NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Agenda
Member Representatives Committee

August 12, 2021 | 11:00 a.m. – 1:00 p.m. Eastern

Attendee WebEx: Click to Join

Introduction and Chair's Remarks

NERC Antitrust Compliance Guidelines and Public Announcement*

Consent Agenda

1. **Minutes - (Approve)**
   a. May 13, 2021 Meeting*
   b. July 14, 2021 Conference Call*

Regular Agenda

2. **Future Meetings***
3. **Schedule for MRC Officer and Sector Elections***
4. **General Updates and Reports**
   a. Business Plan and Budget Input Group Update*
   b. Regulatory Update*
5. **Policy and Discussion Items**
   a. Responses to the Board's Request for Policy Input*
      i. Implementation of ERO Policies, Procedures, and Programs for 2021/2022 Winter Energy Readiness*
   b. Additional Policy Discussion of Key Items from Board Committee Meetings*
      i. Corporate Governance and Human Resources Committee
      ii. Technology and Security Committee
      iii. Finance and Audit Committee
   c. MRC Input and Advice on Board Agenda Items and Accompanying Materials*

Technical Updates

6. **Update on FERC Reliability Matters***

7. **Risk Registry***
8. **Bulk Power System Situation Awareness Update***

*Background materials included.

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Antitrust Compliance Guidelines

I. General

It is NERC's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or that might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.

It is the responsibility of every NERC participant and employee who may in any way affect NERC's compliance with the antitrust laws to carry out this commitment.

Antitrust laws are complex and subject to court interpretation that can vary over time and from one court to another. The purpose of these guidelines is to alert NERC participants and employees to potential antitrust problems and to set forth policies to be followed with respect to activities that may involve antitrust considerations. In some instances, the NERC policy contained in these guidelines is stricter than the applicable antitrust laws. Any NERC participant or employee who is uncertain about the legal ramifications of a particular course of conduct or who has doubts or concerns about whether NERC's antitrust compliance policy is implicated in any situation should consult NERC's General Counsel immediately.

II. Prohibited Activities

Participants in NERC activities (including those of its committees and subgroups) should refrain from the following when acting in their capacity as participants in NERC activities (e.g., at NERC meetings, conference calls and in informal discussions):

- Discussions involving pricing information, especially margin (profit) and internal cost information and participants' expectations as to their future prices or internal costs.
- Discussions of a participant's marketing strategies.
- Discussions regarding how customers and geographical areas are to be divided among competitors.
- Discussions concerning the exclusion of competitors from markets.
- Discussions concerning boycotting or group refusals to deal with competitors, vendors or suppliers.
- Any other matters that do not clearly fall within these guidelines should be reviewed with NERC's General Counsel before being discussed.

III. Activities That Are Permitted

From time to time decisions or actions of NERC (including those of its committees and subgroups) may have a negative impact on particular entities and thus in that sense adversely impact competition. Decisions and actions by NERC (including its committees and subgroups) should only be undertaken for the purpose of promoting and maintaining the reliability and adequacy of the bulk power system. If you do not have a legitimate purpose consistent with this objective for discussing a matter, please refrain from discussing the matter during NERC meetings and in other NERC-related communications.

You should also ensure that NERC procedures, including those set forth in NERC's Certificate of Incorporation, Bylaws, and Rules of Procedure are followed in conducting NERC business.

In addition, all discussions in NERC meetings and other NERC-related communications should be within the scope of the mandate for or assignment to the particular NERC committee or subgroup, as well as within the scope of the published agenda for the meeting.

No decisions should be made nor any actions taken in NERC activities for the purpose of giving an industry participant or group of participants a competitive advantage over other participants. In particular, decisions with respect to setting, revising, or assessing compliance with NERC reliability standards should not be influenced by anti-competitive motivations.

Subject to the foregoing restrictions, participants in NERC activities may discuss:

- Reliability matters relating to the bulk power system, including operation and planning matters such as establishing or revising reliability standards, special operating procedures, operating transfer capabilities, and plans for new facilities.
- Matters relating to the impact of reliability standards for the bulk power system on electricity markets, and the impact of electricity market operations on the reliability of the bulk power system.
- Proposed filings or other communications with state or federal regulatory authorities or other governmental entities.

Matters relating to the internal governance, management and operation of NERC, such as nominations for vacant committee positions, budgeting and assessments, and employment matters; and procedural matters such as planning and scheduling meetings.

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Draft Minutes
Member Representatives Committee

May 13, 2021 | 11:00 a.m. – 1:00 p.m. Eastern

Chair Paul Choudhury, with Vice Chair Roy Jones present, called to order a duly noticed meeting of the Member Representatives Committee (MRC) of the North American Electric Reliability Corporation (NERC) via teleconference on May 13, 2021, at 11:00 a.m., Eastern, and a quorum was declared present. The agenda and MRC members and their proxies in attendance are attached as **Exhibits A** and **B**, respectively.

Introduction and Chair's Remarks

Mr. Choudhury welcomed MRC members and attendees, acknowledging the Board, Andy Dodge from the Federal Energy Regulatory Commission (FERC), Pat Hoffman from the Department of Energy, State Commissioner Kate Bailey, CAMPUT representative David Morton, and Tab Gangopadhyay from the Canada Energy Regulator. Mr. Choudhury reminded attendees that full presentations were conducted at the Board committee meetings and would not be repeated during the MRC meeting. He acknowledged the MRC's responses to the policy input request from Ken DeFontes, Chairman of the Board.

Mr. Choudhury noted that Carol Chinn and Terry Young will be retiring in the coming months. He congratulated them on their upcoming retirements and thanked them for their participation on the MRC. Special elections will be conducted to fill the upcoming vacancies.

Antitrust Guidelines/Public Announcement

Ms. Iwanechko directed the participants' attention to the NERC Antitrust Compliance Guidelines included in the agenda package, and indicated that all questions regarding antitrust compliance or related matters should be directed to Sonia Mendonca, senior vice president, general counsel, and corporate secretary at NERC.

Minutes

Upon motion duly made and seconded, the MRC approved the minutes of the February 4, 2021, and April 14, 2021, meetings as presented at the meeting.

Future Meetings

The schedule of future meeting dates, including the pre-meeting and informational webinars for 2021, was included in the agenda package. Mr. DeFontes noted that the August meetings will be held virtually. He noted that the Board is looking into the possibility of a hybrid meeting in Atlanta in November, with the Board and MRC members meeting in person and all other attendees attending virtually, and a decision on the November meetings will be announced in August.

Board of Trustees Nominating Committee Update

Roy Thilly, chair of the Board of Trustees Nominating Committee (BOTNC), noted that four incumbent trustees are eligible for re-election in February 2022 and all four indicated a strong commitment to NERC's mission and desire to continue serving on the Board. Mr. Choudhury and Mr. Jones solicited input from MRC members on their desire to conduct an external search or support for re-nominating the four incumbents without a search. Based on input received, the BOTNC decided not to conduct an external search and will meet in the Fall to prepare the recommendation that the four incumbents be re-nominated in advance of the February 2022 election.

Business Plan and Budget Input Group Update

Sylvain Clermont, chair of the Business Plan and Budget (BP&B) Input Group, provided an update on the group's activities. The group met three times since the February MRC meeting, discussing assumptions for future stakeholder meetings, alignment on strategic workforce development, and budgetary impacts of the Align project. Mr. Clermont noted that input from the group was integrated into NERC's presentation at the Finance and Audit Committee meeting on May 12. He commended NERC's continued transparency and collaboration with the BP&B Input Group throughout the BP&B development process.

Regulatory Update

Ms. Mendonca invited questions or comments regarding the regulatory report, which highlights Canadian affairs, as well as past and future significant FERC filings.

MRC Effectiveness Survey Results

Mr. Choudhury reviewed the results from the MRC Effectiveness Survey conducted in January 2021, which were included in the agenda package. He noted that responses were positive and the specific comments were helpful, many of which related to the impact of not having face-to-face meetings this past year. Mr. Choudhury acknowledged that although ratings were high, continuous improvement is important. He highlighted areas identified for continued focus, including communications, new member engagement and training, MRC member engagement with their sectors, and ongoing feedback. Mr. Choudhury also acknowledged that the response rate was lower than the previous survey and committed to highlighting response rates for future surveys.

Responses to the Board's Request for Policy Input

Mr. Choudhury acknowledged the MRC's responses to Mr. DeFontes' April 7, 2021, letter requesting policy input on the Reliability and Security Technical Committee, in addition to the preliminary agenda topics for the May meetings. Responses to the letter are posted on the NERC website.

Reliability and Security Technical Committee

Greg Ford, chair of the Reliability and Security Technical Committee (RSTC), thanked MRC members for their policy input. He noted that the RSTC is reviewing the input and will post a matrix on the RSTC web page summarizing the comments with responses. Based on input received, the RSTC will discuss improvements to agendas, schedules, and processes.

Additional Policy Discussion of Key Items from Board Committee Meetings

Attendees did not have any additional comments related to the Board's Corporate Governance and Human Resources and Technology and Security Committee meetings.

Finance and Audit Committee

MRC members provided comments on the proposed assessment increase for 2022, with some members uncomfortable with the increase and others supportive. MRC members expressing discomfort suggested further discussion on priorities and allocation of resources. Some MRC members also suggested developing metrics to substantiate the allocated funds balanced with increasing priorities and pressures.

MRC Input and Advice on Board Agenda Items and Accompanying Materials

Attendees did not have any comments on the topics included on the Board's agenda for its meeting following the MRC meeting.

Standards Efficiency Review Update

Howard Gugel, vice president of engineering and standards at NERC, provided an overview of the Standards Efficiency Review (SER) project which was established in 2018 to evaluate NERC Reliability Standards using a risk-based approach to identify potential efficiencies through retirement or modification of Reliability Standard Requirements. The SER project used a multi-phase approach:

- Phase 1: Identify Requirements for retirement or modification
- Phase 2: Develop and recommend programmatic standards-based solutions to reduce inefficiencies and unnecessary regulatory burdens
- CIP: Evaluate critical infrastructure protection standards to identify requirements for retirement or modification

Mr. Gugel provided an update on each phase and referenced a final report posted on the SER web page that memorializes the project with a detailed summary. He noted that the SER web page is being updated to ensure that all relevant materials are documented for reference by industry and future standard drafting teams. The web page will continue to be maintained for transparency and to provide accountability for completing outstanding deliverables that are being addressed by other areas.

