that that could be one outcome. One of the challenges faced is to create a consistent but more cost-effective approach to the A-10 methodology – and have it demonstrated to the membership. The CP-11 Working Group was charged to develop more cost-effective A-10 methodologies.

Mr. Adam said that the A-10 selection criteria to be discussed later in the meeting is going to address cost effectiveness when executing the test; but previously the RCC said cost effectiveness should not be the most critical criteria. He pointed out that this determination will happen this year, not as part of the NPCC Open Process planned for 2019.

Mr. Schwerdt indicated the need to commit make the results of that cost effectiveness analysis available as part of the NPCC Open Process review, so all NPCC members are informed by it.



**NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018**

Mr. Evans-Mongeon suggested that this consideration applies to A-10 selection criteria discussion rather than as part of the Action plan. Mr. Schwerdt agreed and yielded to the RCC chair and withdrew his friendly amendment.

Mr. Schiavone said it's not only what method is cost effective, but what outcome is cost effective.

Mr. Henderson then offered a friendly amendment to Task 1; he said that the criteria needs to be established first; once the criteria is set, then the means to test the methodology can follow, to make sure the schedule allows time for it.

Ms. Dawes indicated that Base Case development has been on-going and that time has been reflected in the schedule.

Mr. Henderson proposed the following amendment to Task 1: "The CP-11 Working Group (or RCC) to establish a criteria and means for evaluating for testing the proposed methodologies." Mr. Conroy seconded the motion to amend.

The RCC discussed whether the CP-11 Working Group or the RCC sets the criteria.

Mr. Schwerdt suggested that this amendment is mis-placed; this activity is part of the proposed A-10 selection criteria scheduled for discussion later in the meeting. Mr. Evans-Mongeon agreed and asked Mr. Henderson if he wished to withdraw his motion to amend. Mr. Henderson agreed to withdraw the motion; Mr. Conroy agreed.

Mr. Henderson indicated Ms. Dawes answered his scheduling question.

The RCC then unanimously approved (written proxy in favor) the Phase 2 Review of A-10 Methodology Action Plan provided in the Agenda package.

Items for Discussion

2017 - 2018 Winter Operation Roundtable

Mr. Henderson reviewed the presentation provided in the Agenda package regarding the operational challenges faced when New England was gripped by a cold weather stretch for an extended duration between December 25, 2017 and January 8, 2018.

Mr. Yeomans reviewed the presentation provided in the Agenda package describing the impact on New York system operations during the 13-day Northeast cold snap.



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

Mr. Desbiens reviewed system operational challenges experience by Hydro-Quebec during the extreme cold experienced during 2017 holiday season (from December 27, 2017 until January 2, 2018), as provided in the Agenda package.

Mr. Adam reported that the Ontario did not experience adverse reliability impacts during the cold weather period. There were some generator outages attributed to the cold weather (~1,000 MW on January 5, 2018) and minor natural gas curtailments in early January.

NPCC 2018 Summer Reliability Assessment

Mr. Klaube introduced Mr. Labbe, who presented a summary preliminary results NPCC 2018 Summer Reliability Assessment, which was prepared by the NPCC CO-12 Operations Planning Working Group provided in the Agenda package.

Mr. Fedora then summarized the preliminary results of the CP-8 Working Group's NPCC 2018 Summer Multi-Area Probabilistic Reliability Assessment provided in the Agenda package. In response to a question, he explained the procedure and rationale used by the CP-8 Working Group to review the load shape assumption used in the analysis.

The final respective assessments will be submitted for comment by the RCC, and review by the Task Force on Coordination of Operation, and Task Force on Coordination of Planning on April 6th. Following respective Task Force approvals, the results will be presented at the May 2nd NPCC Board of Directors meeting. The 2018 NPCC Summer Reliability Assessment will be posted on the NPCC website following presentation at the Summer Media Event on May 15th.

