

DRAFT Minutes

Reliability and Security Technical Committee

September 13-14, 2022

Hybrid Meeting

A regular meeting of the NERC Reliability and Security Technical Committee (RSTC) was held on September 13-14, 2022, via a hybrid meeting (members in-person at the MRO office, observers via WebEx). The agenda packages and presentations are available on the [RSTC webpage](#).

Chair Ford called the meeting to order at 8:30 a.m. central on Tuesday, September 13, 2022 and thanked everyone for attending. Tina Buzzard, NERC Staff, reviewed the procedures for the meeting, read the Antitrust Compliance Guidelines and Public meeting notice, and confirmed quorum for the RSTC.

Introductions and Chair's Remarks

Chair Ford called welcomed everyone to the meeting and called on Nina Johnston to review the meeting governance guidelines, and referenced the administrative items contained in the advance material package.

Consent Agenda

Upon motion duly made and seconded, the Committee approved the Consent Agenda which consisted of the June 8-9, 2022 minutes and the EAS Membership request as presented to the Committee.

Regular Agenda

Chairs Remarks

Chair Ford acknowledged the first in-person meeting of the RSTC members in over 2 ½ years and thanked everyone for their attendance. Chair Ford also acknowledged the attendance of NERC Trustee Roy Thilly.

Chair Ford noted that the SPCWG is in need of a sponsor due to the retirement of a Committee member, and asked anyone that may have interest to email Mr. Crutchfield.

Chair Ford referenced the subgroup reports contained in the Agenda package and thanked the Sponsors for reports being submitted in the requested format.

Lastly, Chair Ford provided highlights from the August 2022 Member Representatives Committee and Board of Trustees meetings.

Chair Ford called an audible and advised that NERC staff requested the Frequency Response Annual Analysis agenda item be deferred to an Action Without a Meeting in early October. Chair Ford noted NERC staff needs additional time to review and incorporate comments received on the report from the RS and that due to the timing requirement for filing with FERC, the report will be submitted to the RSTC for endorsement via Action Without a Meeting via email electronic ballot in early October.

White Paper: Cybersecurity for Distributed Energy Resources and DER Aggregators (NERC Security Integration and Technology Enablement Subcommittee)

Mr. Brian Burnett, SITES and Mr. Marc Child, Sponsor presented on the white paper noting the white paper provides industry with guidance regarding activities underway to further secure the electricity ecosystem under rapid grid transformation, specifically in the area of cybersecurity efforts for distributed energy resources (DERs) and DER Aggregators. Mr. Burnett stated NERC is working with industry stakeholders to advance cybersecurity controls for DERs as the penetration of these resources continues to grow in many areas across North America. He noted the paper is informational and seeks to help provide clarity and guidance to industry stakeholders in this area and that SITES is seeking RSTC comments on the White Paper. Mr. Ford directed interested reviewers to email Mr. Crutchfield.

Technical Reference Document: Inter-Entity Short Circuit Model

Mr. Bill Crossland presented the Inter-Entity Short Circuit Model Technical Reference document. Mr. Crossland noted that the SPCWG submitted this Technical Reference Document to the RSTC at the June 2022 meeting for review and the RSTC formed a small group to review the technical reference document and submit comments back the SPCWG. He stated the SPCWG reviewed the comments submitted and have addressed them per the summary document that was enclosed in the advance materials package. Upon motion duly made and seconded the Committee approved Technical Reference Document: Inter-Entity Short Circuit Model.

SPCWG Cold Weather Report Recommendation 22

Mr. Crossland presented the SPCWG Cold Weather Report Recommendation 22 stating that earlier this year, the RSTC requested that the SPCWG look at Cold Weather Recommendation 22 and come up with a response. He noted after the review, the SPCWG determined that it is not necessary to revise the Reliability Standard PRC-006-5 to address slowly declining frequency over tens of minutes where generator tripping due to an underfrequency condition is possible. Instead, such conditions where there is an adequate time for manual intervention should be addressed by manually balancing load and generation in a timely manner and that it is recommended to consult Real Time Operating Subcommittee for further guidance. Upon motion duly made and seconded, the Committee approved the SPCWG Cold Weather Report Recommendation 22.

