



RCC Meeting  
September 6, 2017  
Agenda Item 7.11

**Reliability Assessment Program**  
**(NRAP)**  
**HIGHLIGHT REPORT**  
*Prepared for the*  
*Reliability Coordinating Committee*  
*September 6, 2017*

Distributed to:

Members, Reliability Coordinating Committee  
Members, Compliance Committee  
Members, Regional Standards Committee  
Members, Task Force on System Studies  
Members, Task Force on System Protection  
Members, Task Force on Coordination of Planning  
Members, Task Force on Coordination of Operation  
Members, Task Force on Infrastructure Security and Technology  
Chairmen, Working Groups  
and  
NPCC Staff



**NPCC, Inc.**

## **Reliability Assessment Program**

### **HIGHLIGHT REPORT**

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## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Reliability Standards Program Regional Standards Committee

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
RSC	Regional Standards Committee	<p>The NPCC Regional Standards Committee (RSC), a committee of the NPCC Board, is primarily charged with management and maintenance of the NPCC Regional Standard Processes Manual (approved by FERC Dec. 23, 2014 superseding the NPCC Reliability Standards Development Procedure). The NPCC RSC will consider requests for new or revised standards and be available for advisement to the NPCC Board on the standards. The NPCC RSC will work in coordination with the Regional Standards Process Manager (RSPM) who will be the administrator for the NPCC Regional Standard Processes Manual. In addition, the NPCC RSC will review, comment on, and develop ballot recommendations for the NERC Reliability Standards under review or development. The RSC also provides oversight for the NPCC Regional Reliability Directories which contain NPCC's more stringent regional Criteria and supporting procedures and guidelines. The RSC also conducts and coordinates the NPCC Cost Effectiveness Analysis Procedure (CEAP) for evaluation of the cost effectiveness of NPCC's Regional Standards and Directories. The RSC continues to support NERC staff during Informal Standard Development efforts which are now being performed during the Periodic Review of the standards. The RSC has provided input to the NERC "Enhanced Periodic Review Project" and the NERC version of the CEAP entitled Cost of Risk Reduction Analysis (CRRRA). In addition, the RSC coordinated efforts with the CC to develop a feedback mechanism to route issues identified with standards to the RSC to decide how best to address those issues and improve standards and reliability. The RSC also is sanctioned in the Compliance Guidance Policy process to vet potential approaches to compliance prior to submission to NERC.</p>

**Status/ Comments:**

The RSC is focused on the review of each of the NERC Reliability Standards (as they are developed, revised or reviewed for reaffirmation). The RSC is currently reviewing all the FERC Orders and NOPRs that pertain to Reliability Standards. The RSC develops recommendations for the membership on ballots when posted. The RSC also supports the NERC Functional Model Working Group, NERC Standards Committee, and the NERC Standards Committee Process Subcommittee. The RSC has also revised the NPCC Regional Reliability Standards Development Procedure, renamed the Regional Standard Processes Manual, which was approved by FERC Dec. 23, 2014, and which has been filed with the Provincial Authorities. The RSC continues to participate in the NERC Standard Processes Manual revisions and the Results Based Standards Initiative through its support of the Standards Committee Process Subcommittee, and solicits members for the NERC drafting teams as necessary to ensure NPCC is adequately represented. The RSC is actively supporting the Order 706 Cyber Security Standards development and revision process. The RSC has initiated and is currently overseeing Phase II of the NPCC Directory project which will translate the criteria in the Directories into specific "requirements" on which compliance may be assessed.



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Standards Program

### Regional Standards Committee

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
RSC	Regional Standards Committee	<p>The RSC continues to consider enhancements to the NPCC Website to provide further uniformity and consistency with that of NERC and other Regions.</p> <p>The RSC has developed a draft Work Plan for 2017-2018 and a revision of its Scope of Work; these revisions were approved and are pending final approval RSC approval prior to submission to by the NPCC Board of Directors (BOD) at their February 2017 meeting. The RSC has been active with the development and approval of RSAR's which address the scope of work surrounding various regional standard issues including a regional variance for PRC-006-3 Automatic Underfrequency Load Shedding, and the review of PRC-006-NPCC-1 Automatic Underfrequency Load Shedding with its corresponding continent-wide NERC standard. The regional variance for PRC-006-3 Automatic Underfrequency Load Shedding drafting team has proposed revisions to the Quebec variance which conform with the unique characteristics of the Quebec system. The members of the RSC approved the revised variance, NPCC Full Members and NPCC General Members. The NPCC Board of Directors approved the revised standard for PRC-006-3 Automatic Underfrequency Load Shedding on May 3, 2017. The PRC-006-NPCC-01 Automatic Underfrequency Load Shedding drafting team has conducted eight meetings and is in the process of preparing to post for their first comment period. All requirements have been reviewed by the SDT and subsequent steps include further work on a redline of the regional standard. The proposal to retire PRC-002-NPCC-01 Disturbance Monitoring regional standard was approved by the NPCC BOD on March 23, 2016 and by the NERC Board on May 5, 2016. A petition to retire the regional standard was approved by FERC on August 16, 2016. The RSC is also working with Quebec to determine an approach to address the concerns expressed as a result of the FERC NOPR on TPL-007-1 GMD.</p>



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Standards Program

### Directories, Appendices & Criteria

<u>Item</u>	<u>Name</u>	<u>Appendices</u>	<u>Lead TF</u>	<u>Current Version</u>
DIR-1	<b>Basic Criteria for the Design And Operation of the Bulk Power System</b>	Appendix A – ERO Standards Appendix B – Guidelines and Procedures for NPCC Area Transmission Review Appendix C – Procedure for Testing and Analysis of Extreme Contingencies Appendix D – Guidelines for Area Review of Resource Adequacy Appendix E – Guidelines for Requesting Exclusions to Sections 5.4.1 (B) and 5.5.1 (B) of NPCC Directory No. 1 - Design and Operation of the Bulk Power System Appendix F – Procedure for Operational Planning Coordination Appendix G – Procedure for Inter Reliability Coordinator Area Voltage Control	TFCP TFCP TFCP TFCP TFCP TFCO* TFCO*	September 30, 2015

**Status/ Comments:**

The Task Force on Coordination of Planning (TFCP) and the Task Force on Coordination of Operation completed their collaborative review of Directory No. 1 in 2015. The NPCC Full Member committee approved the most recent version of Directory No. 1 on September 30, 2015.

Currently the RCC is monitoring an Implementation Plan governing protection upgrades in New England.

On September 7, 2016, the RCC approved a TFCP clarification on the criteria governing the Area review of Resource Adequacy as outlined in Criteria Requirement R4 and Appendix D of Directory No. 1. The clarification provides guidance on the calculation of available resources and the treatment of capacity backed purchases as part of these calculations.



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Standards Program

### Directories, Appendices & Criteria

<u>Item</u>	<u>Name</u>	<u>Appendices</u>	<u>Lead TF</u>	<u>Current Version</u>
DIR-2	Emergency Operation	Appendix A – Definition of Terms Appendix B - Guideline and Procedure for Emergency Operation	TFCO TFCO TFCO	June 26, 2009
	<b>Status/ Comments:</b>	The Task Force on Coordination of Operation and its CO-8 Working Group have begun a review of a reformatted draft version of Directory No. 2 to verify consistency of the content with the criteria of the currently active Directory No. 2 document. The CO-8 Working Group effort is anticipated to continue throughout 2017 and will result in a reformatting of the criteria into NERC style requirements and will include a comprehensive review to ensure that the criteria are consistent with recent ERO standard developments.		