Update on FERC Reliability Matters

Andy Dodge, director of the Office of Electric Reliability at FERC, provided an update on the following FERC reliability activities: Office of Public Participation workshop and listening sessions; April 29, 2021, Electrification and the Grid of the Future Conference; June 1-2, 2021, Climate Change, Extreme Weather, and Electric System Reliability Conference; June 23-24, 2021, Western Resource Adequacy Conference; September 30, 2021, Reliability Technical Conference; joint inquiry into 2021 cold weather grid operations; Notice of Proposed Rulemaking (NOPR) regarding revisions to regulations on ERO performance assessments; letter order approving Reliability Standards addressing supply chain risk management; delegated letter approving Reliability Standard FAC-008-5; and Order approving Reliability Standard BAL-002-WECC-3.

Bulk Power System Situation Awareness Update

Darrell Moore, director, bulk power system awareness (BPSA) and personnel certifications at NERC, explained that the NERC BPSA group is responsible for acquiring and disseminating timely, accurate, and complete information regarding the current status of the bulk power system and threats to its reliable operation. He highlighted NERC BPSA activities during the Texas and Mid-South cold weather event, including facilitating ERO Enterprise conference calls, monitoring conditions, providing daily status updates to the ERO Enterprise, FERC, and U.S. Department of Energy, receiving OE-417 and EOP-004 reports from impacted entities, and providing near real-time data to impacted ERO Enterprise situation awareness teams. Mr. Moore also provided an overview of OE-417 and EOP-004 reports from Q1 2021 by Regional Entity, Energy Emergency Alert Level 3 (EEA3) reports from the past twelve months by Regional Entity, and NERC Alerts published over the last three years.

Ensuring Energy Adequacy with Energy-Constrained Resources

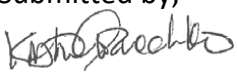
Mark Lauby, senior vice president and chief engineer at NERC, and Peter Brandien, chair of the Energy Reliability Assessment Task Force (ERATF), provided an update on activities around ensuring energy adequacy with energy-constrained resources. Mr. Lauby discussed current challenges, noting that the transforming grid is resulting in a system that has a higher level of energy uncertainty, regardless of fuel type, and therefore, focus needs to shift from fuel type to energy adequacy. He provided an overview of a whitepaper which was presented to the RSTC in December 2020 and focuses on energy adequacy in three timeframes: mid-to-long term planning (one to five year), operational planning (one day to one year), and operations (zero to one day). The whitepaper includes eleven questions which were categorized into three focus areas: (1) energy adequacy and flexibility for evolving resource mix; (2) gas delivery security; and (3) metrics, procedures, and analysis.

In March 2021, the RSTC formed the ERATF to develop: (1) a technical foundation for the three time horizons; (2) ways to identify the levels of energy that are required to meet the operational needs; and (3) tool specifications needed to incorporate energy considerations into planning, operational planning, and operations assessments. Mr. Brandien acknowledged the important work ahead of the ERATF as industry transitions to more limited, variable resources. He discussed the three focus areas and the questions from the whitepaper that fit in to each of those focus areas. Mr. Brandien also reviewed the scope and deliverables for the ERATF and highlighted the ERATF membership, which includes representation from the MRC and Board.

Adjournment

There being no further business, the meeting was adjourned.

Submitted by,



Kristin Iwanechko
Secretary

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

DRAFT Minutes
Member Representatives Committee Pre-Meeting Informational Session Conference Call and Webinar

July 14, 2021 | 11:00 a.m. – 12:00 p.m. Eastern

Introduction and Chair's Remarks

Chair Paul Choudhury convened a duly-noticed open meeting by conference call and webinar of the North American Electric Reliability Corporation (NERC) Member Representatives Committee (MRC) on July 14, 2021, at 11:00 a.m., Eastern. The meeting provided the MRC and other stakeholders an opportunity to preview proposed agenda topics for the MRC, Board of Trustees (Board), and Board Committee meetings scheduled to be held August 11-12, 2021, via teleconference. The meeting announcement and agenda are attached as **Exhibits A and B**, respectively.

NERC Antitrust Compliance Guidelines and Public Announcement

Kristin Iwanechko, MRC Secretary, directed the participants' attention to the NERC Antitrust Compliance Guidelines included in the agenda package, and indicated that all questions regarding antitrust compliance or related matters should be directed to Sonia Mendonca, senior vice president, general counsel, and corporate secretary at NERC.

Schedule of Quarterly NERC Meetings and Conference Calls

The draft schedule of events for the upcoming meetings was included in the agenda package.

Review of Proposed Board and Board Committees Meeting Agenda Items

Ms. Mendonca reviewed the preliminary agenda items for the Board and Board Committee meetings scheduled for August 11-12, 2021, that were identified in the slide presentation included in the informational session agenda package. MRC members should review all agenda materials for the Board and Board Committee meetings, once posted and available, and attend as many of these meetings as possible in advance of the MRC's meeting on August 12, 2021.

Review of Proposed MRC Agenda Items for August 12, 2021

Mr. Choudhury reviewed the following preliminary MRC agenda items for the upcoming August 12, 2021, meeting that were identified in the slide presentation included in the informational session agenda package:

- Schedule for MRC Officer and Sector Elections;
- Business Plan and Budget Input Group Update;
- Regulatory Update;
- Discussion of the Responses Submitted to the Policy Input Request from the Board;

  - Implementation of ERO Policies, Procedures, and Programs for 2021/2022 Winter Energy Readiness;
- Additional Discussion of the Items Presented at the Board Committee Meetings;
- MRC Input and Advice on Board Agenda Items and Accompanying Materials;
- Update on FERC Reliability Matters;
- Risk Registry; and
- Bulk Power System Situation Awareness Update.

Policy Input Reminder

Mr. Choudhury announced that the Board's request for policy input was released on July 7, 2021, and responses are due by Wednesday, July 28, 2021, to Ms. Iwanechko. Mark Lauby, senior vice president and chief engineer at NERC, provided an overview of the *Implementation of ERO Policies, Procedures, and Programs for 2021/2022 Winter Energy Readiness*, which was included in the Board's request for policy input.

The Board also requested input on the preliminary agenda topics presented during the MRC Informational Session. There will be time dedicated on the MRC's August 12, 2021, agenda for MRC members to provide input and advice on the Board agenda items after the final package has been posted.

Proxy Reminder

Proxy notifications for the August 12, 2021, meeting must be submitted in writing to Ms. Iwanechko.

Meeting Adjourned

There being no further business, the call was terminated.

Submitted by,

Kristin Iwanechko
Secretary

Future Meetings

Action
Information

Summary
The following are the future meeting dates for 2021. The dates for 2021 pre-meeting and information webinars are also included below.

2021 Dates

October 6	Pre-Meeting and Informational Session
November 3-4	(Final Format Still to be Determined)

2022 Dates

February 9-10	New Orleans, LA (In-Person)
May 11-12	Washington, DC (In-Person)
August 17-18	Vancouver, BC (In-Person)
November 9-10	Atlanta, GA (Hybrid In-Person/Virtual)

Agenda Item 3
MRC Meeting
August 12, 2021

Schedule for MRC Officer and Sector Elections

Action
Information

Background
Chair Paul Choudhury will announce the upcoming nomination and election cycle for the Member Representatives Committee (MRC) officers and those members whose terms expire in February 2022. The tentative schedule is shown below.

MRC Officer Elections
Wednesday, September 8 – nomination period opens
Friday, October 8 – nomination period closes
Thursday, November 4 – election of officers for following year by current MRC members

MRC Member Sector Nominations and Elections
Wednesday, September 8 – nomination period opens
Friday, November 8 – nomination period closes
Wednesday, December 8 – election begins
Friday, December 17 – election ends

Reference Links
Membership of the MRC for 2021-2023
NERC Bylaws

Agenda Item 4a
MRC Meeting
August 12, 2021

Business Plan and Budget Input Group Update

Action
Information

Summary
The Business Plan and Budget (BP&B) Input Group was established as a means of getting MRC and stakeholder feedback toward each year's budget. The group meets at least once per month during the normal budget season and additionally in other months to receive updates on NERC's financial position and discuss upcoming budget strategies. The following MRC members are serving on this year's BP&B Input Group:

1. **Sylvain Clermont (Chair)** – Federal/Provincial Utility
2. **Paul Choudhury** – MRC Chair
3. **Jennifer Flandermeyer** – Investor-Owned Utility
4. **Thad Ness** – Investor-Owned Utility
5. **John Haarlow** – State/Municipal Utility
6. **Bill Gallagher** – Transmission-Dependent Utility

In addition to the above MRC members, the BP&B Input Group also includes a representative from a Regional Entity (Tim Gallagher – RF) and a representative from the RISC (Peter Brandien – past RISC chair).

Sylvain Clermont, chair of the BP&B Input Group, will provide an update on behalf of the group at the August 12, 2021, MRC Meeting.

Update on Regulatory Matters (As of July 12, 2021)

Action
Information

Background

FERC Orders Issued Since the Last Update
FERC orders are available on the NERC website FERC Orders/Rules page.

NERC Filings to FERC Since the Last Update
NERC filings to FERC are available on the NERC website NERC Filings to FERC page.

NERC Filings in Canadian Jurisdictions Since the Last Update
NERC filings to Canadian applicable governmental authorities are available on the NERC website Canadian Filings and Orders page. This page also contains links to the websites of each of the Canadian applicable governmental authorities, where orders, consultation records, and other records related to NERC matters may be found.

Processes for making standards enforceable and monitoring and enforcing compliance are specific to each jurisdiction in Canada. The Federal, Provincial, and Territorial Monitoring and Enforcement Sub-group (MESG) has developed provincial summaries of each province's electric reliability standard-making and enforcement functions, with U.S. comparators. The Canada page of the NERC website contains these summaries, as well as a link to the Canadian MOUs page.

Anticipated NERC Filings
Highlights of NERC filings that will be submitted to applicable governmental authorities in the U.S. and Canada appear below:

1. July 22, 2021 – NERC will submit a petition for Rules of Procedure (ROP) revisions for CMEP, Personnel Certification Program, and Training and Education Program.

   Docket TBD

2. August 14, 2021 – Within 45 days of the end of each quarter, NERC must submit the unaudited report of the NERC budget-to-actual spending variances during the preceding quarter.

