Minutes of the Meeting
Q3 2021 RSSC: Meeting #54

Meeting date: 10/21/2021
Meeting time: 09:30 a.m.
Meeting location: IESO Hosted WebEx

Chair/Sponsor: Sean Lagan/Darren Matsugu
Scribe: Ejiro Winthorpe

Invitees	Representing	Attendance Status Attended, Regrets, Teleconference
Payam Farahbakhsh	Hydro One	Teleconference - WebEx
Mike Bethuling	Hydro One	Teleconference - WebEx
Amelie Morissette	Evolugen	Teleconference - WebEx
David Kiguel	Independent	Teleconference - WebEx
Des Ngunangwa	Bruce Power	Teleconference - WebEx
Joel Charlebois	AESI	Teleconference - WebEx
Juri Baroskov	Capital Power	Teleconference - WebEx
Laurie Reid	OEB	Teleconference - WebEx
Hassan Vahed Kalanesh	Hydro One	Teleconference - WebEx
Helen Lainis	IESO	Teleconference - WebEx
Rob Antonishen	IESO	Teleconference - WebEx
Steve Cannon	Bruce Power	Teleconference - WebEx
Jacinda Belisle	Evolugen	Teleconference - WebEx
Dhvani Shah	Hydro One	Teleconference - WebEx
Kyle Smith	Northland Power	Teleconference - WebEx

Invitees	Representing	Attendance Status Attended, Regrets, Teleconference
Shahid Khan	Northland Power	Teleconference - WebEx
Paul Malozewski	Hydro One	Teleconference - WebEx
Sheraz Majid	Hydro One	Teleconference - WebEx
Yamilet Vargas Ribot	FPL	Teleconference - WebEx
Chris Moir	OPG	Teleconference - WebEx
Andrew Burmaster	Evolugen	Teleconference - WebEx
Andrew Punkari	Evolugen	Teleconference - WebEx
Catherine Either	OEB	Teleconference - WebEx
Sylvian Moore	Boralex	Teleconference - WebEx
Mike Cooke	OPG	Teleconference - WebEx
Dave Kwan	OPG	Teleconference - WebEx
Constantin Chitescu	OPG	Teleconference - WebEx
Kevin Wozniak	Hydro One	Teleconference - WebEx
Christian Shirabad	Atura	Teleconference - WebEx
Ejiro Winthorpe	IESO	Teleconference - WebEx
Michael Jacobs	Pattern Energy	Teleconference - WebEx
Abbas Munir	Bruce Power	Teleconference - WebEx
Tabasum Bandey	Bruce Power	Teleconference - WebEx

Agenda Item 1: Welcome and Introductions

Sean Lagan kicked off the 54 RSSC meeting at 9:30 am welcoming participants.
Participants briefly introduced themselves. Payam Farahbakhsh and Andrew Punkari moved to adopt the agenda. Anyone who attended by phone rather than logging into the Webex was asked to send an email to the scribe (ejiro.winthorpe@ieso.ca)

Agenda Item 2: Administrative Items

Sean Lagan reviewed the Administrative Items.

The Meeting Agenda for meeting 53 (Q2 2021) was reviewed and adopted as constructed.
The Meeting Minutes of the previous meeting were reviewed. The minutes were accepted as drafted.
The IESO will post all 2021 materials which are being revised to ensure compliance with the Accessibility for Ontarians with Disabilities Act (AODA). They will be posted in the near future.

Sean Lagan provided an update on open action items (posted below)

Action Item Summary

ID	Date	Action	Status	Comments
Q1-2021-02	March 11, 2021	During the Q1 meeting, Rob Antonishen highlighted the NERC Implementation Guidance on CIP-008-6, which he indicated would be of value to present at the Q2 meeting with MP having their CIP Security members present for questions	New	Rob Antonishen has left the IESO and the vacancy hasn't been filled. The item will be included early in 2022 meeting. Item remains open.

ID	Date	Action	Status	Comments
Q1-2021-04	March 11, 2021	Helen Lainis to examine possible enhancements to MM11.1 – 'Applicability Criteria for Compliance with NERC Reliability Standards and NPCC Criteria' and will confirm the next lifecycle review date for the document	New	The proposed revisions were put on hold until the approval of MM11.5. The IESO will aim to include a revised version of MM11.1 when the drafting team has completed their first draft. This work is currently going through the IESO's internal review process. Item is now closed.