<u>Item</u>	<u>Name</u>	<u>Appendices</u>	<u>Lead TF</u>	<u>Current Version</u>
DIR-3	Maintenance Criteria for Bulk Power System Protection	Appendix A – Definition of Terms Appendix B – Guidelines and Procedures for Maintenance of Bulk Power System Protection	TFSP TFSP TFSP	Retired
	<b>Status/ Comments:</b>	The Task Force on System Protection completed a technical comparison of the criteria in Directory No. 3 with PRC-005-2 “ <u>Protection System Maintenance</u> ” and recommended that the criteria in Directory No. 3 be retired.  The RCC approved the TFSP recommendation and on October 15, 2014 the NPCC Full Membership voted to approve the retirement of Directory No. 3, effective April 1, 2015, upon the enforcement date of PRC -005-2 “ <u>Protection System Maintenance</u> ”.		



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Standards Program

### Directories, Appendices & Criteria

<u>Item</u>	<u>Name</u>	<u>Appendices</u>	<u>Lead TF</u>	<u>Current Version</u>
DIR-4	BPS Protection Criteria	<p>Appendix A – Guideline for Bulk Power System Protection</p> <p>Appendix B - Procedure for Reporting to TFSP New and Modified Protection Systems</p>	<p>TFSP</p> <p>TFSP</p>	September 30, 2015
	<b>Status/ Comments:</b>	<p>The Task Force on System Protection (TFSP) incorporated new protection system technology (IEC 61850) into the system protection criteria based on a SP-8 Working Group review.</p> <p>The TFSP also developed five new NPCC specific Glossary terms which support the new IEC 61850 technology as well as other aspects of the criteria. Additionally, enhanced criteria for the monitoring of tele –protection communication channels as recommended by the TFSP during their evaluation of the proposal to retire Directory No. 3 have been incorporated into the Directory No. 4 criteria.</p> <p>In December 2016, the RCC approved a TFSP clarification on the criteria governing the design of breaker failure protection and related trip coil monitoring requirements.</p>		



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Standards Program

### Directories, Appendices & Criteria

<u>Item</u>	<u>Name</u>	<u>Appendices</u>	<u>Lead TF</u>	<u>Current Version</u>
DIR-5	Reserve	Appendix 1 – Monitoring Procedure for Interconnected System Frequency Response Appendix 2 – Monitoring Procedures for Reserve Criteria Appendix 3 – Procedures during Abnormal Operating Conditions Appendix 4 – Guidelines for SAR Allocation Following Radial Source Contingencies Appendix 5 – NPCC Control Performance Reporting Process Appendix 6 – Light Load Conditions Appendix 7 – Participation Request Form - Simultaneous Activation of Reserve and Ace Diversity Interchange	TFCO	October 11, 2012

**Status/ Comments:**

The TFCO and its CO-1 Working Group are reviewing the draft version of Directory No. 5 to verify consistency of the content with the criteria of the currently active Directory No. 5 document. In addition to ongoing WebEx teleconferences, an additional CO-1 meeting, approved by the TFCO, was held at Hydro-Quebec offices on June 27-28 to further discuss the review. The CO-1 Working Group effort is anticipated to continue throughout 2017 and will result in a reformatting of the criteria into NERC style requirements ensuring that the criteria are consistent with recent ERO standard developments.

<u>Item</u>	<u>Name</u>	<u>Appendices</u>	<u>Lead TF</u>	<u>Current Version</u>
DIR-6	Regional Reserve Sharing		TFCO	April 6, 2012

**Status/Comments:**

Directory No. 6 was developed in Phase 2 format and approved by the NPCC Full Membership on April 6, 2012.





# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Standards Program

### Directories, Appendices & Criteria

<u>Item</u>	<u>Name</u>	<u>Appendices</u>	<u>Lead TF</u>	<u>Current Version</u>
DIR-7	Special Protection System	Attachment 1 – Definition of Terms Appendix A – Guidance for Consideration in SPS Design Criteria Appendix B – Procedure for Review of Special Protection Systems	TFSP TFSP TFSP	July 9, 2013
	<b>Status/ Comments:</b>	The RSC continues to monitor the development of PRC -012-2 “ <i>Remedial Action Schemes</i> ” and the revised definition of Remedial Action Scheme (RAS) to assess how these revisions may impact the NPCC criteria for Special Protection Systems in Directory No. 7.		

<u>Item</u>	<u>Name</u>	<u>Appendices</u>	<u>Lead TF</u>	<u>Current Version</u>
DIR-8	System Restoration	Appendix A--Standard Test Procedures for key facilities and associated critical components required for system restoration Appendix B--NERC ERO Reliability Standards Appendix C--Comparison of Test Procedures for Critical Components of Key Facilities of the System Restoration Plan	TFCO	October 22, 2010
	<b>Status/ Comments:</b>	The CO-11 Restoration Working Group has revised the battery testing criteria in Directory No. 8 to eliminate any duplicative requirements with the recently approved PRC -005-2 “ <i>Protection System Maintenance</i> .” Directory No. 8 has been posted to the Open Process for three Member comment periods and the TFCO and the CO-11 Working Group have reviewed and addressed all comments received. The TFCO reviewed and finalized the document, and will seek RCC approval at its September 6, 2017 meeting.		



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Standards Program

### Directories, Appendices & Criteria

<u>Item</u>	<u>Name</u>	<u>Appendices</u>	<u>Lead TF</u>	<u>Current Version</u>
DIR-9	NPCC Verification of Generator Gross and Net Real Power Capability	Appendix A – Definition of Terms Appendix B – Basic Flow Chart for Verification of Generator Gross and Net Real Power Capability	TFCO TFCO/TFCP <sup>1</sup> TFCO/TFCP <sup>1</sup>	December 29, 2011
	<b>Status/ Comments:</b>	The TFCO has completed a technical comparison of the Directory No. 9 criteria with the requirements of MOD-25-2 and concluded that Directory No. 9 can be retired without creating a reliability gap. The TFCO recommendation was posted to the NPCC Open Process and approved by the RCC. On August 3, 2017, the NPCC Full Member Committee voted to retire Directory No.9 and No.10 effective July 1, 2019 to coincide with the completion of the MOD-25-2 Implementation Plan.		

<u>Item</u>	<u>Name</u>	<u>Appendices</u>	<u>Lead TF</u>	<u>Current Version</u>
DIR-10	NPCC Verification of Generator Gross and Net Reactive Power Capability	Appendix A – Definition of Terms Appendix B1 – Basic Flow Chart for Verification of Generator Gross and Net Reactive Power Capability Appendix B2 – Generator Reactive Capability Form	TFCO TFCO/TFCP <sup>1</sup> TFCO/TFCP <sup>1</sup> TFCO/TFCP <sup>1</sup>	December 29, 2011
	<b>Status/ Comments:</b>	The TFCO has completed a technical comparison of the Directory No. 9 criteria with the requirements of MOD-25-2 and concluded that Directory No. 9 can be retired without creating a reliability gap. The TFCO recommendation was posted to the NPCC Open Process and approved by the RCC. On August 3, 2017, the NPCC Full Member Committee voted to retire Directory No.9 and No.10 effective July 1, 2019 to coincide with the completion of the MOD-25-2 Implementation Plan.		