A-10 Selection Criteria

Mr. Adam reported that the Task Force on Coordination of Planning (TFCP) developed the draft criteria for evaluating existing and alternative A-10 methodologies provided in the agenda package. The criteria are based on the following three principles that are in line with the objectives described in the Scope of Work for the A-10 review:

1. Identify Critical Facilities for the applicability of NPCC Directories. This principle is paramount to having a proper methodology and must be met by the methodology to be accepted.

Criteria 1: The methodology identifies those facilities for which protection system failure to remove a fault will result in the violation of performance criteria outside of the Area in which the facility is located, and for which Directory No. 4 shall be applicable.

Criteria 2: The methodology identifies those facilities for which failure to meet Directory No.1 criteria will result in violation of performance criteria outside of the Area in which the facility is located.

2. Consistency in its applicability across NPCC Areas and outcome is stable and



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

repeatable. This principle must be met by the methodology to be accepted.

Criteria 1: The methodology can be uniformly applied across all NPCC Areas.

Criteria 2: The methodology provides consistent outcome, i.e.:

- the outcome is not sensitive to minor topology changes;
- the outcome is not sensitive to minor changes in power flows;
- the outcome is not sensitive to minor changes in equipment settings;
- the outcome does not depend on the individual performing the analysis.

Criteria 3: The result of the methodology is repeatable.

3. Simplicity in its effectiveness and auditability. This principle may be used to help differentiate among the methodologies that meet principle 1 and principle 2.

Criteria 1: The methodology is cost effective in engineering hour required to implement.

Criteria 2: The result is auditable.

Mr. Adam stated that the first two principles are considered “musts” – the third one could be characterized as “nice to have. He asked for RCC comments on the draft criteria.

Mr. Pace asked if a weighting for the various criteria had been developed. Mr. Adam replied that it hasn't been done, yet. Mr. Pace asked if that is the plan. Mr. Adam responded yes, if that's what the RCC directs. He reiterated that the first two principles are considered “musts”; the third would have a lower weight.

Mr. Pace then suggested that quantitative weighting be developed, in order to help understand their relative importance. When asked if he could suggest a weighting, Mr. Pace responded that it depends on the course of the ensuing discussions. Mr. Adam indicated that he would take the suggestion back to the TFCP.

Mr. Irvine said that cost effectiveness (principle 3) is an important component to be considered - i.e., what do we want to do vs. what we need to do, and how much does it cost.

The RCC discussed the concern about the entity costs associated with implementing the critical facilities criteria requirements vs. the costs associated with the testing used to determine those critical facilities. Mr. Evans-Mongeon stated it is not clear how NPCC can make a representation regarding cost benefit across the region; the entity must work through that determination themselves. Mr. Schwerdt agreed; this will be one of the factors to be considered by the membership during the NPCC Open Process review in 2019. At some point in time, the cost considerations need to be framed, so that the evaluation can be done uniformly. Mr. Crissman agreed that the differentiation of these costs should be made clear.

Mr. Ramkalawan said that although an entity will not have a choice once a list of critical facilities is identified through the selection criteria, the entity should have the flexibility to



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

consider cost sensitivity in order not to provide reliability at any cost, but at an appropriate cost.

Ms. Philip questioned how principle 1 would be applied to Directory No. 1. Mr. Adam responded that what is critical for Directory No. 1 is more difficult to determine than what is critical for Directory No. 4; what ‘critical’ means for Directory No. 1 under changing operation condition is difficult to quantify, especially when that is based on a static list of critical facilities developed offline under specific conditions; critical facilities for Directory No. 4 may not be the same critical facilities for Directory No. 1.

Mr. Adam also stated that one has to be careful to select a methodology; the right thing to do is to develop a methodology that correctly identifies critical facilities from a reliability standpoint, and the decision should not dismiss the methodology purely on cost. If the cost of bringing the critical facilities in compliance with NPCC Criteria is unreasonable, maybe the Criteria need to be reviewed rather than tweaking the methodology.