   Docket No. FA11-21-000

   Pending Board approval

3. August 16, 2021 – NERC will submit a Petition for Approval of Revised MRO Reliability Standard Development Procedure.

   Docket TBD

   Pending Board approval

4. August 19, 2021 – NERC will submit a Petition for approval of Reliability Standards ROP Revisions.

   Docket TBD

   Pending Board approval

5. August 19, 2021 – NERC will submit a quarterly filing in Nova Scotia of FERC-approved Reliability Standards.

6. August 24, 2021 – NERC must submit the annual business plans and budgets of NERC and the Regional Entities, in accordance with 18 C.F.R § 39.4.

   Docket TBD

   Pending Board approval

7. September 15, 2021 – NERC will submit a Petition for Approval of CIP-004-7 – Cyber Security – Personnel & Training and CIP-011-3 – Cyber Security – Information Security developed under Project 2019-02 BES Cyber System Information Access Management.

   Docket TBD

   Pending Board approval

8. September 15, 2021 – NERC will submit a Critical Infrastructure Protection Standard Drafting Team Schedule Update.

   Docket No. RD20-2-000

9. September 28, 2021 – NERC will submit the annual Technical Feasibility Exception report.

   Docket Nos. RR10-1-000, RR13-3-000

Agenda Item 5a
MRC Meeting
August 12, 2021

Responses to the Board's Request for Policy Input

Action
Discussion

Background
The policy input letter is issued by the Chair of the NERC Board of Trustees (Board) four to five weeks in advance of the quarterly meetings and includes relevant materials necessary to inform and prepare for discussion. Written input from the Member Representatives Committee (MRC) and stakeholders is due three weeks after issuance and is then revisited during a dedicated discussion time on the MRC's agenda, in the presence of the Board.

Summary
For this quarter, the Board requested specific policy input on the Implementation of ERO Policies, Procedures, and Programs for 2021/2022 Winter Energy Readiness. In addition, the Board requested input on preliminary Board, Board Committee, and MRC agenda topics. On August 12, 2021, the MRC can expect to participate in discussion on the responses received from the policy input request.

The policy input letter with its attachments and responses are posted with the Board's August 2021 meeting materials.

Agenda Item 5ai
MRC Meeting
August 12, 2021

Implementation of ERO Policies, Procedures, and Programs for 2021/2022 Winter Energy Readiness

Action
Policy Input

Background
Extreme weather is a well-documented and growing risk to reliability. The meaning of "extreme events" is expanding. First, extreme does not mean rare, and second, extreme, long-duration, widespread temperatures, which had not been as much of an issue in the past, has become a common condition that the transformed resource mix requires more resilience. The effects of extreme temperatures or solar/wind/moisture droughts and wildfires are exacerbated by a bulk power system that has rapidly transforming generation resource mix that are more sensitive to these extreme conditions.

The ERO Enterprise has various policies, procedures, and programs to identify and mitigate risks to the bulk power system. As industry prepares for the upcoming winter, the ERO Enterprise is employing several of these policies, procedures, and programs.

Summary
Since 2011, the ERO Enterprise has heightened its scrutiny over events during extreme winter weather conditions. Most recently, FERC and the ERO Enterprise initiated a joint inquiry to review the circumstances surrounding the February 2021 event that affected Texas and parts of the southern central United States. Prior to that, driven by the result of a joint inquiry into the January 17, 2018, south central United States cold weather event, NERC initiated a project resulting in the development of Reliability Standards EOP-011-2, IRO-010-4, and TOP-003-5. These Cold Weather Reliability Standards were recently adopted by the NERC Board of Trustees and are currently pending FERC approval. They will require generators to:

- Implement plans for cold weather preparedness;
- Require Generator Owners to implement plans to prepare for cold weather; and
- Provide certain generator cold weather operating parameters to the Reliability Coordinator, Transmission Operator, and Balancing Authority for use in their analyses and planning.

The Cold Weather Reliability Standards will enhance the ability of the Balancing Authority, Transmission Operator, and Reliability Coordinator to plan and operate the grid reliably during cold weather conditions by requiring the exchange of information related to the generator's capability to operate.

As these new Reliability Standards will not go into effect before the upcoming winter, and there are additional preparations needed beyond unit winterization, the ERO Enterprise is pursuing several efforts to evaluate industry preparedness for the upcoming 2021-2022 Winter.

1. **Winter Weather Preparedness Outreach and Industry Engagement** – The ERO Enterprise will conduct several webinars, conferences, and workshops focused on cold weather preparedness.
2. **Registered Entity On-site/Virtual Engagement** – Some Regional Entities will conduct on-site or virtual visits with their registered entities to better understand the extent of condition for preparedness for the upcoming winter.
3. **Level 2 NERC Alert** – NERC will issue a Level 2 Alert in August 2021 to gauge the following:
   - The actions being taken to prepare for the upcoming winter.
   - The specific mitigations from existing Reliability Guidelines and Lessons Learned being implemented.
   - The status of implementing those mitigations.
   - The timeline for completing any outstanding mitigation prior to the upcoming winter season.

   The Alert will recommend specific actions be taken based on past events and the new Reliability Standards. Responses will be used as an input by the ERO Enterprise to determine the general risk profile for the upcoming winter.
4. **Compliance Monitoring and Enforcement Program (CMEP) Practice Guide** –The ERO Enterprise is considering developing a CMEP Practice Guide to help CMEP staff engage with and understand how registered entities are managing the risk to reliability related to cold weather preparedness in preparation for, and during the implementation of, the Cold Weather Reliability Standards. The Practice Guide will provide direction to CMEP staff on understanding registered entities' current cold weather preparedness plans and activities during compliance monitoring and enforcement activities to provide the ERO Enterprise with a better understanding of the entity's practices as they relate to mitigating known cold weather related risks. In addition, it will encourage industry to be proactive and consider existing good utility practices in their approach to cold weather preparedness.
5. **2021/2022 Winter Reliability Assessment** – This annual report, expected to the published in November 2021, will include additional focus on extreme winter weather preparation, energy management planning, and expected operational conditions.

The efforts listed above will help the ERO Enterprise highlight areas of high risk that should be identified and mitigated before the upcoming winter season. As part of the July Policy Input Letter, the NERC Board of Trustees requested input on whether there are other activities the ERO Enterprise should pursue and what additional steps industry should take in preparation for the upcoming Winter.

Agenda Item 5b
MRC Meeting
August 12, 2021

Additional Policy Discussion of Key Items from Board Committee Meetings

Action

Discussion of specific items presented at the Board of Trustees (Board) Committee meetings. Staff presentations made at the Board Committee meetings will not be duplicated at the Member Representatives Committee (MRC) meeting.

Summary

On August 12, 2021, the MRC will have additional time for policy discussion, as part of its own agenda, to respond to the information that is presented during the Board Committee meetings.

The Board committee agendas and associated background materials will be posted on the following webpages approximately one to two weeks in advance of the meetings:

Corporate Governance and Human Resources Committee

Technology and Security Committee

Finance and Audit Committee

Agenda Item 5c
MRC Meeting
August 12, 2021

MRC Input and Advice on Board Agenda Items and Accompanying Materials

Action
Discussion

Background
Article VIII, Section 1 of the NERC Bylaws states that the MRC shall have the right and obligation to "provide advice and recommendations to the Board with respect to the development of annual budgets, business plans and funding mechanisms, and other matters pertinent to the purpose and operations of the Corporation."

In the policy input letter issued on July 7, 2021, the NERC Board of Trustees (Board) requested comments on the preliminary agenda topics for the August Board meeting that were reviewed during the July 14, 2021, MRC Informational Session. At the August 12, 2021, meeting, MRC members should come prepared to provide input on behalf of their sectors on the Board's formal agenda package posted on July 29, 2021.

Agenda Item 6
MRC Meeting
August 12, 2021

Update on FERC Reliability Matters

Action
Information

Summary
At the August 12, 2021, MRC meeting, Andrew Dodge, Director, Office of Electric Reliability, FERC, will provide an update on recent FERC activity.

Agenda Item 7
MRC Meeting
August 12, 2021

Risk Registry

Action
Information

Background
In an effort to continually monitor the existing risks to the Bulk-Power System (BPS) and manage the efforts of the ERO Enterprise to actively identify and address current and new risks, NERC created a Risk Registry. This registry overlaps some with the risk profiles identified in the latest ERO Reliability Risk Priorities Report (RISC report) and other risks identified in past reports and assessments. In addition to reporting on future emerging risks, the Risk Registry also focuses on reporting on activities addressing current emergent risks to the BPS.

The attached draft of the Risk Registry identifies a few of the risks or "tasks" to address current risks to the BPS. The most critical and high priority tasks address energy adequacy, extreme natural events, security threats, and inverter performance. The security threats and extreme natural events mirror the risk profiles of the RISC report. Energy adequacy and inverters are a different categorization focused on grid transformation. Future versions of the Risk Registry will be used as project/resource management tool and will include a consistent risk prioritization method that will be periodically reviewed with the Reliability Issues Steering Committee (RISC).