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Standards Program

### Directories, Appendices & Criteria

<u>Item</u>	<u>Name</u>	<u>Appendices</u>	<u>Lead TF</u>	<u>Current Version</u>
DIR-11	Disturbance Monitoring Equipment Criteria		TFSP	October 24, 2016
		Appendix A – Guide to Time Synchronization of Substation Equip.	TFSP	
		Appendix B – Guide for Application of DME	TFSP	
		Appendix C – Guide for Generator Sequence of Events Monitoring	TFSP	

**Status/ Comments:**

On October 24, 2016 the NPCC Full Member Committee voted to approve regional Reliability Directory No. 11 “Disturbance Monitoring Equipment Criteria.”

Also approved was the concurrent retirement of the following NPCC documents:

- A-15 – “Disturbance Monitoring Criteria”
- B-25 – “Guide to Time Synchronization of Substation Equipment”
- B-26 – “Guide for Application Disturbance Monitoring Equipment”
- B-28 – “Guide for Generator Sequence of Events Monitoring”

Directory No. 11 will augment PRC-002-2 “Disturbance Monitoring and Reporting Requirements” and guide the effective application of equipment necessary to capture the data required by the NERC standard.



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Standards Program

### Directories, Appendices & Criteria

<u>Item</u>	<u>Name</u>	<u>Appendices</u>	<u>Lead TF</u>	<u>Current Version</u>
DIR-12	UFLS Load Shedding Program Requirements	Appendix A – Definition of Terms	TFSS TFSS	July 9, 2013
	<b>Status/ Comments:</b>	<p>Directory No. 12 was revised by the Task Force on System Studies (TFSS) to synchronize the UFLS program tolerance bands in Directory No. 12 with those in the UFLS Regional Standard PRC-006-NPCC-1, allowing Regional entities to implement a program that is consistent with the Regional Standard and the SS-38 Working Group design recommendations as part of the ongoing six-year UFLS Implementation Plan.</p> <p>The NPCC Full Membership approved the revised Directory No. 12 on July 9, 2013.</p> <p>Currently a Regional Standard Drafting Team is reviewing PRC-006-NPCC-1 and will also review Directory No. 12 to ensure that all required program performance characteristics in the Directory No. 12 criteria have been incorporated into the Regional Standard. Pending all approvals of the revised Regional Standard Directory No. 12 will be considered for retirement.</p>		

<u>Item</u>	<u>Name</u>	<u>Criteria</u>	<u>Lead TF</u>	<u>Current Version</u>
A-01	Criteria for Review and Approval of Documents		TFCP	April 2017
	<b>Status/ Comments:</b>	<p>In accordance with the NPCC Reliability Assessment Program the TFCP reviewed the A-01 Criteria for <i>Review and Approval of Documents</i>. The TFCP posted the A-01 document to the NPCC Open Process for two postings and has considered all comments received, has evaluated the initial comments, and has reposted the A-01 for a second comment period. The RCC recommended Full NPCC Membership approval at its March 1, 2017 meeting.</p> <p>The NPCC Full Membership approved a revised version of the A-01 document on April 21, 2017.</p>		



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Reliability Standards Program

#### Directories, Appendices & Criteria

<u>Item</u>	<u>Name</u>	<u>Criteria</u>	<u>Lead TF</u>	<u>Current Version</u>
A-10	Classification of Bulk Power System Elements		TFCP	December 1, 2009
	<b>Status/ Comments:</b>	The TFCP and its CP11 Working Group is conducting a review of the A-10 methodology to consider any Member concerns with the existing methodology.  The TFCP has approved a Scope of Work for the A-10 review to be conducted by the CP-11 Working Group. Currently CP-11 is reviewing the A-10 methodology in accordance with an Action Plan presented to the TFCP and approved by the RCC.		



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Standards Program

### Directory Development and Revision Manual

<u>Item</u>	<u>Name</u>	<u>Assignment</u>	<u>Current Version</u>
Directory	Directory Development and Revision Manual	The NPCC Directory Development and Revision Manual is intended to provide guidance regarding the process of establishing a new or revised Directory and will clarify the roles and responsibilities of the NPCC Task Forces responsible for Directory content.	October 3, 2014
	<b>Status/ Comments:</b>	<p>The Directory Development and Revision Manual was revised in 2013 to incorporate changes in the approval process for a Criteria Interpretation (clarification).</p> <p>The RSC approved an additional posting to the NPCC Open Process to consider revisions to the Manual that incorporate cost considerations for new or revised NPCC criteria.</p> <p>The RSC has responded to all comments and on October 3, 2014 the RSC approved the revisions to the “<i>Directory Development and Revision Manual</i>.”</p>	

### NPCC Glossary of Terms

<u>Item</u>	<u>Name</u>	<u>Assignment</u>	<u>Current Version</u>
Glossary	NPCC Glossary of Terms	The NPCC Glossary of Terms has replaced the A7 document and was approved by the RSC on October 26, 2011. The Glossary contains the definitions of all terms found within NPCC Directories, Guidelines, and Procedures. The Glossary is organized in sections containing those terms found in Directories (including Appendices) which support the NPCC criteria and another Section for definitions found within remaining NPCC B and C documents. The Glossary is located in the Directory section of the NPCC website.	October 26, 2011



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Standards Program

### Regional Standards

<u>Item</u>	<u>Name</u>	<u>Assignment</u>	<u>Current Version</u>	
PRC-002-NPCC-01	Disturbance Monitoring	This Standard establishes the technical and reporting requirements for disturbance monitoring equipment. This will lead to improved system reliability by providing the resources to do post event analyses.	<b>Latest Version:</b>	<b>Retired</b>
			<b>Date:</b>	<b>August 16, 2016</b>

**Status/ Comments:**

The proposal to retire PRC-002-NPCC-01 “*Disturbance Monitoring*” regional standard was approved by the NPCC Board on March 23, 2016 and by the NERC Board of Trustees on May 5, 2016. After NERC Board approval, a petition to retire the regional standard is filed with FERC on June 9, 2016 and it was filed with all Canadian Provinces on June 14, 2016.

FERC issued an approval letter for the retirement of Regional Reliability Standard PRC-002-NPCC-01 “*Disturbance Monitoring*” on August 16, 2016.



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Standards Program

### Regional Standards

<u>Item</u>	<u>Name</u>	<u>Assignment</u>	<u>Current Version</u>	
<b>PRC-006 NPCC-1</b>	Under Frequency Load Shedding (UFLS)	This Standard will provide the requirements for implementing an automatic under frequency load shedding program in order to effectively respond to system under frequency events.	<b>Latest Version:</b>	<b>New</b>
			<b>Frequency of Reviews:</b>	<b>3 years</b>
			<b>Next Review Date:</b>	<b>February 2016</b>

**Status/ Comments:**

FERC approved PRC-006-NPCC-1 and its Implementation Plan on February 21, 2013. Based on the FERC approved Implementation Plan the enforcement date for requirements R1 – R7 is January 1, 2016. Requirements R8 – R23 became on enforceable on July 1, 2015.