White Paper: NERC Reliability Standards Review

Mr. Shayan Rizvi presented the NERC Reliability Standards Review white paper stating the SPIDERWG evaluated the current body of NERC Reliability Standards and the requirements within those standards for their applicability and effectiveness to remain relevant with increasing levels of DERs. He noted the white paper details the findings of the SPIDERWG review and makes recommendations for actions that should be taken to address identified issues and that the document contains responses to comments by previous RSTC reviewers. After discussion with respect to the action before the Committee and upon motion duly made and seconded the Committee approved the NERC Reliability Standards Review White Paper followed thereafter by RSTC subgroup evaluation of potential Reliability Standard and Guideline modifications to address the issues identified therein.

White Paper: DER Impacts to Under Voltage Load Shedding Program Design

Mr. Rizvi presented on the DER Impacts to Under Voltage Load Shedding Program Design white paper providing an overview of the work completed and the findings by the SPIDERWG. Mr. Rizvi also stated the white paper contains responses to comments from previous RSTC reviewers. Upon motion duly made and seconded, the Committee approved the DER Impacts to Under Voltage Load Shedding Program Design white paper.

Technical Report: Beyond Positive Sequence RMS Simulations for High DER Penetration Conditions

Mr. Rizvi presented on the Beyond Positive Sequence RMS Simulations for High DER Penetration Conditions technical report stating the SPIDERWG studied various limitations of the current set of positive sequence tools to determine what, if any, boundary cases can be identified to switch between a positive sequence tool into a “beyond positive sequence” framework. He provided that simulations were performed on a set of reduced cases rather than the current Interconnection-wide base cases in order to provide a technical baseline for further investigation by those entities that wish to explore this area. He also noted the technical report contains responses to comments by previous RSTC reviewers. Upon motion duly made and seconded, the Committee approved the Beyond Positive Sequence RMS Simulations for High DER Penetration Conditions technical report.

White Paper: Battery Energy Storage and Multiple types of DER Modeling

Mr. Rizvi presented the Battery Energy Storage and Multiple types of DER Modeling white paper highlighting the white paper shares industry experience with DER BESSs and other forms of distributed energy storage modeling to highlight industry best practices, discuss lessons learned from studies performed with DER BESSs, and highlight model application and parameterization within industry software and tools. The white paper also provides potential modeling practices to parameterize differing technology types under the SPIDERWG recommended modeling framework. Mr. Rizvi stated the SPIDERWG is requesting comments on the white paper. Volunteers to review the paper were directed to email Mr. Crutchfield.

NERC Inverter-based Resources Strategy.

Mr. Ryan Quint outlined the ERO Enterprise’s risk mitigation strategy focused on the increasing penetration of inverter-based resources across North America. The strategy was developed to formalize the various activities already underway in multiple areas including risk analysis, interconnection process improvements, development of best practices and educational materials, and regulatory enhancements. He noted the strategy also includes a milestone plan of expected deliverables coming through the RSTC.

Standard Authorization Requests: Analysis and Mitigation of BES Inverter-Based Resource Performance Issues and EOP-004-4 Event Reporting Alignment with Inverter-Based Resource Performance Issues

Ms. Julia Matevosyan presented on the standard authorization request (SAR) noting NERC has highlighted in multiple disturbance reports the need for enhanced identification, analysis, and mitigation of IBR performance issues. She stated IRPS added work plan items that was approved by the RSTC to develop a SAR focused on mitigating this ongoing risk to bulk power system reliability. The SAR proposed a new standard focused specifically on identifying, analyzing, mitigating, and reporting IBR performance issues by IBR asset owners. The SAR also proposed that the drafting team will need flexibility in developing an appropriate solution and thus also includes revisions to existing standards (e.g., PRC-004) and changes to NERC Glossary Terms, if needed. Ms. Matevosyan stated the IRPS was seeking RSTC reviewers for the SAR with the expectation that the final draft SAR will be brought before the Committee at its December 2022 meeting. Volunteers to review the SAR were directed to email Mr. Crutchfield.