Attachment
1. Draft NERC Risk Registry, August 2021

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DRAFT NERC Risk Registry

August 2021

RELIABILITY | RESILIENCE | SECURITY




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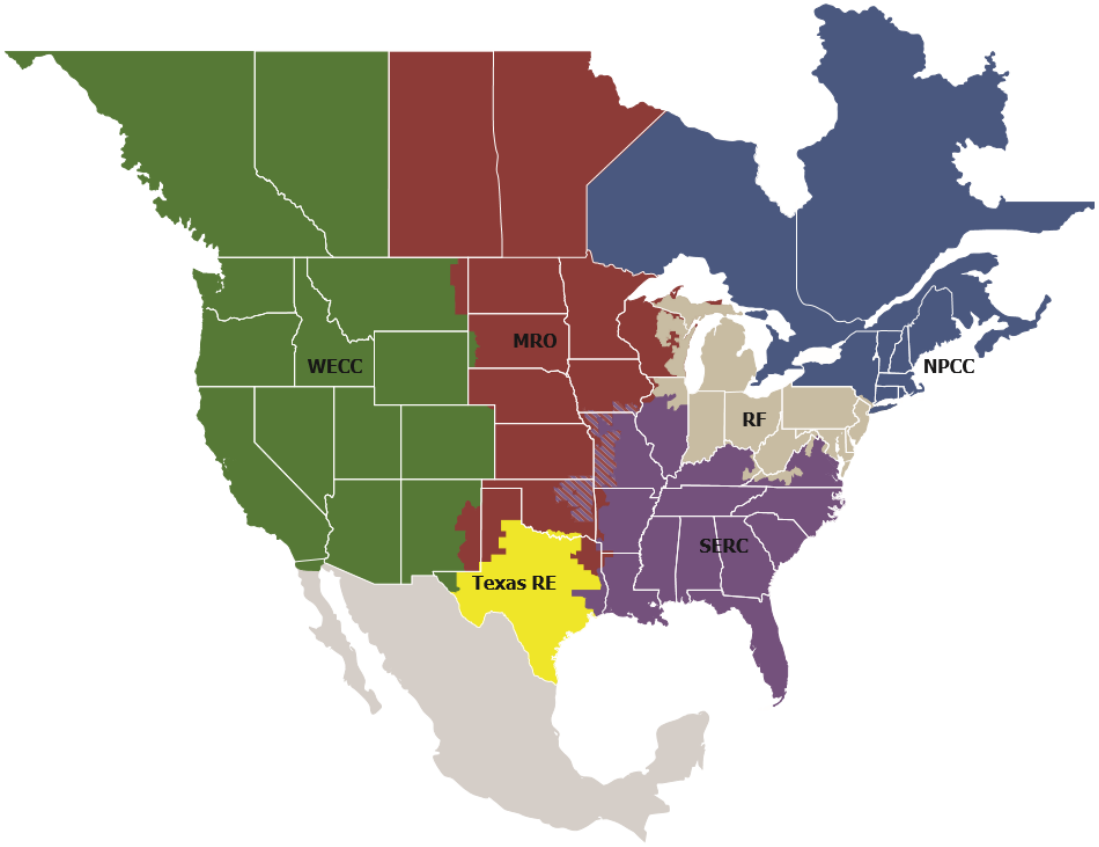
Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the six Regional Entities (REs), is a highly reliable and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is made up of six RE boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one RE while associated Transmission Owners (TOs)/Operators (TOPs) participate in another.



MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Executive Summary

The Risk Registry is a culmination of inputs from various sources that report on NERC-supported efforts.[1] The efforts or "tasks" are the result of identified risks to the BPS. There is some overlap with other documents.[2] The Risk Registry focuses on current and projected risks while other reports may have different time horizons.

Currently the critical "Risk Categories" for 2021 address: 1) energy adequacy, 2) security risks (cyber and physical), 3) extreme natural events, namely cold weather preparedness, and 4) inverters. The majority of the tasks fall under security risk (12 critical or high priority tasks). There are seven inverter tasks categorized as critical or high priority while extreme natural events and energy adequacy only has five and two tasks respectively.

The Risk Registry also groups tasks by Risk Profiles. These Risk Profiles are slightly different from the Risk Categories. The Reliability Issues Steering Committee (RISC) established the Risk Profiles, and the Risk Categories are established internally by NERC. The Risk Profiles include Security Risks and Extreme Natural Events, and the corresponding tasks are identical. RISC identified two additional risk profiles of Critical Infrastructure Interdependencies and Grid Transformation. The majority of the tasks fall under Grid Transformation while one (1) task is devoted to Critical Infrastructure Interdependency.

[1] This report does not contain any non-public information or information that cannot be shared outside of the ERO Enterprise, nor does this report contain any information on initiatives or projects that have not started. All tasks listed are "in progress." Future iterations of this report will include resource allocations and will be used as a project management/reporting tool.

[2] State of Reliability, Seasonal Assessments, Long Term Reliability Assessment, and RISC ERO Reliability Risk Priorities Report

Introduction

Background

To continually monitor the existing risks to the Bulk-Power System (BPS) and manage the efforts of the ERO Enterprise to actively identify and address new threats, NERC is working with the Reliability Issues Steering Committee (RISC) to create and refine a Risk Registry. This registry will align with the risk profiles identified in the latest RISC ERO Reliability Risk Priorities Report (RISC report), but the Risk Registry will focus on activities addressing current and emerging risks.

The Risk Registry currently provides an inventory of risks identified through various stakeholder inputs that include industry outreach, the ERO Enterprise (including the NERC Board of Trustees), RISC, and stakeholder committees. The Risk Registry will provide the basis for risk prioritization that will be forthcoming at the end of 2021. This prioritization model (Process 2 in figure 1) will be documented separately.

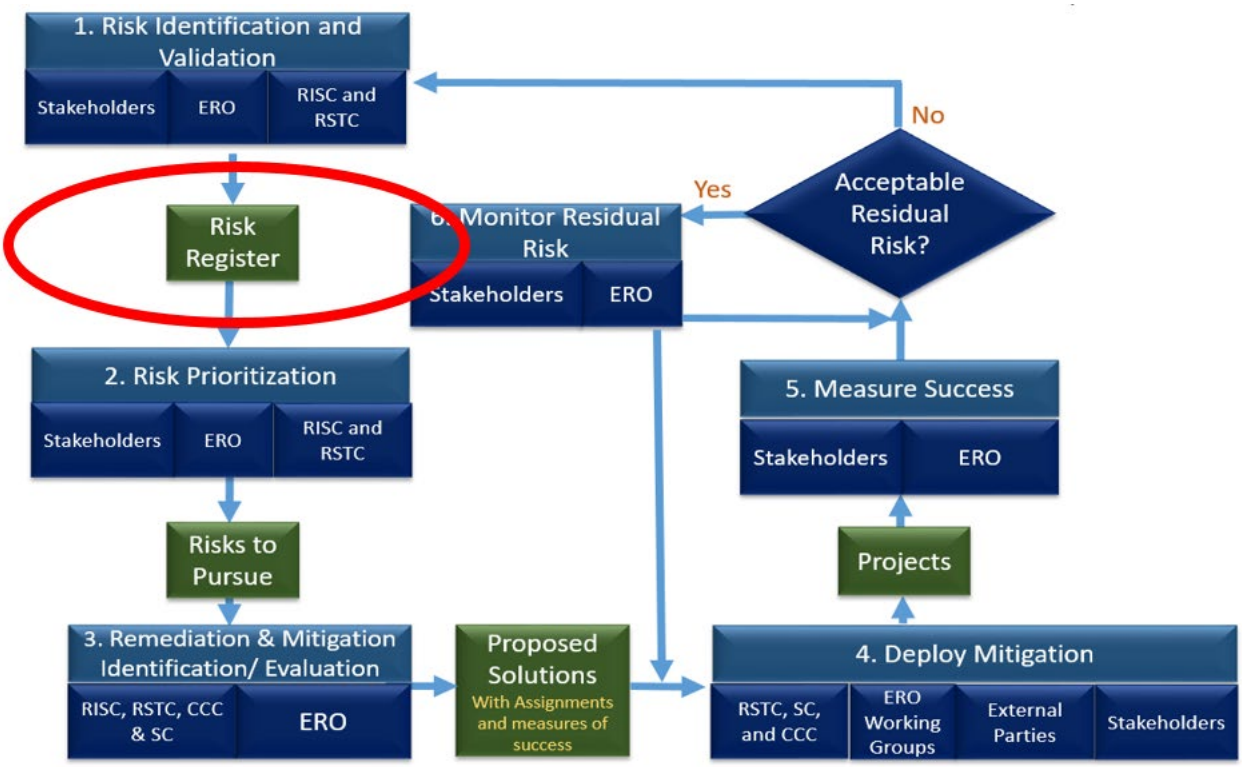


Figure 1. Risk Management Flow Chart/Model

The Risk Registry provides an inventory of all of the critical projects NERC is supporting, and will track the effort to assess, mitigate, or monitor[3] the known risks to the BPS.

[3] Assess refers to items modeling, planning, simulation, and data gathering stages. Mitigate refers to items that require industry or ERO Enterprise actions, and monitor refers to items that may transition to a mitigation depending on the analysis and status of the risks.

Chapter 1: Critical and High Priority Tasks

Risk Registry

The Risk Registry is organized by "tasks" that are identified as projects or efforts by NERC departments or one of the standing committees. The tasks are further broken down by Risk Profiles (as defined in the RISC report),[4] Risk Registry priority,[5] Risk Stage,[6] and task type.[7]

Overview of In Progress Critical and High Priority Tasks

The critical "Risk Categories" for 2021 address: 1) energy adequacy, 2) cyber security, 3) extreme natural events, namely cold weather preparedness, and 4) inverters. Any tasks in the risk registry that addressed these areas were given a "Critical" or "High" priority to be included in the Risk Registry. Figure 2 represents all tasks currently in progress:

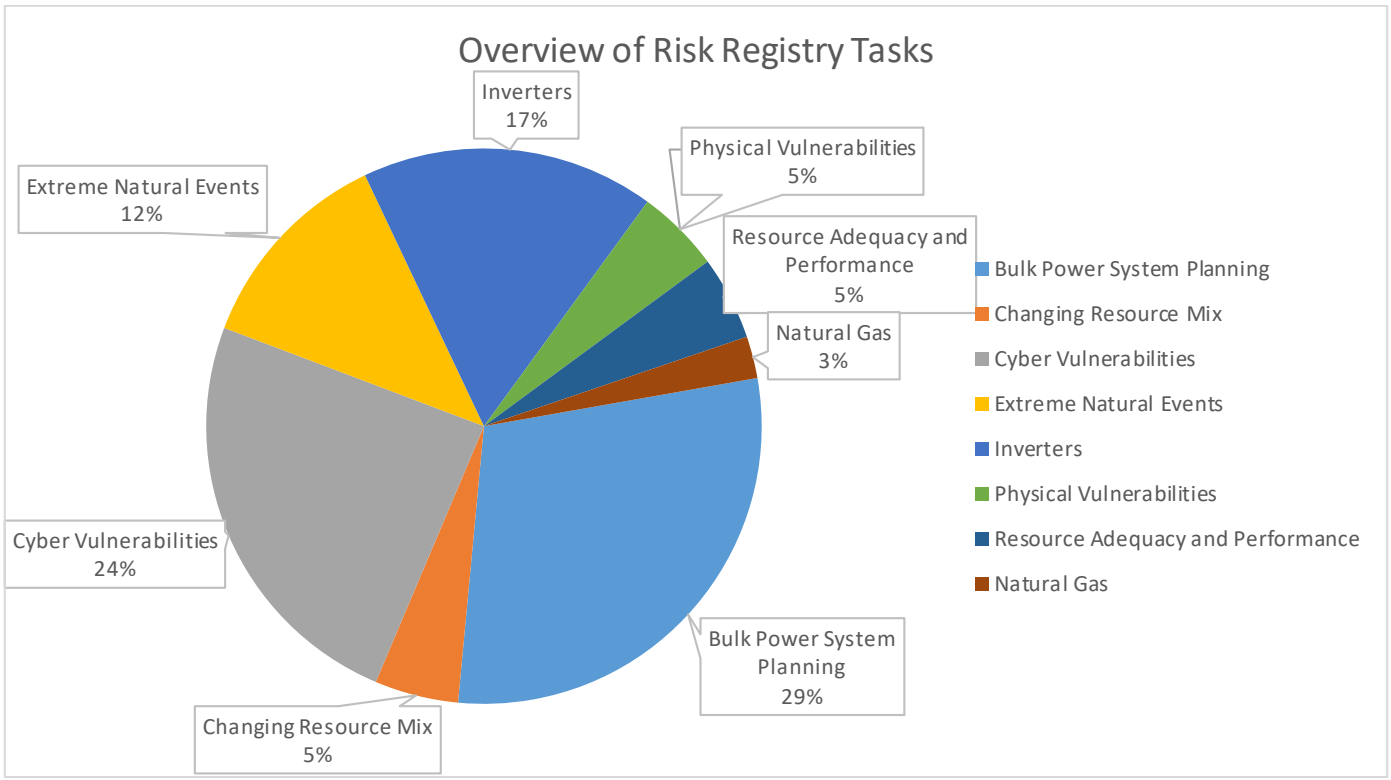


Figure 2. Overview of Critical and High Priority Risk Registry Tasks

Energy Adequacy

The current tasks or efforts that address energy adequacy are the Probabilistic Analysis Forum, the Energy Reliability Assessment Task Force (ERATF) and the Gas-Electric Planning Basis (N-1).

[4] Critical Infrastructure Interdependencies, Extreme Natural Events, Grid Transformation, and Security Risks (Cyber and Physical risks).
[5] Critical, High, and Normal.
[6] Assess, Mitigate, and Monitor.
[7] Analysis, Assessment, Collaboration, Coordination, Data Collection, Event, Guidance, Implement, Lessons Learned, Outreach, Practice Guide, Reference Document, Reliability Guideline, Report, Review, SAR/RFI, Standard Project, Webinar, White Paper, and Workshop.

Security Risks (Physical and Cyber Security)

The Risk Profile for Security Risk includes both Cyber and Physical security threats to the BPS. There are currently 12 tasks in progress to address risks that are ranked Critical or High:

1) Lessons Learned - BCSI in the Cloud Tabletop
2) Planning approaches, models and simulation approaches that reduce the number of critical facilities
3) Project 2019-02 BES Cyber System Information Access Management
4) Project 2020-03 Supply Chain Low Impact Revisions
5) Project 2020-04 Modifications to CIP-012-1
6) Reliability/Security Guideline: Integration of Cyber and Physical Security with BPS Planning, Operations, Design, and System Restoration
7) Security or implementation guidance for cloud-based EAMS and PAMS
8) SITES Industry Workshop
9) State of Technology Report
10) Utility Essential Security Practices Whitepaper
11) White Paper: Review and Enhancement of Cybersecurity Maturity Metrics
12) White Paper: Risk-Based Physical and Cybersecurity Threats and their Impacts to BPS Reliability and Resilience

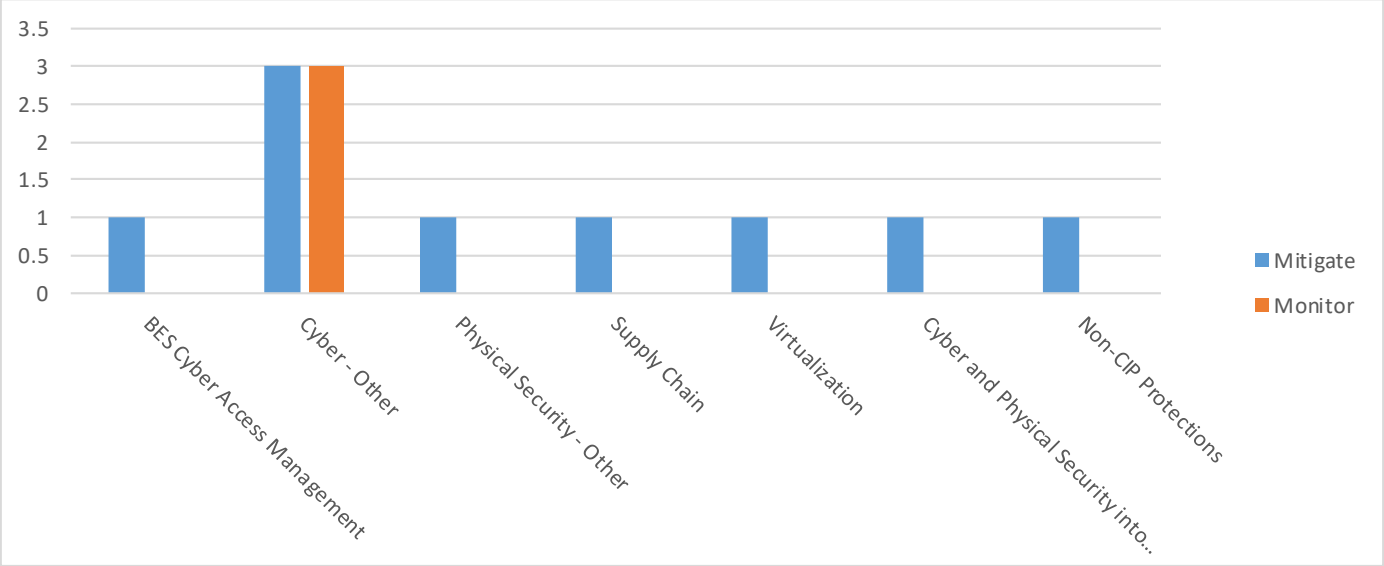


Figure 3. Number of Critical and High Priority Tasks by Security Risks (RISC Profile)

Extreme Natural Events/Cold Weather Preparedness

For extreme natural events, there are several ongoing ERO Enterprise efforts though the current version of the Risk Registry tasks only includes NERC-led projects. Future iterations of the Risk Registry will include ERO Enterprise efforts:

1. 2021-2022 Winter Alert
2. 2021 Winter Weather Prep Webinar
3. 2021-2022 Winter Reliability Assessment
4. Project 2019-06 Cold Weather
5. Cold Weather Compliance Monitoring and Enforcement Program (CMEP) Practice Guide

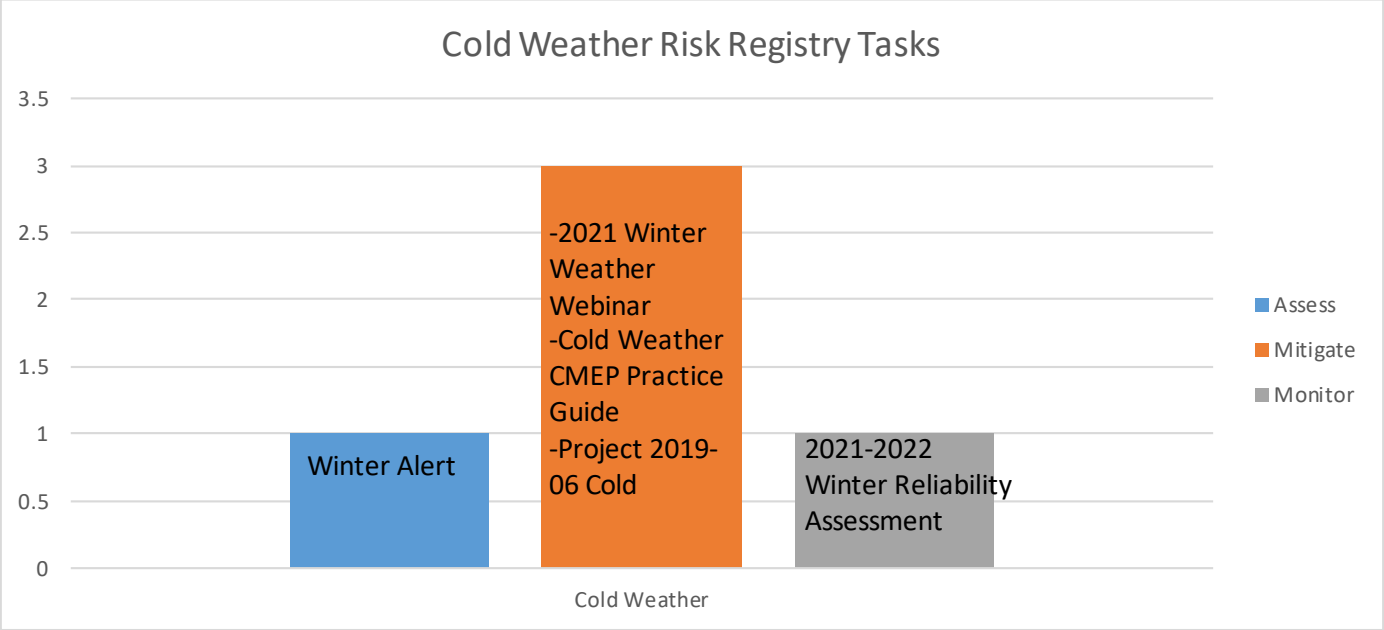


Figure 4. Numbers of Critical and High Priority Tasks for Cold Weather Risks

Inverters

The current tasks or efforts in progress for inverter-based resources (IBR) ranked with a critical or high priority are:

1. White Paper: BPS-Connected IBR and Hybrid Plant Capabilities for Frequency Response
2. Reliability Guideline: Recommended Approach to Interconnection Studies for BPS-Connected Inverter-Based Resources
3. CMEP Distributed Energy Resource (DER) Practice Guide
4. Project 2020-02 Transmission-connected Dynamic Reactive Resources[8]
5. Project 2020-05 Modifications to FAC-001-3 and FAC-002-2
6. Project 2020-06 Verifications of Models and Data for Generators
7. Technical Report: Energy Transition to Higher Penetrations of Inverter-Based Resources