As a result of developments regarding NERC PRC-006-1/PRC-006-2 “*Automatic Underfrequency Load Shedding*,” PRC-024-1/PRC-024-2 “*Generator Frequency and Voltage Protective Relay Settings*,” Project 2014-01 “*Standards Applicability for Dispersed Generation Resources*,” NPCC Directory No. 12 “*Underfrequency Load Shedding Program Requirements*,” and the 2013 NPCC UFLS Adequacy Assessment, a RSAR for revision of Automatic Underfrequency Load Shedding PRC-006-NPCC-1 was approved by the Regional Standards Committee at its June 23, 2015 meeting. The RCC approved the Regional Standards Committee’s request to assign the TFSS to the project scope outlined in the RSAR and to populate the Drafting Team. On October 7, 2015, the RSC approved the drafting team roster as per the recommendation of the TFSS leadership. The PRC-006-NPCC-01 Automatic UFLS drafting team met eight times and all requirements were reviewed by the SDT. The next step is to finalize a redline on the regional standard and prepare to post for the first comment period.

<u>Item</u>	<u>Name</u>	<u>Assignment</u>	<u>Current Version</u>	
<b>BAL-002- NPCC-01</b>	Regional Reserve Sharing Groups	The Standard provides the measures for implementing Reserve Sharing Groups within NPCC in order to meet their reserve obligations.	<b>Latest Version:</b>	<b>New</b>
			<b>Frequency of Reviews:</b>	<b>3 years</b>
			<b>Next Review Date:</b>	

**Status/ Comments:**

The RSAR has been developed and approved by the RSC. The RCC has assigned the TFCO to act as the drafting team and a request for drafting team members was sent to the NPCC membership. At its meeting of April 14 and 15, 2011, the TFCO established a sub-group of TFCO members and NPCC staff that will work on the Reserve Sharing Groups Standard’s development. The development of Regional Standards has been held in abeyance pending further direction from NERC.





# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Standards Program

### Regional Standards Development Procedure

<u>Item</u>	<u>Name</u>	<u>Assignment</u>	<u>Current Version</u>	
<b>RSPM</b>	Regional Standard Processes Manual	The NPCC Regional Standard Processes Manual describes the procedures, policies, and practices implemented to ensure an “open, fair, and inclusive” process for the transparent initiation, development, implementation and revision of the NPCC Regional Standards necessary for the reliable operation of the Interconnected Bulk Power System in northeastern North America.	<b>Latest Version:</b>	<b>Dec, 23 2014</b>
			<b>Frequency of Reviews:</b>	<b>3 years</b>
			<b>Next Review Date:</b>	<b>Dec. 23, 2017</b>

**Status/ Comments:**

The Regional Standard Processes Manual (RSMP) is posted on the NPCC Website. The RSC is actively reviewing the activities at the NERC level to ensure the regional procedure is consistent with the NERC Standard Processes Manual and achieves a consistency with the NERC common attributes adhered to by the other Regions. The RSPM was posted for a 45-day comment period December. 7, 2011. It was reposted June 6, 2013 through July 22, 2013 for comments. The Regional Standard Processes Manual passed the ballot that was posted November 12, 2013 through January 17, 2014. The document was approved by the NPCC Board of Directors and NERC Board at its August 14, 2014 meeting. The RSPM was approved by FERC on December. 23, 2014.



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

# Compliance Enforcement and Organization Registration and Certification Program

### Compliance Committee

Item	Name	Assignment
CC	NPCC Compliance Committee	<p>The NPCC Compliance Committee is charged with providing independent policy input for the NPCC Compliance Monitoring and Enforcement Program (CMEP). The NPCC CMEP covers compliance assessment and enforcement of NERC Reliability Standards, Regional Reliability Standards and NPCC Reliability Criteria (NPCC Directories). Regarding NERC Reliability Standards and Regional Reliability Standards, the CC provides an oversight role to the NPCC Compliance Staff’s implementation of the CMEP. In this oversight role, the CC will endorse the compliance procedures (CP) used by the NPCC Compliance Staff in the conduct of the CMEP. In addition, the CC is responsible for providing non-monetary sanction recommendations to the RCC for incidents of non-compliance with monitored Reliability Criteria.</p>
	<b>Status/ Comments:</b>	<p>At the June 13-14, 2017 CC meeting, the draft Compliance Procedure CP-09, entitled “<u>Procedure for the Validation of NPCC Registered Entity Bulk Electric System Assets</u>” was approved by the CC. The validation of registered entities assets, both generation and transmission, is one of the activities related to the enhancement of the NPCC Registration Data Base.</p> <p>At the August 16, 2017 CC meeting, a revision to Compliance Procedure CP-06 “<u>Procedure for Guided Self-Certification and Self-Reporting</u>” was approved. The validation of registered entities assets, both generation and transmission, is one of the activities related to the enhancement of the NPCC Registration Data Base.</p>



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Compliance Enforcement and Organization Registration and Certification Program

#### NPCC Compliance Committee

#### Documents

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
CCEP	<b>Criteria Compliance and Enforcement Program</b>	<p>The CC will maintain the “<i>NPCC Criteria Compliance and Enforcement Program Process Document</i>” (CCEP-1) which documents the process for actively monitoring and enforcing compliance on a subset of the Reliability Criteria.</p> <p>The Compliance Committee will provide to the RCC for approval an annual CCEP Implementation Plan which identifies the Reliability Criteria that will be monitored in the upcoming CCEP compliance year and identifies the due dates for the Reliability Criteria Certification forms.</p> <p>The Compliance Committee will provide to the RCC for approval an annual written assessment of the submitted Reliability Criteria Certification forms which will include recommendations as necessary of non-monetary sanctions for incidents of non-compliance.</p> <p><b>Status/ Comments:</b></p> <p>The Assessment Report on the implementation of the 2016 CCEP Certification program that was developed by NPCC Staff was reviewed and approved at the June 13-14, 2017 Compliance Committee meeting. The report will be presented for approval at the September 2017 RCC meeting.</p> <p>At the August 16, 2017 meeting, the Compliance Committee approved a total of three new certification forms associated with Directory 4 “<i>System Protection Criteria</i>”, Directory No. 6 “<i>Reserve Sharing Groups</i>”, and Directory No. 11 “<i>Disturbance Monitoring Equipment Criteria</i>”. The 2018 CCEP program will require NPCC Full Members to certify to these three new forms.</p>



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Training, Education, and Operator Certification Program