Design Basis for a Natural Gas Study

Mr. Mike Knowland presented on the Design Basis for a Natural Gas Study providing the purpose of the document is to guide the performance of a study of the interface of the electric and natural gas systems. He stated the recommendations are not intended to require any analyses to be performed, nor are they

intended to provide market solutions, but rather to improve upon the methods and approach in performing that analysis. He concluded that the RSTC members provided comment on the document in June and the document was updated to reflect the comments received. Upon motion duly made and seconded, the Committee approved the Design Basis for a Natural Gas Study.

Reliability Guidelines and Security Guidelines Triennial Review

Ms. Candice Castaneda presented an update on the activities completed for the triennial review of Reliability Guidelines (RG) and Security Guidelines (SG) as last discussed at the December 2021 RSTC meeting. The update also included a review of the development timeline, the Effectiveness Surveys linked to each RG/SG on the RSTC guideline web page, and work completed on Tranche 1.

TOCC Field Test Update

Ms. Megan Sauter presented an update on the implantation of the TOCC field test providing background history on the TOCC field test.

National Labs Update

Mr. Sam Chanoski presented a status update on the Idaho National Laboratory energy cybersecurity programs of interest to the RSTC to include Cyber-Informed Engineering (CIE), Cybersecurity for Operational Technology Environments (CyOTE™), Cyber Testing for Resilient Industrial Control Systems (CyTRICS), and Operational Technology (OT) Defender Fellowship.

Standing Committee Coordination Group (SCCG) Update

Mr. Rich Hydzik provided the quarterly report on the SCCG activities.

White Paper: 6 GHz Communication Network Extent of Condition

Ms. Jennifer Flandermeyer presented the 6 GHz Communication Network Extent of Condition white paper stating the whitepaper details conditions related to this deliverable and identifies reliability risks associated with 6 GHz communication interference. Upon motion duly made and seconded, the Committee approved the white paper.

Chair's Closing Remarks and Adjournment

Chair Ford called on Trustee Thilly, Mr. Ortiz, and Mr. Lauby to provide any closing comments. Mr. Ford then reflected on the last time the Committee met in person was March 2020 right before the pandemic hit and at that meeting the Operating, Planning, and Critical Infrastructure Protection Committees transitioned into the RSTC. He stated that even though since March 2020 the meetings were effectively RSTC meetings, it still had a feel of three committees just all in one room, but today Chair Ford stated was the first meeting where he felt it was truly the RSTC crossing boundaries, bringing in cyber in our thinking and our work as we were tasked to do, developing a risk framework to get ahead of the risks as the RSTC was also tasked to do, and how appreciative he is of how far the Committee has come and thanked the Committee for the hard work as it continues to mature.

Chair Ford concluded the meeting by thanking the participants, the committee members and looked forward to the meeting the next day.

September 14, 2022

Chair Ford called the meeting to order at approximately 8:30 a.m. Central, and thanked everyone for attending. Ms. Tina Buzzard reviewed the procedures for the meeting, reviewed the Antitrust Compliance Guidelines, and confirmed quorum, as well as provided an overview of the polling actions to be used for Committee actions during the meeting. Ms. Candice Castaneda reviewed the governance policies for the meeting.

Introductions and Chair's Remarks

Chair Ford thanked everyone for attending and highlighted the agenda for the day.

Regular Agenda

GADS Section 1600 Data Request

Chair Ford called an audible and stated the action for the GADS Section 1600 Data Request would be amended from endorse to review stating it was determined after the Informational Session that redlines of changes to the GADs proposal since its last comment period were not yet posted. He noted that late the week before a link was distributed to the Committee to redlines of the latest Section 1600 GADs updates posted on NERC's website. He noted NERC Staff will review the changes as part of the presentation, seek review and comments from the RSTC members, and then initiate an Action Without A Meeting for an email vote on whether to endorse the Section 1600 GADS proposal. Ms. Pratt then reviewed the GADs Section 1600 Data Request and confirmed that an action without a meeting will be initiated and the electronic voting will occur between Sept. 22 – Oct. 6 and if endorsed the GADs Section 1600 Data Request will be submitted to the Board of Trustees in November 2022 for their consideration and approval.