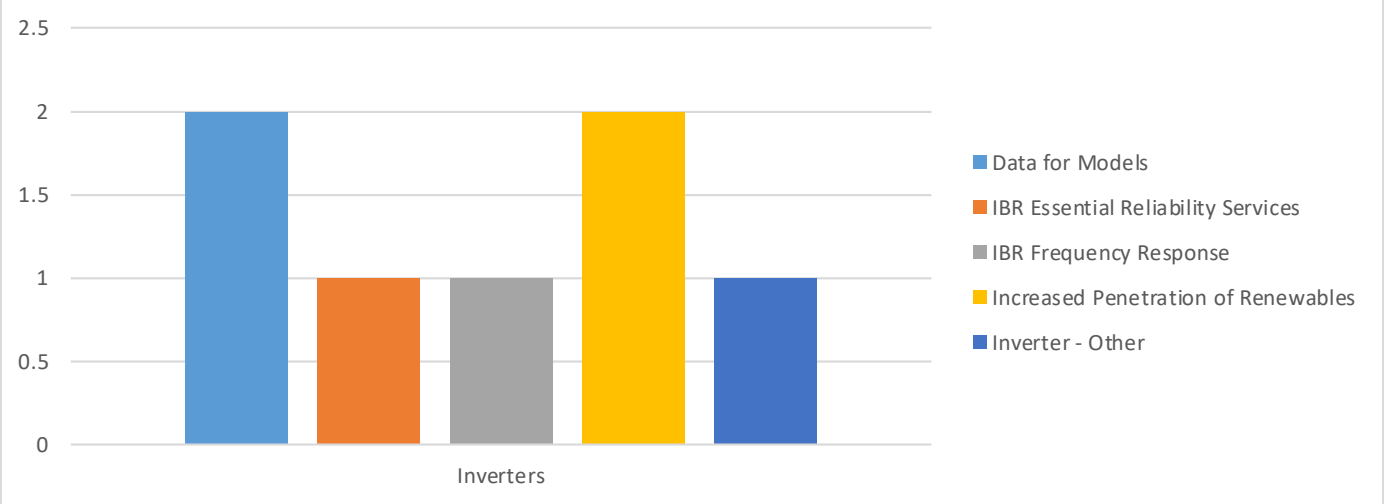


Figure 5. Number of Critical and High Priority Tasks for Inverters (Risk Category)

[8] This project is overlapping with other projects that will take pieces of this project to address inverters.

Chapter 2: Risk Registry by Risk Profiles

Risk Profile Tasks

The Risk Registry also groups the tasks by RISC's Risk Profiles: Critical Infrastructure Interdependencies, Extreme Natural Events, Grid Transformation, and Security Risks (Cyber and Physical risks). The tasks are categorized to represent the objectives of each item on the Risk Registry.

The Grid Transformation includes the shift away from conventional synchronous central-station generators toward a new mix of generation resources, fuel sources, and fuel delivery. Extreme Natural Events include extreme events such as wildfires, extreme temperatures, large storms, and geomagnetic disturbances (GMD) that can have widespread impacts. Security Risks encompass threats that leverage physical or cyber vulnerabilities to compromise other portions of the BPS. Critical Infrastructure Interdependencies highlight the need for utilities to rely on other sectors in order to operate.

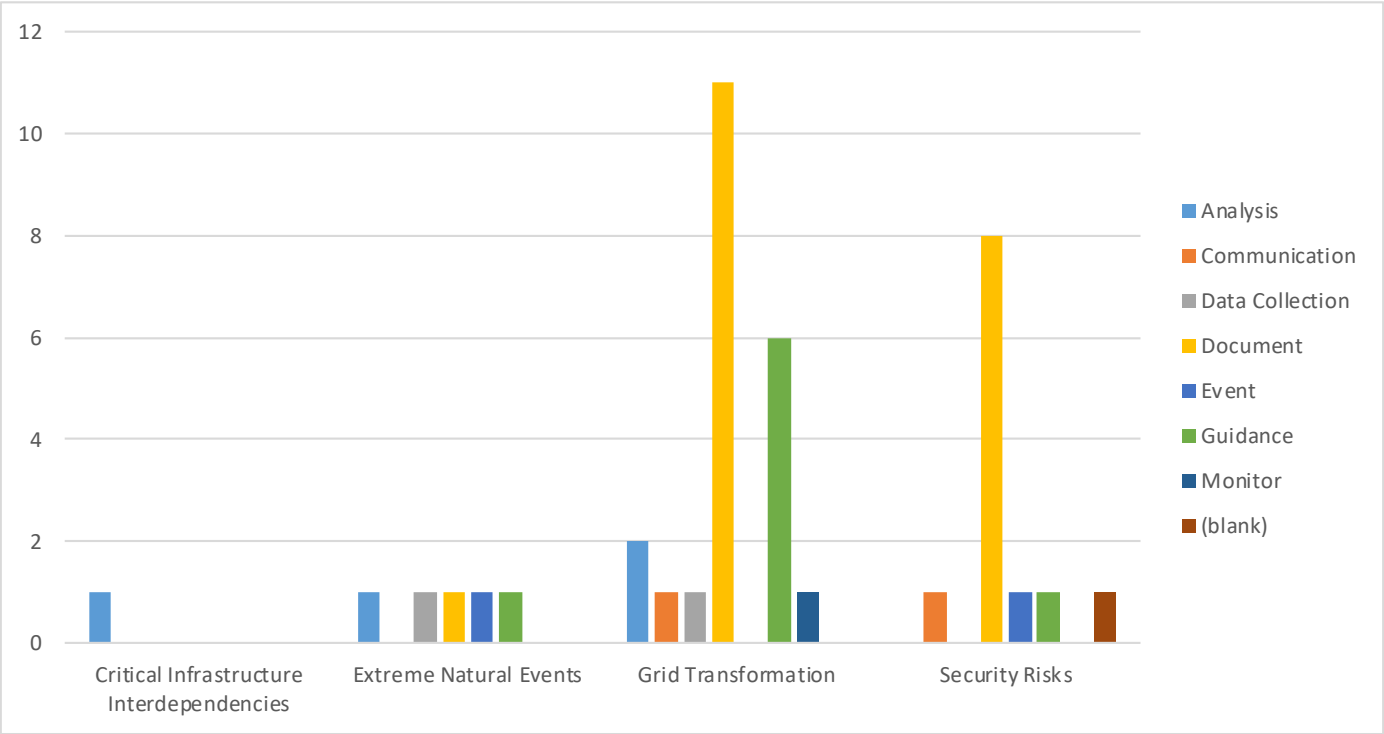


Figure 6. Number of Critical and High Priority Tasks by Risk Profiles

The **Probabilistic Analysis Forum** being planned for 2021 task was not categorized into Risk Profile as the topic encompassed into several tasks. This task addresses all of the risk profiles because it will address fuel sourcing and disruption capabilities. The remainder of the Risk Registry tasks fall into the following Risk Profiles:

Risk Registry by Risk Profiles			
Critical Infrastructure Interdependencies	**Extreme Natural Events**	**Grid Transformation**	**Security Risks**
Gas-Electric Planning Basis (N-1)	2021 Winter Weather Prep Webinar	2021 Long Term Reliability Assessment	Planning approaches, models and simulation approaches that reduce the number of critical facilities
	2021-2022 Winter Alert	White Paper: BPS-Connected IBR and Hybrid Plant Capabilities for Frequency Response	Project 2019-02 BES Cyber System Information Access Management
	2021-2022 Winter Reliability Assessment	Reliability Guideline: Recommended Approach to Interconnection Studies for BPS-Connected Inverter-Based Resources	Project 2020-03 Supply Chain Low Impact Revisions
	Cold Weather CMEP Practice Guide	NERC Reliability Standards Review White Paper	Project 2020-04 Modifications to CIP-012-1
	Project 2019-06 Cold Weather	Tracking and Reporting DER Growth	Reliability / Security Guideline: Integration of Cyber and Physical Security with BPS Planning, Operations, Design, and System Restoration
		CMEP DER Guide	Report on BCSI in the Cloud mock audit
		Energy Reliability Assessment Task Force (ERATF)	Security or implementation guidance for cloud-based EAMS and PAMS
		M1-DER Modeling Survey	SITES Industry Workshop
		M6-Modeling Distributed Energy Storage and Multiple Types of DERs	State of Technology Report
		O1-White Paper: FERC Order 2222 and BPS Reliability Perspectives	Utility Essential Security Practices Whitepaper
		Project 2020-02 Transmission-connected Dynamic Reactive Resources	White Paper: Review and Enhancement of Cybersecurity Maturity Metrics
		Project 2020-05 Modifications to FAC-001-3 and FAC-002-2	White Paper: Risk-Based Physical and Cybersecurity Threats and their Impacts to BPS Reliability and Resilience
		Project 2020-06 Verifications of Models and Data for Generators	

Risk Registry by Risk Profiles			
Critical Infrastructure Interdependencies	**Extreme Natural Events**	**Grid Transformation**	**Security Risks**
		Reliability Guideline: Bulk Power System Planning under Increasing Penetration of Distributed Energy Resources	
		SAR: Updates to TPL-001 Regarding DER Considerations	
		Recommended Simulation Improvements and Techniques	
		Reliability Guideline: Recommended Approaches for Developing Underfrequency Load Shedding Programs with Increasing DER Penetration	
		White Paper: DER Impacts to UVLS Programs	
		White Paper: Beyond Positive Sequence RMS Simulations for High DER Penetration Conditions	
		Section 1600 Data Request for GADS	
		Technical Report: Energy Transition to Higher Penetrations of Inverter-Based Resources	
		Reliability Guideline: DER Forecasting Practices and Relationship to DER Modeling for Reliability Studies	

Current Critical and High Risk Tasks by Risk Profiles

In order to synchronize these areas with the RISC Report, figure 7 provides an overview of Tasks by Risk Profiles:

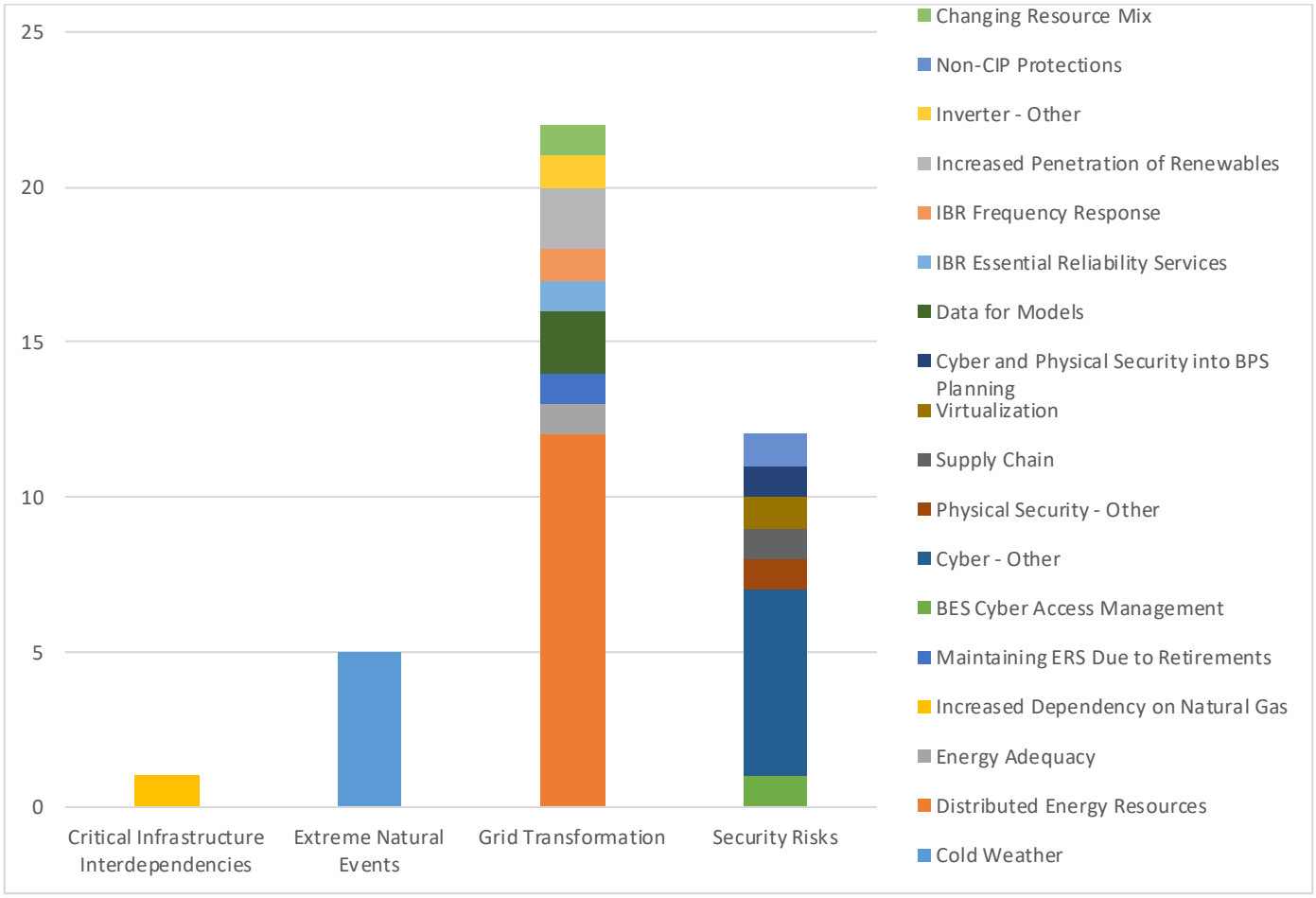


Figure 7. Number of Critical and High Priority Task by Risk Profiles

Figure 8 reflects the risk staging by Risk Profiles:

Figure 8. Number of Critical and High Priority Tasks and Risk Stages by Risk Profile

Chapter 3: Next Steps

NERC will collaborate with the Reliability and Security Technical Committee (RSTC) and other committees to add additional tasks identified as emerging risks or tasks to track as part of this process. The Risk Registry will be updated quarterly, and future versions will be reviewed by the RISC as the risk prioritization is developed.

Appendix A: Raw Data

Table A.1: Risk Registry Details					
Task Name	**Description**	**RISC Profile**	**External Link**	**Risk Registry Priority**	**Risk Staging**
2021 Long Term Reliability Assessment	Annual Reliability Assessment Required by NERC Rules of Procedure (ROP) Section 800.	Grid Transformation	https://www.nerc.com/pa/RAPA/ra/Pages/default.aspx	High	Assess
2021 Winter Weather Prep Webinar	Prepare for and facilitate the annual winter weather prep webinar	Extreme Natural Events		Critical	Mitigate
2021-2022 Winter Alert	The Alert will recommend specific actions be taken based on past events and the new Reliability Standards. Responses will be used as an input by the ERO Enterprise to determine the general risk profile for the upcoming winter. Responses are required for Level 2 Alerts and are to be submitted by September 14, 2021.	Extreme Natural Events		Critical	Assess
2021-2022 Winter Reliability Assessment	Seasonal Reliability Assessment Required by NERC ROP Section 800.	Extreme Natural Events		Critical	Monitor
White Paper: BPS-Connected IBR and Hybrid Plant Capabilities for Frequency Response	White paper on utilizing the full capabilities of inverter-based resources and hybrid plants for providing frequency response.	Grid Transformation	https://www.nerc.com/comm/PC/Pages/Inverter-Based-Resource-Performance-Task-Force.aspx	Critical	Mitigate
2021 Probabilistic Analysis Forum	Plan and enact a 2021 Probabilistic Analysis Forum (PAF) akin to the 2019 PAF.		https://www.nerc.com/comm/PC/Pages/Probabilistic-Assessment-Working-Group-(PAWG).aspx	Critical	Assess

Table A.1: Risk Registry Details

Task Name	Description	RISC Profile	External Link	Risk Registry Priority	Risk Staging
Reliability Guideline: Recommended Approach to Interconnection Studies for BPS-Connected Inverter-Based Resources	Focused guidance on improving the study process for BPS-connected inverter-based resources, particularly with increasing penetrations of these resources and the growing complexity of performing sufficient studies to ensure BPS reliability.	Grid Transformation	https://www.nerc.com/comm/PC/Pages/Inverter-Based-Resource-Performance-Task-Force.aspx	Critical	Mitigate
NERC Reliability Standards Review White Paper	White Paper reviewing NERC Reliability Standards and impacts of DER.	Grid Transformation	https://www.nerc.com/comm/PC/Pages/System-Planning-Impacts-from-Distributed-Energy-Resources-Subcommittee-(SPIDERWG).aspx	High	Mitigate
Tracking and Reporting DER Growth	Coordinated review of information regarding DER growth, including types of DER, size of DER, etc. Consideration for useful tracking techniques for modeling and reliability studies.	Grid Transformation	https://www.nerc.com/comm/PC/Pages/System-Planning-Impacts-from-Distributed-Energy-Resources-Subcommittee-(SPIDERWG).aspx	High	Monitor
CMEP DER Guide	Provide CMEP staff questions to ask regarding their collection and use of DER across the various modeling and TPL standards.	Grid Transformation		High	Assess
Cold Weather CMEP Practice Guide	Develop Cold Weather CMEP Practice Guide to provide direction to ERO Enterprise CMEP staff around Cold Weather Reliability Standards EOP-011-2, IRO-010-4, and TOP-003-5.	Extreme Natural Events		Critical	Mitigate
Energy Reliability Assessment Task Force (ERATF)	The task force will look at energy availability concerns related to operations, operations planning and mid-to-long-term planning horizons. The scope and work plan will be created and sent to the RSTC.	Grid Transformation		Critical	Assess

Table A.1: Risk Registry Details					
Task Name	**Description**	**RISC Profile**	**External Link**	**Risk Registry Priority**	**Risk Staging**
Gas-Electric Planning Basis (N-1)	Develop information that will inform work to create a Reliability Standard for natural gas planning criteria.	Critical Infrastructure Interdependencies	Electric-Gas Working Group (EGWG) (nerc.com)	High	Assess
DER Modeling Survey	Perform industry survey of SPIDERWG members regarding use of DER planning models in BPS studies, dynamic load models and DER modeling guidelines.	Grid Transformation	https://www.nerc.com/comm/PC/Pages/System-Planning-Impacts-from-Distributed-Energy-Resources-Subcommittee-(SPIDERWG).aspx	High	Assess
Modeling Distributed Energy Storage and Multiple Types of DERs	SPIDERWG will dig into technical considerations of modeling distributed energy storage, specifically distributed battery energy storage (D-BESS). The group will also consider how to model multiple types of DERs, including D-BESS and distributed solar PV (D-PV). Lastly, the group will focus on forecasting and dispatch assumptions for D-BESS. SPIDERWG will determine the level of guidance or reference materials needed once discussions begin. Task to be coordinated with Studies sub-group.	Grid Transformation	https://www.nerc.com/comm/PC/Pages/System-Planning-Impacts-from-Distributed-Energy-Resources-Subcommittee-(SPIDERWG).aspx	High	Assess
White Paper: FERC Order No. 2222 and BPS Reliability Perspectives	White paper identifying key BPS reliability perspectives with the recently released FERC Order 2222. This is being developed by SPIDERG sub-group leadership and Dan Kopin, and will get full review and input from overall SPIDERWG once initial draft complete.	Grid Transformation	https://www.nerc.com/comm/PC/Pages/System-Planning-Impacts-from-Distributed-Energy-Resources-Subcommittee-(SPIDERWG).aspx	High	Mitigate

Table A.1: Risk Registry Details					
Task Name	**Description**	**RISC Profile**	**External Link**	**Risk Registry Priority**	**Risk Staging**
Planning approaches, models and simulation approaches that reduce the number of critical facilities	Joint effort with PC/OC	Security Risks	https://www.nerc.com/comm/RSTC/Pages/default.aspx	High	Mitigate
Project 2019-02 BES Cyber System Information Access Management	This initiative enhances BES reliability by creating increased choice, greater flexibility, higher availability, and reduced-cost options for entities to manage their BES Cyber System Information, by providing a secure path towards utilization of modern third-party data storage and analysis systems. In addition, the proposed project would clarify the protections expected when utilizing third-party solutions (e.g., cloud services).	Security Risks	Project Page	High	Mitigate

Table A.1: Risk Registry Details					
Task Name	**Description**	**RISC Profile**	**External Link**	**Risk Registry Priority**	**Risk Staging**
Project 2019-06 Cold Weather	In July 2019, the FERC and NERC staff report titled The South Central United States Cold Weather Bulk Electronic System Event of January 17, 2018 (Report) was released. Following the report, Southwest Power Pool, Inc. (SPP) submitted a SAR proposing a new standard development project to review and address the recommendations in the Report. The industry need for this SAR is to enhance the reliability of the BES during cold weather event. Purpose/Industry Need To enhance the NES reliability during cold weather events by ensuring Generator Owners, Generator Operators, Reliability Coordinators, and Balancing Authorities prepare for extreme cold weather. Standard(s) Affected: BAL and IRO Standards	Extreme Natural Events	Project Page	Critical	Mitigate
Project 2020-02 Transmission-connected Dynamic Reactive Resources	Dynamic reactive resources used to provide Essential Reliability Services (ERS) in the BES include generation resources (rotating machine and inverter-based) as well as transmission connected dynamic reactive resources (power-electronics based). Existing Reliability Standards for verifying the capability, modeling and performance of dynamic reactive resources are only applicable to Facilities comprising generation resources.	Grid Transformation	Project Page	Critical	Mitigate