#### TASK FORCE ON COORDINATION OF OPERATION

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
CO-2	System Operator Training	<p>This Working Group establishes a program for system operator training relating to NPCC Inc. inter-Area matters, Working Group criteria, terminology, policies, and operating instructions. It prepares and presents material at system operator training sessions, exchanges information on internal system operator training methods. The CO-2 Working Group also evaluates and proposes new techniques and training aids as they become available.</p> <p><b>Status/ Comments:</b></p> <p>The 2017 Spring 79<sup>th</sup> NPCC System Operator Seminar was held at the Sheraton Ottawa Hotel on May 2-4, 2017. The CO-2 Working Group coordinated the Table Top exercises and discussion topics with the CO-8 System Operations Managers Working Group, which included a presentation on the '77 Con Edison Blackout, Loss of Tool Functionality and Renewables effects on Load-Generation Balancing. System Operators had also discussed summaries of recent events that occurred in each of the NPCC Areas and in PJM and attended a tour of the Chaudière Falls No. 2 Powerhouse.</p> <p>The 2017 Fall 80<sup>th</sup> NPCC System Operator Seminar planning meeting will be held September 7-8, 2017 at the ISO-NE Back-up Control Center in Windsor, Connecticut. The 2017 Fall 80<sup>th</sup> NPCC System Operator Seminar will be held in Boston, November 7-9, 2017. The CO-2 Working Group met at NPCC offices in June 2017.</p>



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Reliability Assessment and Performance Analysis Program

#### TASK FORCE ON COORDINATION OF OPERATION

Item	Name	Assignment
CO-1	Control Performance	<p>The Working Group ensures coordination between adjacent control areas in establishing interchange schedules, Working Group reviews time error correction procedures, and monitors the conformance of the Areas with NPCC Control Performance Criteria and Operating Reserve Criteria. At the request of the Task Force on Coordination of Operation (TFCO), it conducts investigations of control performance problems.</p> <p><b>Status/ Comments:</b> The CO-1 Working Group met June 27-28, 2017. The June meeting was approved as an additional face to face meeting by the TFCO to review the reformatted draft version of Directory No. 5 verifying the consistency of the content with the criteria of the currently active Directory No. 5 document. The review, which began in December 2016, is anticipated to continue throughout 2017. In addition to reformatting the criteria into NERC style requirements, the review is also considering the impacts of recent ERO standard developments and revisions on the document.</p> <p>The CO-1 Working Group continues to generate the NERC Disturbance Control Standard Report and conducts periodic monitoring as required. The CO-1 working Group is also reviewing the recent FERC approval of BAL-002-2, "<u>Contingency Reserve for Recovery from a Balancing Contingency Event</u>" and generated a response to TFCO. The CO-1 Working Group continues to closely monitor developments to their relevant standards.</p>

Item	Name	Assignment
CO-7	Operational Planning Working Group	<p>The CO-07 working Group was restructured to serve the Task Force on Coordination of Operation as an Ad Hoc Working Group, populated and charged to address specific issues as required to assist the TFCO. It has been renamed the "Operational Planning Working Group."</p> <p><b>Status/ Comments:</b> The CO-7 Working Group has completed its review of a draft comparison between the criteria in Directories No. 9 and No. 10 with MOD 25-2-2. The TFCO has accepted the CO-7 Working Group's recommendation to retire both directories. At its May 31, 2017 meeting, the RCC recommended the retirement of the Directories upon the full enforcement date of MOD-25-2 be presented to the Full NPCC Membership for final ballot approval.</p>



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Reliability Assessment and Performance Analysis Program TASK FORCE ON COORDINATION OF OPERATION

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
CO-8	System Operations Managers Working Group	<p>Provide a forum for the Managers of the NPCC control centers to identify and discuss security concerns in the operation of the interconnected bulk power supply system, and specific concerns related to the integration of operation between and among the evolving ISOs. The System Operations Managers Working Group will also assist the Task Force on Coordination of Operation in their work on issues related to system security and the operation of the ISOs, and provide advice to the TFCO, as requested.</p> <p><b>Status/ Comments:</b> In response to TFCO’s assignment, the CO-8 Working Group is conducting a triennial periodic review of the Regional Reliability Reference Directory No. 2, “<i>Emergency Operations</i>” document. The CO-8 Working Group is also working on providing comments on the Directory No. 5, “<i>Reserve</i>” to the CO-1 Working Group which was tasked by the TFCO to lead the triennial review effort of the Directory No. 5. The Working Group has begun its review of a version of Directory No. 2, which has been reformatted into the NERC style requirements against the current and developing ERO standards to consider the impacts and develop recommendations for revisions or potential retirement of the NPCC criteria defined in Directory No. 2. The CO-8 Working Group has held several conference calls and discussed it at its May 3-4, 2017 meeting.</p>



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Reliability Assessment and Performance Analysis Program TASK FORCE ON COORDINATION OF OPERATION

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
CO-11	Restoration Working Group	<p>The CO-11 Restoration Working Group facilitates effective and coordinated power system restoration among the NPCC Reliability Coordinator areas, and with adjacent Regions. It annually reviews the restoration plans of the NPCC Reliability Coordinator areas to identify in each individual plan the physical points requiring coordination, the general elements of the restoration plan, the Key Facilities associated with the restoration plan, the communication protocols employed, and the roles and responsibilities of the restoration participants. It identifies opportunities for mutual assistance during restoration and the extent to which each system can rely on its neighbors for assistance. Coordinates Reliability Coordinator restoration exercises, and develops and supervises annual wide-area restoration drills. CO-11 monitors the NERC Reliability Standards EOP-005, “<i>System Restoration from Blackstart Resources</i>”, and EOP-006, “System Restoration Coordination”. The CO-11 Working Group provides comments to the NPCC Task Force on Coordination of Operation and the NPCC Regional Standards Committee as revisions to these Standards are posted for consideration, and weighed for implementation.</p> <p><b>Status/ Comments:</b></p> <p>The NPCC CO-11 Restoration Working Group conducted a review of the Hydro-Quebec and IESO Restoration Plans at its meeting on June 29, 2017. The review included descriptions of the elements of coordination of the restoration plans with neighboring Reliability Coordinators (desired points of interconnection and control parameters). The CO-11 Working Group reviewed the comments received from the Directory No. 8 “<i>System Restoration</i>” posting, and suggested revisions that were accepted by TFCO. Directory No. 8 will be submitted to the RCC for approval at its September 6, 2017 meeting. The RC-to-RC Annual Exercise will be conducted November 1-2, 2017.</p>



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Assessment and Performance Analysis Program

### TASK FORCE ON COORDINATION OF OPERATION

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
CO-12	Seasonal Assessment Working Group	Review the overall reliability of the generation and transmission system in the NPCC Region for the Summer and Winter Seasonal conditions. Working Group CO-12 has been renamed the “Seasonal Assessment Working Group” to avoid confusion with the restructured Working Group CO-07.
	<b>Status/ Comments:</b>	<p>The CO-12 Working Group completed work on the “<i>2017 Summer NPCC Reliability Assessment</i>” and presented the findings to the TFCO. The assessment was approved by the TFCO on April 20, 2017; the results were presented to the NPCC Board on May 3, 2017. The NPCC media teleconference was conducted on May 4, 2017; the final report was posted to the NPCC website, which includes the CP-8 Working Group’s Multi-Area Probabilistic Reliability Assessment on Friday, May 5, 2017.</p> <p>The CO-12 Working Group will begin work for the “<i>2017-18 Winter NPCC Reliability Assessment</i>” in September 2017.</p>





## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Reliability Assessment and Performance Analysis Program

#### TASK FORCE ON COORDINATION OF PLANNING

<b>Item</b>	<b>Name</b>	<b>Assignment</b>
CP- 8	Working Group on Review of Resource and Transmission Adequacy	Review the overall reliability of the NPCC Areas and perform pre-seasonal resource adequacy assessments.
	<b>Status/ Comments:</b>	The Scope and Schedule for the 2018 NPCC Long Range Adequacy Overview is being developed by the CP-8 Working Group to reviewed by the TFCP presented to the RCC at their December 5, 2017 meeting.