Mr. Schiavone said he believes the RCC needs to know why something was or was not on the existing A-10 list and have that discussion before the end of the year before the RCC can endorse a methodology.

Mr. Schwerdt responded that the respective methodology cost effectiveness that the CP-11 Working Group will be bringing to the RCC is the costs associated with the testing itself. The consideration of the cost effectiveness of the NPCC criteria itself is more toward the next agenda item regarding the strategic review of the need for NPCC criteria, given the changing electric industry and the improvements in the NERC Standards. Is it still the case to hold a smaller set of critical facilities to a higher level of reliability as a cost-effective means to achieve the reliability objective that we have? That’s a more strategic question that will be addressed in 2019.

Mr. Schiavone said that if the list grows significantly, but doesn’t show a corresponding increase in reliability, the RCC will need to understand the impacts and associated costs and benefits to reliability before recommending a methodology in December. Mr. Schwerdt responded that the RCC action in December doesn’t change the methodology, it depends on the membership votes after consideration in the NPCC Open Process review in 2019. It’s not a question of “here’s how much money I have, how much reliability does that buy?” – that has never been an objective of NPCC. It’s “are we doing the smartest thing to achieve our reliability objectives?”

With respect to principle 1, criteria 1 & 2, Mr. Schwerdt suggested changing “performance criteria outside of the Area” to “performance criteria outside of the Local Area.” Mr. Adam responded that the designation “Area” was on purpose, and reflects the discussions held at



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

the TFCP reflecting acceptability as long as the impacts don't affect (or propagate to) neighboring Areas. He noted that the applicability of "Local Area" has not been consistently applied. Mr. Schwerdt asked would it be equally acceptable if something happened in Long Island that affected Con Edison (both in the same Area)? Mr. Adam responded that the determination would be up to Con Edison. He indicated he would take the suggestion back to the TFCP for consideration.

Mr. Schiavone asked about the definition of "violation of performance criteria" in principle 1, criteria 1&2 - is it a violation of a limit? Ms. Philip also asked whose performance criteria is being referenced? In the interest of time, Mr. Evans-Mongeon said he would ask the CP-11 Working Group to address those questions.

Mr. Evans-Mongeon asked the RCC to review the information, and forward comments to the TFCP for their consideration. Mr. Adam indicated that the TFCP will consider comments received during the development of a final A-10 selection criteria, shared jointly with other the Task Forces in the March-May 2018 timeframe.

Strategic Review of NPCC Reliability Criteria Action Plan

Mr. Dunbar reviewed the Action Plan and Schedule for the Strategic Review of the Need for NPCC Criteria provided in the Agenda package. He reported it was discussed at the February 6-7, 2018 Task Force on Coordination of Planning (TFCP) meeting in conjunction with the development of their revised 2018-2019 Work Plan.

The Action Plan provides a general overview of the approach and schedule required to complete this effort. It includes the development of a Scope of Work that will provide the framework for this effort and assist NPCC Staff in conducting an initial assessment of the need for NPCC reliability criteria by focus areas of Planning, Operations, and System Protection. All Task Forces are asked to assist in this endeavor.

Mr. Crissman asked if this effort would review the NPCC criteria requirements that may be already covered by the NERC Standards; Mr. Dunbar replied that type of review is routinely done by the NPCC Task Forces.

Mr. Evans-Mongeon asked about the timing for the adoption of the Action Plan, noting that this is meeting is the first time many have seen it. Mr. Dunbar explained that the discussion will inform when the Action Plan would be considered finalized.

Mr. Adam added that the TFCP is concerned about the aggressive time frame (two months) outlined in the Action Plan; the TFCP wants to have the Scope of Work in-place before the work starts – included in the Agenda package is a Scope of Work prepared by NPCC staff.



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

Mr. Henderson asked if this effort is coordinated with the NERC Standards efficiency review project. Mr. Dunbar responded that the NERC Standards efficiency review is just getting under way; the NPCC review is specific to reliability requirements that are associated within the NPCC criteria, at a high, strategic level.