Table A.1: Risk Registry Details					
Task Name	**Description**	**RISC Profile**	**External Link**	**Risk Registry Priority**	**Risk Staging**
Project 2020-03 Supply Chain Low Impact Revisions	This project will address the NERC Board resolution adopted at its February 2020 to initiate a project to modify Reliability Standard CIP-003-8 to include policies for low impact BES Cyber Systems to: (1) detect known or suspected malicious communications for both inbound and outbound communications; (2) determine when active vendor remote access sessions are initiated; and (3) disable active vendor remote access when necessary.	Security Risks	Project Page	Critical	Mitigate
Project 2020-04 Modifications to CIP-012-1	The purpose of this project is to address a directive issued by the Federal Energy Regulatory Commission (FERC) in Order No. 866 to develop modifications to the CIP Reliability Standards to require protections regarding the availability of communication links and data communicated between the bulk electric system Control Centers.	Security Risks	Project Page	High	Mitigate

Table A.1: Risk Registry Details					
Task Name	**Description**	**RISC Profile**	**External Link**	**Risk Registry Priority**	**Risk Staging**
Project 2020-05 Modifications to FAC-001-3 and FAC-002-2	The NERC Inverter-based Resource Performance Task Force (IRPTF) undertook an effort to perform a comprehensive review of all NERC Reliability Standards to determine if there were any potential gaps or improvements based on the work and findings of the IRPTF. The IRPTF identified several issues as part of this effort and documented its findings and recommendations in a white paper. The "IRPTF Review of NERC Reliability Standards White Paper" was approved by the Operating Committee and the Planning Committee in March 2020. Among the findings noted in the white paper, the IRPTF identified issues with FAC-001-3 and FAC-002-2 that should be addressed.	Grid Transformation	Project Page	Critical	Mitigate

Table A.1: Risk Registry Details

Task Name	Description	RISC Profile	External Link	Risk Registry Priority	Risk Staging
Project 2020-06 Verifications of Models and Data for Generators	Standards Authorization Request (SAR) for MOD-026-1 and MOD-027-1 regarding dynamic model verification. MOD-026-1 and MOD-027-1 require, among other things, GOs to provide verified dynamic models to their Transmission Planner (TP) for the purposes of power system planning studies. Both standards contain language that is specific to synchronous generators and is not applicable to inverter-based resources (IBRs). For example, sub-requirement 2.1.3 in MOD-026-1 states that each verification shall include "model structure and data including, but not limited to reactance, time constants, saturation factors, total rotational inertia..." The standards should be revised to clarify the applicable requirements for synchronous generators and IBRs. For example, total rotational inertia should not be required for IBRs, while voltage ride-through control settings should only be required of IBRs and not synchronous generators. Additionally, to some degree, all dynamic model parameters affect the response of a represented resource in dynamic simulations performed by power engineers. Accurate model response is required for the engineers to adequately study system conditions. Hence, it is crucial that all parameters in a model be verified in some way. However, a significant number of parameters in the models are not verified in the typical verification tests used to comply with MOD-026-1 and MOD-027-1. For example, the test currently used to comply with MOD-026-1 does not verify the model parameters associated with voltage control behavior during large disturbance conditions.	Grid Transformation	Project Page	Critical	Mitigate

Table A.1: Risk Registry Details

Task Name	Description	RISC Profile	External Link	Risk Registry Priority	Risk Staging
Report on BCSI in the Cloud mock audit	Lessons learned and supporting documentation from WAPA/Microsoft Azure BCSI in the Cloud Tabletop project	Security Risks		High	Mitigate
Reliability Guideline: Bulk Power System Planning under Increasing Penetration of Distributed Energy Resources	Reliability Guideline providing recommended practices for performing planning studies considering the impacts of aggregate DER behavior – study approaches, analyzing BPS performance criteria incorporating DER models into studies, developing study assumptions, etc.	Grid Transformation	https://www.nerc.com/comm/PC/Pages/System-Planning-Impacts-from-Distributed-Energy-Resources-Subcommittee-(SPIDERWG).aspx	High	Mitigate
SAR: Updates to TPL-001 Regarding DER Considerations	Sub-team is developing a SAR that incorporates the recommendations put forth in the approved white paper, considering the items that need standards revisions to improve reliability. This activity will also be coordinated with IRPWG to address the issues identified in their recently approved white paper identifying issues with TPL-001.	Grid Transformation	http://departments.internal.nerc.com/wEROck/Lists/EROPerformanceObjectives/AllItems.aspx	High	Assess
Recommended Simulation Improvements and Techniques	Develop and provide guidance to software vendors on simulation improvements on DER.	Grid Transformation	https://www.nerc.com/comm/PC/Pages/System-Planning-Impacts-from-Distributed-Energy-Resources-Subcommittee-(SPIDERWG).aspx	High	Assess
Reliability Guideline: Recommended Approaches for Developing Underfrequency Load Shedding Programs with Increasing DER Penetration	Guidance on how to study UFLS programs and ensure their effectiveness with increasing penetration of DER represented	Grid Transformation	https://www.nerc.com/comm/PC/Pages/System-Planning-Impacts-from-Distributed-Energy-Resources-Subcommittee-(SPIDERWG).aspx	High	Mitigate

Table A.1: Risk Registry Details

Task Name	Description	RISC Profile	External Link	Risk Registry Priority	Risk Staging
White Paper: DER Impacts to UVLS Programs	Short white paper on potential impacts of DERs on UVLS program design; leverage work of PRC-010 standards review (C6 task).	Grid Transformation	https://www.nerc.com/comm/PC/Pages/System-Planning-Impacts-from-Distributed-Energy-Resources-Subcommittee-(SPIDERWG).aspx	High	Mitigate
Section 1600 Data Request for GADS	NERC RoP GADS Section 1600 Data Reporting to collect and analyze GADS data: • Conventional - relevant design data and enhanced event reporting • Wind - connected energy storage and event reporting • Solar - plant configuration, performance and event data as well as equipment outage detail	Grid Transformation	Section 1600 Data Requests	Critical	Assess
Security or implementation guidance for cloud-based EAMS and PAMS	In support of CIP development efforts pertaining to virtualization issues	Security Risks		Critical	Mitigate
SITES Industry Workshop	SITES will hold an industry-wide technical workshop (likely remotely) to highlight strategic areas of focus related to new technologies, technology enablement, and security integration. (Scope Activity Technology Enablement #2)	Security Risks		High	Monitor
State of Technology Report	Technical report providing industry with strategic guidance regarding new or emerging technology solutions and risk-based considerations for their successful implementation. (Scope Activity Technology Enablement #1)	Security Risks		High	Monitor

Table A.1: Risk Registry Details					
Task Name	**Description**	**RISC Profile**	**External Link**	**Risk Registry Priority**	**Risk Staging**
Technical Report: Energy Transition to Higher Penetrations of Inverter-Based Resources	Continuation of "Tabled Issues." Discussion of IRPTF and NERC activities beyond those captured in the PRC-024-2 White Paper, as documented in the white paper. Discussion, analysis, and recommendations for continued improvements to inverter-based resource performance and NERC standards	Grid Transformation	https://www.nerc.com/comm/PC/Pages/Inverter-Based-Resource-Performance-Task-Force.aspx	Critical	Assess
Utility Essential Security Practices Whitepaper	Guidance for cyber/physical security protections for non-CIP utility technologies such as inverters, synchro-phasers, natural gas SCADA, etc. (Resources aligned with Electric-Gas Working Group (EGWG)	Security Risks	https://www.nerc.com/comm/RSTC/Pages/default.aspx	Critical	Mitigate
V2-Reliability Guideline: DER Forecasting Practices and Relationship to DER Modeling for Reliability Studies	Guidance providing how forecasting practices are linked to DER modeling for reliability studies. DER forecasting practices are important for accurately representing the correct amount and type of DER, particularly at an aggregate level representation for BPS studies	Grid Transformation	https://www.nerc.com/comm/PC/Pages/System-Planning-Impacts-from-Distributed-Energy-Resources-Subcommittee-(SPIDERWG).aspx	High	Mitigate
White Paper: Review and Enhancement of Cybersecurity Maturity Metrics	Review and enhancement of metrics to track the capabilities and maturity of cybersecurity and its integration with BPS reliable operation on a broad level; considerations at a macro-scale, integrating all aspects of overall BPS security, reliability, and resilience. (Scope Activity Security Integration #3 and #5)	Security Risks		High	Monitor

Table A.1: Risk Registry Details					
Task Name	**Description**	**RISC Profile**	**External Link**	**Risk Registry Priority**	**Risk Staging**
White Paper: Risk-Based Physical and Cybersecurity Threats and their Impacts to BPS Reliability and Resilience	Guidance and reference materials providing information about possible security threats and ways that Registered Entities can plan, design, and operate the system to mitigate these potential risks. High-level recommendations for industry to consider in their own engineering and security practices for mitigating potential BPS reliability risks. Considerations for generation, transmission, and distribution-level risks as well as such as the natural gas infrastructure, and end-use (Scope Activity Security Integration #4)	Security Risks		Critical	Mitigate

Bulk Power System Situation Awareness Update

Action
Information

Background
NERC's Bulk Power System Awareness (BPSA) group acquires and disseminates timely, accurate and complete information regarding the current status of the bulk power system (BPS) and threats to its reliable operation, to enable the ERO Enterprise to effectively assure the reliability of the BPS. During major system disturbances, extreme weather, fires, hurricanes, physical events, and geomagnetic disturbances, etc. the BPSA group facilitates effective communications among the ERO Enterprise, industry and government stakeholders.

NERC BPSA, in collaboration with the E-ISAC and the ERO Enterprise Situation Awareness teams, is responsible for the following:

- Maintaining a near real-time situation awareness of conditions on the BPS;
- Notifying industry of significant BPS events that have occurred in one area, and which have the potential to impact reliability in other areas; and
- Maintaining and strengthening high-level communications, coordination, and cooperation with government agencies regarding real-time conditions.

The presentation at the August 12, 2021, MRC meeting is designed to provide a snapshot of the BPS and some of the reports/events/activities over the second quarter of 2021.