<b>Item</b>	<b>Name</b>	<b>Assignment</b>
CP- 2017S	Summer 2017 Multi-Area Probabilistic Reliability Assessment	Assess NPCC Area reliability by estimating the projected use of Area Operating Procedures designed to mitigate resource shortages for the summer (May through September) period.
	<b>Status/ Comments:</b>	The CP-8 Working Group completed work on its “ <i>2017 NPCC Summer Multi-Area Probabilistic Reliability Assessment</i> ” and presented the findings to the TFCP. The assessment was approved by the TFCP on April 21, 2017; the results were presented to the NPCC Board on May 3, 2017. The NPCC media teleconference was conducted on May 4, 2017; the 2017 Summer NPCC Reliability Assessment was posted to the NPCC website, which includes the CP-8 Working Group’s Multi-Area Probabilistic Reliability Assessment on Friday, May 5, 2017.

<b>Item</b>	<b>Name</b>	<b>Assignment</b>
CP- 2017-18W	Winter 2017-2018 Multi-Area Probabilistic Reliability Assessment	Assess NPCC Area reliability by estimating projected use of Area Operating Procedures designed to mitigate resource shortages for the winter (November through March) period.
	<b>Status/ Comments:</b>	The TFCP approved the “ <i>NPCC Winter 2017 – 2018 Multi-Area Probabilistic Reliability Assessment</i> ” at their August 15-16, 2017 meeting for submittal to the RCC approval at their September 5, 2017 meeting.



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Assessment and Performance Analysis Program

### TASK FORCE ON COORDINATION OF PLANNING

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
LRAO	NPCC 2016 Long Range Adequacy Overview (LRAO)	On a consistent basis, evaluate the near-term seasonal and long-range (five year) adequacy of NPCC Areas', reflecting neighboring regional plans proposed to meet their respective resource adequacy criteria through multi-area probabilistic assessments.
	<b>Status/ Comments:</b>	Work has started on the 2017 Long Range Adequacy Overview; the TFCP will be reviewing the report in November for RCC approval in December 2017.

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
CP-11	<i>NPCC Basic Criteria For Design and Operation of the Bulk Power System Review Working Group</i>	This Working Group is charged with the revision of the NPCC Basic Design Criteria Directory No. 1 and the NPCC Glossary of Terms Document A-07. In addition, the Task Force on Coordination of Planning (TFCP) charged the CP-11 Working Group with the development of the A-10 Classification of BPS Elements document.
	<b>Status/ Comments:</b>	<p>The NPCC Task Force on Coordination of Planning (TFCP) has assigned the CP-11 Working Group on Review of NPCC Basic Criteria to perform a comprehensive review of the NPCC A-10 Document <i>Classification of Bulk Power System Elements</i> methodology. The goal of the CP-11 Working Group review is to consider existing and alternative methodologies to identify a set of critical facilities within NPCC and to efficiently apply the outcome of the methodology to the applicable NPCC reliability criteria.</p> <p>On March 3, 2017, the TFCP approved a Scope of Work, which identifies the objective of the review, the CP-11 Working Group structure, background on Member concerns including areas of potential improvement to the existing methodology and specific deliverable tasks.</p> <p>In accordance with their Scope of Work, the CP-11 Working Group has drafted an Action Plan which will govern the review. The Action Plan was submitted to the TFCP on April 28, 2017, and will be further reviewed at the May 31, 2017 RCC meeting.</p>



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Assessment and Performance Analysis Program

### TASK FORCE ON SYSTEM STUDIES

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
SS-38	Inter-Area Dynamic Analysis Working Group	Assigned to analyze dynamic phenomena, which may affect interconnected system reliability, especially in the area of low frequency oscillations.
	<b>Status/ Comments:</b>	The SS-38 Working Group is reviewing the base cases for 2017-2018 NPCC UFLS Assessment. The Working Group members will add the Underfrequency Loadshedding models to the cases when the data becomes available.
<u>Item</u>	<u>Name</u>	<u>Assignment</u>
SS-37	Base Case Development Working Group	On an annual basis, develop a library of solved power flow cases and associated dynamic data.
	<b>Status/ Comments:</b>	<p><b>Power Flow Cases - Ongoing:</b> During June 7-9, 2017, the SS-37 Working Group prepared 12 Power Flow Cases for the 2017 NPCC Library of Cases. The completed NPCC cases were submitted to the Multiregional Modeling Working Group (MMWG) of the Eastern Interconnection Reliability Assessment Group (ERAG) on June 30, 2017. The MMWG has the responsibility to aggregate the power flow cases from the six regions within the Eastern Interconnection into the Eastern Interconnection power flow cases. The Eastern Interconnection power flow cases are scheduled to be completed and published in October 2017.</p> <p><b>Dynamic Models - Ongoing:</b> During August 23-25, 2017, the SS-37 Working Group assembled dynamics data for the 2017 NPCC Library of Cases. The completed dynamic models will be submitted by September 8, 2017 to the MMWG. The MMWG has the responsibility to aggregate the dynamic models from the six regions within the Eastern Interconnection into the Eastern Interconnection dynamics cases. The 2017 Series dynamic cases are scheduled to be completed and published in January 2018.</p>



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Reliability Assessment and Performance Analysis Program

#### TASK FORCE ON SYSTEM PROTECTION

<b>Item</b>	<b>Name</b>	<b>Assignment</b>
SP-7	Working Group on Review of Protection System Misoperations	Review and analyze misoperations of transmission and generation protection systems and special protection systems on the bulk electric system and report on the statistics of misoperations as they occur in the NPCC region including lessons learned and implementation of corrective action plans by registered entities.
	<b>Status/ Comments:</b>	<p>The Task Force on System Protection has reviewed the status of SP-7 Working Group on Protection System Misoperation Review as completed through the 1<sup>st</sup> Quarter (Q1) of 2017. The total number of misoperations for Q1 is 26 compares to the NPCC quarterly average of 37 misoperations. The misoperations reported for this quarter represent the lowest count since 2011. The highest count occurred in Q2 of 2013 at 77.</p> <p>There were seven reported SPS operations in Q1 2017 and no reported misoperation.</p> <p>TFSP also reviewed a comparative analysis of the NPCC and RF/MRO protection system misoperations from 2013 through 2016 as reported in the NERC Misoperation Information Data Analysis System (MIDAS).</p>



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Assessment and Performance Analysis Program