PRC-027 Requirement R2 Option 2 update from NPCC

If an entity elects to initially use Option 2 for Requirement R2, they must have established a fault current baseline prior to the effective date of the standard. This baseline is to be used as a point of reference for future fault current studies and is an analysis of the short-circuit model determining the magnitude of currents flowing during an electrical fault. When being performed for any BES Element with Protection System functions, the baseline should document the following:

1. Magnitude of fault current
2. Criteria on where the fault current baseline is established – generator, GSU, or at POI etc.
3. Identify what fault currents are used for verification - single-line-to-ground (SLG), 3 phase

If an initial baseline was not established by the effective date of the standard, the entity may establish a baseline after performing a Protection System Coordination Study (PSCS). A PSCS is variable from entity to entity based on their system protection and controls settings philosophy.

An entity utilizing Option 2 should compare present fault current values to the baseline (utilizing the same criteria in the baseline case) and perform a Protection System Coordination Study when the comparison identifies a 15 percent or greater deviation in fault Current values, all in a time interval not to exceed six-calendar years. This comparison report would be provided as evidence.

Agenda Item 3: DER

Sean Lagan delivered the Distributed Energy Resources ("DER") update.

Two major developments with the DER are the DER Guideline document and the NPCC DER forum. This is a stakeholder engagement with participants from across the region sharing their experiences and some of the lessons learned as they navigate the DER material. DER is electrical generation and energy storage performed by a variety of small distribution system connected devices. NPCC's activities involve the identification of the impacts due to the increased penetration of the DER, optimizing the grid services and reliability. NPCC also coordinates DER related activities across the

NPCC footprint. NPCC works closely with NERC and other MPs in the NERC region to share these experiences, issues and information as well as opportunities with integrating the increasing levels of DER.

NPCC DER Guideline Document This was initiated by the NPCC board of Directors with a goal of providing some regional guidance and information for NPCC members and stakeholders. This is an information document that describes best practices, identifies high level issues and key players within the region e.g. provincial and state regulators. This document serves as a one stop shop for entities that have an impact on DER. The document identifies potential reliability risks to the Bulk power system, recommendations to mitigate them and it identifies opportunities to optimize the operational characteristics of the DER to enhance the reliability and resilience of the Bulk power system.

NPCC DER Forum In addition to the Guideline document, NPCC chairs several DER forums throughout the year, these forums feature industry expertise and DER related concepts. Presenters are from a cross section of industry stakeholders providing themed overviews such as; DER and transmission and DER and offshore wind. The forums are available to the general public as well as the presentation materials. These forums typically have many transferable lessons learned that are of interest to stakeholders. The forum also presents themes that resonate with Ontario such as; geographic challenges, congestion on transmission lines and the need for public policy requirements to help drive transmission investment.

Agenda Item 4: O&P Standards Development

Helen Lainis delivered the O&P Standards Development update.

FERC approved new cold weather reliability standard requirements proposed by NERC on August 24, 2021. The modified standards are; EOP-011-2, IRO-010-4 and TOP-003-5. The new standards will come into effect in the US and Ontario on April 1, 2023.

EOP-011-1:
- Adds two new requirements, Requirement R7 and Requirement R8, related to generator cold weather preparedness, including freeze protection and training.
- Revises two requirement parts, Requirements R1.2.6 and R2.2.9, related to the consideration of the reliability impacts of cold weather conditions in TOP and BA emergency operating plans.
- Revises the currently-effective title of Reliability Standard EOP-011-1 from "Emergency Operations" to "Emergency Preparedness and Operations"
- Modifies the purpose statement to reflect the addition of the generator owner as an applicable entity

IRO-010-4 and TOP-003-5:
- Revises the data requirements for RCs, and BAs and TOPs to include cold weather data developed by the generator owner under Reliability Standard EOP-011-2, Requirement R7.
- Replaces the term "Special Protection System" with "Remedial Action Scheme" (RAS) throughout IRO-010-4 and TOP-003-5 to align with the revised NERC Glossary

definition of RAS

February 2021 Cold Weather Grid Operations: Preliminary Findings and Recommendations

Inquiry Commencement: Cold Weather Week of February 14, 2021

- Unprecedented electric generation outages
- Affected Balancing Authorities (BAs) who declared Energy Emergencies and ordered firm load shed at different points of time within their respective footprints, in total exceeding 23,400MW during severely cold weather to avoid entire system blackouts.
- ERCOT BA: nearly three consecutive days and at its worst point, 20,000MW
- SPP BA: approximately five hours total and at its worst point, 2,700MW

Helen Lainis stated that as a result of all the events that happened in the United States there will be more activities in the future regarding cold weather. Joel Charlebois from AESI mentioned that NERC will be creating a forum for the Gas and Electrical industry to discuss their interdependencies and issues including how to limit load shedding to not load shed gas facilities and how natural gas facilities may be able to supply critical electrical infrastructure.