Mr. Evans-Mongeon requested that RCC comments be provided by March 15th; Mr. Schwerdt requested the comments be sent to Mr. Dunbar.

NPCC Natural Gas Disruption Risk Assessment

Mr. Fedora summarized the results of the assessment provided in the agenda package that estimated the loss of load expectation and expected use of Emergency Operating Procedures for NPCC Areas (and neighboring Regions) due to unavailable gas-fired generation following reduced natural gas pipeline disruption to the northeast Region for a sustained, consecutive period using a multi-area probabilistic reliability approach. The assessment considered the years 2017, 2019 and 2021.

The assessment illustrated the correlation between the magnitude and duration of the assumed gas disruption:

- ✓ The Summer peak period was more critical than the winter peak period;
- ✓ Greatest risk estimated for a 50% gas disruption over a five week ~~the~~ summer peak period, depending on the Area; and,
- ✓ Future resource in-service date uncertainty influences the results, depending, on the Area.

NPCC Reserve Margin Evaluation

Mr. Fedora summarized the evaluation provided in the Agenda package that performed a sensitivity analysis using a Monte-Carlo simulation approach to illustrate the impact of the uncertainty associated with the load forecast, demand response, and resource unit availability in the estimation of NPCC Area net margins. The evaluation considered the years 2017, 2019 and 2021.

The evaluation illustrated the correlation between selected input variables on NPCC Area Net Margin estimates:

- ✓ Load forecast uncertainty (driven primarily by weather) generally has the greatest effect on the Area net margin estimates;
- ✓ Uncertainty associated with demand response programs, wind and behind-the-meter resources also impacts the Area net margin estimates, depending on the Area; and,
- ✓ Future resource in-service date uncertainty also impacts the reserve margin estimate, depending on the Area.

He compared the deterministic vs. probabilistic approaches used for the NPCC Area net summer margin estimates.



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

February RCC NPCC Goal Deliverables

In the interest of time, Mr. Evans-Mongeon then referred the RCC members to the materials provided in the Agenda package regarding the following February RCC NPCC 2018 Goal deliverables:

- ✓ Goal IV-1 - Accelerated Retirement Risk Assessment;
- ✓ Goal IV-2 - NERC Special Assessment: Potential Bulk Power System Impacts Due to Severe Disruptions on the Natural Gas System Recommendation; and,
- ✓ Goal IV-3 Wind & BTM solar peak load correlation assessment.

Eastern Interconnection Reliability Assessment Group

In the interest of time, Mr. Evans-Mongeon then referred the RCC members to the materials provided in the Agenda package and indicated that the Eastern Interconnection Reliability Assessment Group update would be provided at the next RCC meeting.

Compliance Committee Report

Mr. Buffamante highlighted the non-compliance trends identified in the Agenda package under the Compliance Committee report. He explained that the bulk of the increase in non-compliance issues in 2017 were attributed to:

- ✓ The large increase in the number of Bulk Electric System Cyber Systems that are captured due to the new CIP version 5/6 standards; and,
- ✓ Misunderstanding and misinterpretation of the implementation plans for several O&P standards; PRC-005-6, PRC-024-2, PRC-019-2, MOD-025-2.

He explained that NPCC has held outreach through webinars and workshops to prepare entities for the implementation of these standards; NPCC will be analyzing each non-compliance to identify the root cause, determine the risk to the BPS, and ensure timely and effective mitigation. NPCC will also be analyzing the trends to identify mitigation better practice elements in order to educate registered entities on compliance and reliability. This on-going effort will be highlighted at the 2018 NPCC Spring Compliance and Standards Workshop on May 23-24, 2018.