Risk and Mitigations for Losing EMS Functions Reference Document

Mr. Wei Qui presented the Risk and Mitigations for Losing EMS Functions Reference document noting the reference document is published biennially and in preparation the NERC EMSWG conducted an update in 2022 by analyzing the causes of EMS events reported through the ERO Event Analysis Process (EAP) from 2017–2021. He stated the document includes identification and discussion of reliability and security risks due to the loss of EMS functions and presents risk mitigation strategies used by industry. Upon motion duly made and seconded, the Committee endorsed the reference document.

Getting to Know the ERO Event Analysis Program

Mr. Matt Lewis presented on the ERO Event Analysis Program stating the purpose of this information briefing is to provide background on the EA program and process and to provide an update on recent trends. He also noted that conducting forensic analysis of system events is a responsibility of the ERO Event Analysis Program and the program is derived from authorities/requirements listed in Section 800 of the NERC Rules of Procedure.

RAS LTRA Preview and 2022 Assessment Plan

Ms. Anna Lafoyiannis presented an update on plans for the 2022 Long-Term Reliability Assessment (including probabilistic assessment) and the 2022-23 Winter Reliability Assessment (WRA).

Reliability Vignette: Transmission Operations Impacts Due to High Wind Cut-outs

Mr. Rich Bauer presented on the Reliability Vignette noting it is an analysis of a storm, with high winds, that moved through two different Balancing Authorities (BAs) and that the analysis looked at the effects

the storm had on the BAs and offered areas for consideration in managing storms with different resource mix percentages, in the future.

RSTC Strategic Plan

Mr. Hydzik presented on the RSTC Strategic Plan and highlighted that in accordance with its charter, the RSTC will develop and maintain a two-year strategic plan and an associated Work Plan to carry-out the functions of the committee. He stated the RSTC Executive Committee is seeking comments on the draft RSTC Strategic Plan by October 13, 2022. Mr. Ford directed interested reviewers to email Mr. Crutchfield.

RSTC Subordinate Group Review Process

Mr. Robert Reinmuller provided an update on the RSTC Subordinate Group review process which includes the RSTC Sponsors in coordination with subordinate group leadership and NERC Staff Liaisons reviewing the working group or task force deliverables and work plans to complete the information in the developed template. He stated once the templates are complete, the RSTC Executive Committee and Sponsors will review them to make a recommendation on the status of the subordinate group and review with the full RSTC at the December RSTC meeting for approval.

Mitsubishi Transformer Update

Mr. Darrell Moore presented an update on the Mitsubishi Transformer issue highlighting the concern was that beginning in April 2022, Mitsubishi Electric announced that investigations commissioned by the company had found instances of transformers manufactured at Mitsubishi Electric's Transmission & Distribution Systems Center in Ako, Hyogo Prefecture and an instance of transformers manufactured at their former Memphis Tennessee transformer factory, not fully complying with customer-requested testing standards, internal-design guidelines, or agreements, but were documented as having passed.

BPS Generation Trends

Mr. Scott Barfield-McGinnis provided an update on the earlier discussion at the March 2022 RSTC meeting on pending BPS generation trend analysis and presented the initial findings associated with the evolving resource mix.

GMD Work Shop Update

Mr. Mark Olson presented an update on the GMD Work Shop noting that NERC and EPRI will host a workshop for industry planners and operators to discuss current topics and share information on activities to reduce risks to the bulk power system from geomagnetic disturbances (GMD) associated with severe space weather.

Forum and Group Reports

Mr. Wayne Sipperly, NAGF and Mr. Roman Carter, NATF provided highlights of their written reports that were provided in the advance agenda package.

RSTC 2022 Calendar Review

Mr. Crutchfield reviewed the remaining 2022 RSTC meeting dates and previewed the 2023 meeting dates and requested members to please advise him if there are any concerns or industry conflicts to the proposed 2023 dates.

Chair’s Closing Remarks and Adjournment

Chair Ford thanked attendees and Committee members for their attendance and participation. There being no further business before the RSTC, Chair Ford adjourned the meeting.

Stephen Crutchfield

Stephen Crutchfield
Secretary