### Eastern Interconnection Reliability Assessment Group

#### Study Committees

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
ERAG	Eastern Interconnection Reliability Assessment Group	<p>The Eastern Interconnection Reliability Assessment Group (ERAG) Management Committee (MC) oversees the Multi-Regional Modeling Group steady state and dynamics base case development, all Eastern Interconnection interregional assessment activities and other interregional matters of interest. Eastern Interconnection assessment forums include: RFC-NPCC, RFC-SERC East and RFC-MRO-SPP-SERC West.</p> <p><b>Status/ Comments:</b></p> <p>The Eastern Interconnection Reliability Assessment Group (ERAG) met on May 17-18. Key items currently being addressed include the following:</p> <ul style="list-style-type: none"> <li>• Peer review process to conduct a review of the Eastern Interconnection Planning Coordinator system assessment methods and assumptions;</li> <li>• NERC request to the Planning Coordinators through ERAG for area short circuit modeling system representation;</li> <li>• Power Flow Database proposal from Powertech that would facilitate development of the MMWG power flow models;</li> <li>• Work Plan Overview;</li> <li>• Refinement to the ERAG Model Building Plan and development of a field trial base case; and,</li> <li>• Status report on MMWG activities</li> </ul> <p>ERAG is planning to conduct two sessions (September 26-27 in Tampa, Florida, and October 11-12 in Charlotte, NC) where the main Eastern Interconnection Planning Coordinators would provide a summary of their assessment methods.</p>



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Assessment and Performance Analysis Program

### Eastern Interconnection Reliability Assessment Group

#### Study Committees

<b>Item</b>	<b>Name</b>	<b>Assignment</b>
<b>ERAG</b>	Eastern Interconnection Reliability Assessment Group	The Eastern Interconnection Reliability Assessment Group (ERAG) oversees the Multi-Regional Modeling Group steady state and dynamics base case development, all Eastern Interconnection interregional assessment activities and other interregional matters of interest.
	<b>Status/ Comments:</b>	<p>The Eastern Interconnection Reliability Assessment Group (ERAG) met on August 30-31, 2017. Key items currently being addressed include the following:</p> <ul style="list-style-type: none"> <li>• Peer review process to conduct a review of the Eastern Interconnection Planning Coordinator system assessment methods and assumptions;</li> <li>• ERAG/Eastern Interconnection Planning Collaborative (EIPC)/MMWG/NERC Workshop Planning</li> <li>• Coordination of ERO-RAPA activities with ERAG;</li> <li>• ERAG Work Plan Update; and,</li> <li>• Refinement to the ERAG Model Building Plan and development of a field trial base case.</li> </ul> <p>ERAG is planning to conduct two sessions (September 26-27, 2017 in Tampa, Florida, and October 11- 12, 2017 in Charlotte, NC) where the main Eastern Interconnection Planning Coordinators would provide a summary of their assessment methods. The NPCC Planning Coordinators are scheduled to provide their assessment methods at the September 26-27 session (more details on the peer reviews indicated below under ERAG Seasonal Working Group). When the Eastern Interconnection Regional Entities became the base case development Designee it was indicated that this responsibility would be temporary until the Planning Coordinators were prepared to assume it. An ERAG/EIPC/MMWG/NERC Workshop will be held to continue discussion and sharing toward that change. NPCC is sharing with ERAG it's experiences in developing an event replication base process and going through field trial development of power flow and dynamics cases to prove the process is viable and to refine the procedure.</p>



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Reliability Assessment and Performance Analysis Program

#### ERAG Seasonal Working Group

<b>Item</b>	<b>Name</b>	<b>Assignment</b>
<b>ERAGWG</b>	ERAG Seasonal Working Group	<p>The ERAG Seasonal Working Group (ERAGWG) conducts appraisals of the Eastern Interconnection. Appraisals are conducted for weather scenarios, including drought and polar vortex type conditions, to determine the impacts on power flows across the Eastern Interconnection.</p> <p><b>Status / Comments:</b></p> <p>Based on industry feedback, ERAG did not assign a 2017 assessment to the ERAG Working Group. The industry feedback included the assertion that over time the gap between the scope of Eastern Interconnection Planning Coordinators assessments and ERAG assessments has narrowed. To minimize duplication between ERAG and the Eastern Interconnection Planning Coordinators, ERAG is conducting a joint Eastern Interconnection Planning Coordinator peer review. The peer reviews are expected to identify:</p> <ul style="list-style-type: none"><li>• Assessment scope and methodologies of the Eastern Interconnection Planning Coordinators; and,</li><li>• Areas of opportunity and involvement for future ERAG assessments</li></ul>



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Reliability Assessment and Performance Analysis Program

#### NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION (NERC)

Item	Name	Assignment
RAS	Reliability Assessment Subcommittee (RAS)	Conduct an annual review of the overall reliability of the existing and planned generation and transmission systems of the eight Regional Reliability Entities for the ten-year horizon. Conduct semiannual seasonal assessments of the overall reliability of the existing generation and transmission systems of the eight Regional Reliability Entities.
	<b>Status/ Comments:</b>	<p>The NERC RAS met on July 11-12, 2017 in Portland, OR; activities included a peer review of the <i>2017 Long-Term Reliability Assessment</i>; status of the NERC “<i>Special Assessment on Single Point of Disruption</i>,” the status of NERC Essential Reliability Services Working Group activities, and review of the Probabilistic Assessment Working Group’s Work Plan.</p> <p>The NERC RAS met again on August 22-23, 2017 at Nova Scotia’s Halifax, NS office; activities included a review of the draft <i>2017 Long-Term Reliability Assessment</i>; status of the NERC “<i>Special Assessment on Single Point of Disruption</i>,” the status of NERC Essential Reliability Services Working Group activities, a status update of the NERC “<i>Winter Reliability Assessment</i>,” and a review of the Probabilistic Assessment Working Group’s activities.</p> <p>The next NERC RAS meeting is scheduled for November 14-16, 2017 at FRCC’s Tampa, FL office.</p>





# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Reliability Assessment and Performance Analysis Program

### NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION (NERC)

<b>Item</b>	<b>Name</b>	<b>Assignment</b>
PAWG	NERC Probabilistic Assessment Working Group	The NERC Probabilistic Assessment Working Group (PAWG) reports to the NERC Reliability Assessment Subcommittee. The primary function of the PAWG is to further advance the work initiated by the Generation & Transmission Reliability Planning Models Task Force and the Probabilistic Assessment Improvement Task Force in the conduct of NERC’s probabilistic assessments.
	<b>Status/ Comments:</b>	Current PAWG activities include development of a White Paper on reliability measures and values that can provide insights for systems with changing resource mix to assess resource adequacy, assumptions for the “ <i>2018 NERC Proba</i> ,” and development of a White Paper that identifies data critical to achieve the objective of a resource adequacy assessment.