NERC Agenda Items

Joint Session: Planning, Operating & Critical Infrastructure Protection Committee March Meeting

Mr. Oks reviewed the following items planned for presentation at Joint Session included in the Agenda package:

- ✓ Reliability and Security Guideline Development Update;
- ✓ 2017/2018 Winter Reliability Observations;
- ✓ Solar Photovoltaic Resource Interruption Disturbance Report;
- ✓ 2017 Reliability Assessment Report Recommendations (Long-Term Reliability Assessment and Natural Gas Disruption Report);



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

- ✓ 2018 State of Reliability Report Update;
- ✓ Status of the Standards Efficiency Review; and,
- ✓ Emerging Technology Roundtable.

Mr. Crissman noted that he serves on the Standards Efficiency Review Industry Advisory Team, and suggested RCC members contact him regarding any questions.

Mr. Evans-Mongeon reported that NERC recently announced a Standards Grading Project to start later this year.

Operating Committee (OC) Meeting

Mr. Rufrano then highlighted the following approval items from the March OC Agenda included in the Agenda package:

- ✓ OC Structure and Organization;
- ✓ OC and Subcommittee Work Plans; and
- ✓ Essential Reliability Services Working Group Documents:
 - Forward Looking Measure 6 Technical Brief
 - Forward Looking Measures 1, 2, & 4 Technical Brief
 - Forward Looking Measures 1, 2, & 4 Policy Brief
 - Measure 3 Summary & Recommendation Brief
 - Data Collection Technical Brief
 - Framework Measure 6 – Historical Balancing/Ramping Analysis

Informational and discussion items include:

- ✓ Reliability Coordinator Reliability Plan Reference Document and Reliability Coordinator Assessment Master;
- ✓ Task Force Updates;
- ✓ Lessons Learned – Hurricane Harvey;
- ✓ Reliability Coordinator (RC) Updates:
 - Mountain West
 - California ISO
 - Peak Reliability
- ✓ SPP Regional Entity Update.

Planning Committee (PC) Meeting

Mr. Fedora highlighted the following items for approval on the Draft March Planning Committee Agenda included in the Agenda package:

- ✓ PC Charter; and,
- ✓ Essential Reliability Services Working Group Technical and Policymakers Briefs (described under the OC report).

Discussion topics include:

- ✓ Draft Action Plan for Addressing 2017 Reliability Assessment Report Recommendations;
- ✓ Review of RISC's ERO Reliability Risk Priorities Report; and,
- ✓ Resilience Framework.



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

Mr. Evans-Mongeon reported that following the PC meeting, a Distributed Energy Resources (DER) “Brainstorming” session is planned to identify DER areas that are expected to be important for consideration for future planning efforts; he asked RCC members to contact him regarding any comments or suggestions.

Critical Infrastructure Protection Committee (CIPC)

Mr. Hogue noted the following voting items from the March CIPC Agenda included in the Agenda package:

- ✓ Security Metrics Working Group Charter; and,
- ✓ Compliance Enforcement and Input Working Group - Charter, Deliverables, & Work Schedule.

He then noted the following informational items:

- ✓ Emerging Technology Roundtable;
- ✓ E-ISAC Update:
 - GridEx “Lessons Learned”
- ✓ CIP Modification Drafting Team Update; and,
- ✓ Supply Chain Update – comments to the FERC NOPR are due March 26th

Mr. Crissman described the E-ISAC Embedded Industry Augmentation program initiated in January that fosters enhanced collaboration and information sharing with member utilities by inviting utility staff for multi-day visits to work alongside E-ISAC personnel. He encouraged RCC members to contact him regarding additional information.

Mr. Evans-Mongeon encouraged RCC members to review the Informational Items provided in the Agenda package and contact him regarding the need for any additional follow-up.

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

Next RCC Meeting Date

Wednesday May 30, 2018

Location

The New York Times Square Residence
Inn - New York, NY

Distribution of Approved Minutes

NPCC Full & General Member Representatives and Alternates
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



NORTHEAST POWER COORDINATING COUNCIL
Reliability Coordinating Committee Minutes
February 28, 2018

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 – 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.