Tabasum Bandey from Bruce Power wanted to know how the new requirements coming into effect in April 2023 affects Transmitters. Helen Lainis responded that the requirements coming into effect only apply to Generator owners and ISO functions. Dave Kwan from OPG inquired about NERC's petition to OEB to waive the filing requirements in Ontario. Helen Lainis responded that the waiver was for the process to be expedited so the requirements could be in effect in Ontario on April 1, 2023.

Michael Jacobs from Pattern Energy commented that all entities are supposed to be accounting for the effects of precipitation and the accelerating cooling effects. Michael also mentioned that the ERCOT grid is set up with only three connection points external to ERCOT which is part of the reason NERC's focus is on generation. The cold weather requirement addresses more of a Southern problem than a Northern problem. Michael Jacobs inquired if there is a mechanism that highlights the fact that the cold weather requirement is a geographical area affected issue and a blanket approach for these new requirements is not necessary. Helen Lainis responded that Canadian entities have filed comments to NERC stating that this is a geographic issue.

Agenda Item 5: NERC Standards Implementation Roadmap

Scott Berry delivered the NERC Standards Implementation Roadmap

The roadmap is posted online for participants to review. There were no comments from committee.

Agenda Item 6: Lessons Learned and NERC Alerts

Scott Berry delivered the Lessons Learned published by NERC since the last RSSC meeting.

NERC posted the following lessons learned since the last RSSC meeting.

- Insulator Flashovers Due to Combination of Salt Spray Deposits Followed by Light Rainfall Initiating Loss of Load
- Multiple Faults in Rapid Succession Contribute to Relay Misoperations Leading to Loss of Load
- Loss of Monitoring or Control Capability due to a Software Version Mismatch
- Cold Weather Preparations for Extreme Weather Events

Agenda Item 7: MACD Update (Self Certifications/COVID-19 Update)

Monica Adam delivered the MACD Update on Self-Certifications

MACD completed 17 self-certifications and conducted 55 PRC-027-1 spot checks of Market Participants. Most of the O&P self-certifications were completed but MACD is a little behind on the CIP Self-certifications. Market Participants are meeting the standards requirements PRC-005, PRC-004 and FAC-008, no potential non-compliance issues were identified. For FAC-003 a few possible non-compliance issues were identified. Overall MACD was impressed that for the PRC standards, Market Participants are making good progress and keeping the maintenance program of their protection systems up to date.

Dave Kwan from OPG inquired about MACD's 2022 self-certification approach regarding sending out self-certifications for the year at the end of Q1, 2022. Monica Adam responded stating that the approach will be the same however MACD is currently experiencing staffing issues which could impact the timeline.

Agenda Item 8: CIP standards Development Update

Norm Dang delivered the CIP Standards Development Update

Active NERC SDTs

Project 2019-02 BCSI in Cloud SDT changes to CIP-004 and CIP-011 have been approved by NERC Board of Trustees in August

Project 2016-02 CIP Mods SDT failed the ballot of Draft 2 of the V5TAG issues (Virtualization and External Routable Connectivity / Interactive Remote Access) changes to CIP-002 to CIP-013.

Project 2020-04 CIP-012 Mods SDT failed ballot of Draft 1 of proposed changes to CIP-012-1 to address FERC Order 866 – availability of communications links for real-time monitoring/ assessments.

Project 2020-03 SDT Supply Chain Low Impact SDT – is currently in ballot for Draft 1 of proposed changes associated with remote vendor access at Low Impact BES Cyber Systems

Project 2021-03 SDT TOCC CIP-002 – nominations for SDT closed. This SDT will address changes to CIP-002 associated with Transmission Owner Control Centers that perform functions of a Transmission Operator. This SDT will use the SAR approved for the 2016-02 SDT.