<b>Item</b>	<b>Name</b>	<b>Assignment</b>
TADS	Transmission Availability Data System	Serve as the Regional Entity Coordinator (REC) in support of the NERC TADS outage data collection and the analysis of the NPCC Transmission Owners (TO) outage information. As the REC, oversee the use of and the data entry of automatic outage information by the TO in the NERC Internet based data management tool - webTADS.
	<b>Status/ Comments:</b>	<p>The TADS Working Group (TADSWG) met on June 13-15, 2017 at NERC’s office in Washington DC; six key-findings and the analysis done in the 2017 NERC State of Reliability (SOR) report was discussed, including increased involvement from the TADSWG for sections relating to TADS in future iterations of the SOR. As part of this involvement, the possibility of changing the manner in which information is presented was discussed. The potential for additional analysis of TADS data outside of the SOR which would provide informational benefit to individual members of the industry in order to incentivize better reporting was also discussed. NERC requested suggestions for what type of analysis would be beneficial to provide and it was indicated that a more thorough discussion as to what information is available for analysis would be necessary first.</p> <p>A request for obtaining sub-cause code data from the North American Transmission Forum (NATF) was discussed to assist with the further analysis of ICC’s and SCC’s such as Fail AC Circuit Equipment and Failed AC Substation Equipment. There’s a formal process in place for NERC to make these types of requests to the NATF that is being considered. TADSWG has agreed to host an in-person training session on November 27-29, 2017 at the NERC offices in Atlanta, GA. A sub-team has been formed to develop the training materials along with the support from NERC staff.</p>



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Reliability Assessment and Performance Analysis Program

#### NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION (NERC)

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
<b>DADS</b>	Demand Availability Database System	Serve as the Regional Entity Coordinator (REC) in support of the DADS data collection and analysis for NPCC. As the REC, oversee the collection of the data in the NERC Internet based data management tool – web DADS.
	<b>Status/ Comments:</b>	<p>The NERC Demand Response Availability Data System Working Group (DADSWG) held a face to face meeting on April 19-20, 2017 at the NERC’s office, Atlanta, Georgia. The next face-to-face meeting will be on August 23-25, 2017 at the PJM’s office, Pennsylvania.</p> <p>The DADSWG worked on its Scope to develop a process for soliciting and evaluating DADS changes and recommend selected improvements, such as changes to definitions, metrics, Demand Response Programs.</p> <p>The DADSWG worked on its training materials and is planning to have a training webinar session during the 1st quarter of 2018.</p>

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
<b>GADS</b>	Generator Availability Data System	Serve as the Regional Entity Coordinator (REC) in support of the Generator Availability data collection and Data System analysis for NPCC. As the REC, oversee the collection of the data in the NERC Internet based data management tool – web E-GADS.
	<b>Status/ Comments:</b>	<p>The NERC GADS Working Group (GADSWG) held a face to face meeting on March 21-22, 2017 at the NERC’s Atlanta GA office. The next meeting is scheduled for September 19-20, 2017 at the WECC’s office in Salt Lake City, UT. NERC has scheduled three GADS/GADS-Wind training sessions for 2017. NERC has posted the GADS Wind Data Reporting Instructions (DRI) - GADS Wind DRI version 1.2. Currently, GADS does not include wind, solar or other renewable technology generating assets.</p> <p>Wind performance data reporting requirements have been developed and a phased in reporting process will begin in 2017 through 2020. Reporting data requirements for Solar have been initiated with a target goal of beginning data submittal by 2021.</p>



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Reliability Assessment and Performance Analysis Program

#### OTHER

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
IPSAC	Interregional Planning Stakeholder Advisory Committee	The Interregional Planning Stakeholder Advisory Committee (IPSAC) is an open stakeholder group that provides input for the development of the Northeast Coordinated System Plan (NCSP). The NCSP outlines activities conducted jointly by ISO New England, New York ISO, and PJM.
	<b>Status/ Comments:</b>	The IPSAC met on May 19, 2017 via WebEx; the agenda included an update on system needs that could have potential interregional solutions, projects with potential cross border impacts, and next steps.



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Situation Awareness and Infrastructure Security Program

#### TASK FORCE ON COORDINATION OF OPERATION

<b>Item</b>	<b>Name</b>	<b>Assignment</b>
CO-10	Operational Tools Working Group	<p>The Operational Tools Working Group (CO-10) is responsible for taking a lead role in the development of NPCC and NERC operational tools (e.g. electronic tagging, the NERC Interchange Distribution Calculator and electronic scheduling), including hardware, software and integrated systems. The Operational Tools Working Group will define the need for operational tools, evaluate the cost benefits of operational tools, coordinate their implementation within NPCC and coordinate common training in the use of operational tools.</p>
	<b>Status/ Comments:</b>	<p>The CO-10 Working Group continues to review of tool failures and associated lessons learned as generated from the Event Analysis Program. The CO-10 Working Group continues to develop regional insights templates from the review of said lessons learned to further aid NPCC entities in utilizing these valuable lessons. The CO-10 Working Group is in the process of developing the NPCC Critical Operating Tools Failure Analysis survey, which will be distributed to the member entities to begin the process for next year.</p>



## RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

### Situation Awareness and Infrastructure Security Program

#### TASK FORCE ON INFRASTRUCTURE SECURITY AND TECHNOLOGY (TFIST)

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
IST-1	Infrastructure Security and Technology Workshop	Periodic workshops presentations to address timely issues and update member system personnel associated with the provision of on-line computer systems for operation of the power system. <span style="float: right;"><b>Last Workshop:</b> May 2017</span>
	<b>Status/ Comments:</b>	TFIST will present at NPCC's Fall 2017 Standards & Compliance Workshop.

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
IST-2	TFIST Telecommunications Working Group	Provide a forum to identify, discuss and advance the technology of Telecommunications Infrastructure for the reliable operations of the NPCC Bulk Power System. The Telecommunications Working Group (IST-2) will also support TFIST in their work on issues related to Telecommunications
	<b>Status/ Comments:</b>	The RCC accepted the 2016 annual Cross-Border Emergency Telecommunications Report at its December 6, 2016 meeting.



# RELIABILITY ASSESSMENT PROGRAM HIGHLIGHTS

## Administrative Services

### MEMBERS' FORUMS

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
<b>General</b>	NPCC General Meeting	To promote the reliable and efficient operation of the interconnected bulk power systems in Northeastern North America, NPCC invites high level policy makers from Federal, Provincial, and State regulatory and/or Governmental authorities and senior executives within NPCC to identify and discuss emerging issues related to the reliability of the NPCC Region.
	<b>Status/ Comments:</b>	The 2017 NPCC General Meeting will be held on December 6, 2017 in Boston, MA. The Agenda and program is currently under development.

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
<b>Gov/Reg</b>	NPCC Governmental Regulatory Affairs Advisory Group	To provide a forum where industry and governmental and/or regulatory representatives can exchange views and strive to develop consensus policy recommendations on reliability issues specific to the NPCC Region and share actionable information related to regional energy and reliability matters.
	<b>Status/ Comments:</b>	The 2017 NPCC Governmental/Regulatory Affairs Advisory Group meeting will be held in conjunction with the NPCC 2017 General Meeting. The Agenda and program is currently under development.

<u>Item</u>	<u>Name</u>	<u>Assignment</u>
<b>PIC</b>	Public Information Committee	To highlight and summarize NPCC activities and accomplishments and disseminate appropriate information to the media, as well as respond to related requests for information.
	<b>Status/ Comments:</b>	NPCC continues to participate in communications coordination with NERC and the Regions. The NPCC Media Event for the release of the 2017 NPCC Summer Reliability Assessment was held on May 4, 2017.