New CIP Requirements

CIP-013-1, CIP-005-6 and CIP-010-3 standards to address supply chain requirements came into effect Oct 1, 2020

CIP-008-6 changes to address reporting of attempted Cyber Security Incidents came into effect Jan 1, 2021

CIP-012-1 changes to address encryption of data communications for real-time monitoring and real-time assessment data will come into effect July 1, 2022

Notes: CIP-013-2, CIP-005-7 and CIP-010-4 to add EACMS and PACS to the supply chain requirements have been submitted for FERC approval. Likely effective date is mid-late 2023 (18 month implementation time) CIP-004-7 and CIP-011-3 BCSI in the Cloud changes to be submitted to FERC for approval. Likely effective date is mid-late 2024 (24-month implementation time)

Agenda Item 9: OSRP Update – Workshops, Periodic Testing

Sean Lagan Delivered the OPSRP Update

The 4th quarter system restoration workshop is scheduled for November 22nd. Sean Lagan encouraged RSSC members to register. The dates for the 2022 exercises will be posted shortly. The Q1 and Q2 workshops will be virtual and a hybrid model will be accessed for Q3 and Q4. The Ontario Power Restoration System Plan (OPSRP) annual review has taken place and it is due with baseline 46.1, there are no substantive changes. The update will include references to storage which will bring the OPSRP in line with other market rule changes made during baseline 44 which was after the storage design project was completed. NPCC has held its annual RC to RC restoration exercise on October 20, 2021. The goal of the exercise was to practise restoration scenarios and to discuss good practices when synchronizing with other RC areas.

Agenda Item 10: Market Manual 11.1 Update

Sean Lagan Delivered the Market Manual 11.1 Update

Sean Lagan provided an update on Market Manual 11.1 regarding the purpose of the update, expected changes within the Market Manual and the timeline for revisions. The document will be submitted into the baseline 47.0. Sean Lagan asked RSSC members to provide the feedback in the November review period so IESO staff can manage the process as required.

Dave Kwan from OPG wanted confirmation that after the RSSC completes its review, the document will be put through the baseline process for external stakeholder comments. Sean Lagan confirmed

and asked RSSC members to contact parts of their organization that are impacted by the baseline process so all the changes can be captured in time to meet the baseline deadline.

Agenda Item 11: Terms of Reference: Vote on revisions

Sean Lagan Delivered the Terms of Reference (TOR): Vote on revisions

Sean Lagan provided an update on the TOR, specifically section 5 which addresses the change going from four to three meetings a year. Meetings are scheduled to be at least three times a year and dates are to be determined by the RSSC membership. If there isn't sufficient material for a meeting one meeting can be cancelled by the chair after membership consensus has been given. The TOR states that two consecutive meetings can't be cancelled. Sean Lagan asked the RSSC for comments but there were none. Dave Kwan and Joel Charlebois moved to adopt the updated TOR revisions.

Agenda Item 12: Roundtable Items

Sean Lagan recommended that the Roundtable items should be moved to the next RSSC meeting in 2022

Adjournment

2022 Meeting Schedule was provided. IESO to issue MS Teams invitations.

Meeting 1- April 14, 2022 (Teams)
Meeting 2- August 18, 2022 (Teams)
Meeting 3- December 8, 2022 (Teams?)

The meeting adjourned at 12:29 pm

Action Items at Completion of 2021 RSSC Q3 Meeting

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Q1-2021-02	March 11, 2021	Rob Antonishen	During the Q1 meeting, Rob Antonishen highlighted the NERC Implementation Guidance on CIP-008-6, which he indicated would be of value to present at the Q2 meeting with MP having their CIP Security members present for questions.	Open	Rob Antonishen has left the IESO and the vacancy hasn't been filled. The item will be included early in 2022 meeting.
Q1-2021-04	March 11, 2021	Helen Lainis	Helen Lainis to examine possible enhancements to MM11.1 – 'Applicability Criteria for Compliance with NERC Reliability Standards and NPCC Criteria' and will confirm the next lifecycle review date for the document.	Closed	The proposed revisions were put on hold until the approval of MM11.5. the IESO will aim to include a revised version of MM11.1 in the drafting team has completed theit first draft and is currently going through IESO's internal review process.
Q2-2021-01	June 10, 2021	Sean Lagan	Forward PRC-027 resources to RSSC members.	Closed	NPCC provided communication that included the PRCC 027 standard implementation plan and NERC quarterly podcast on the standard. Sean shared the materials with RSSC members on July 7th .
Q2-2021-02	June 10, 2021	Sean Lagan	Sean Lagan to contact NPCC rep to inquire about their interpretation of compliance with PRC-027 so Market Participants ("MPs") have a clear understanding of their obligations.	Closed	MPs were in agreement with requirement #1 but there was a little uncertainty around Option 2 for Requirement R2. NPCC provided some guidance. See meeting minutes.