De-Carbonization / DER Report for NYSRC Executive Committee Meeting 2/12/2021

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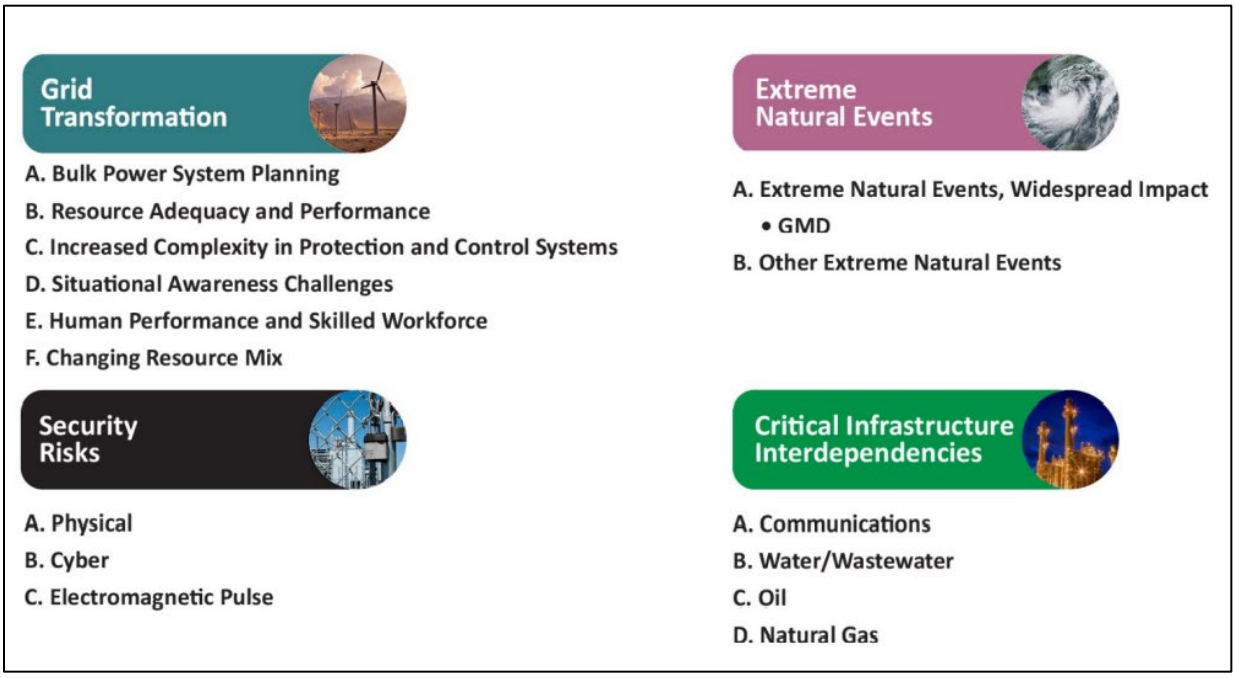
The January 2021 edition of the De-Carbonization / Distributed Energy Resources (DER) Report highlights the recent NERC Leadership Conference, and explores the NERC Risk Management Process. A new feature summarizes the month-over-month Energy Storage projects in the NYISO queue. The topics in this newsletter are covered in the following order:

- NERC 2021 Reliability Leadership Summit
- NERC Monthly Newsletter – January Issue, with Summary of Risk Management Process
- IEEE Power and Energy Magazine – January / February Issue covering the impact of DER and Renewables on Markets
- New Feature: NYISO Interconnection Queue Summary for Energy Storage Projects

The 2021 NERC Reliability Leadership Summit took the form of two 4-hour afternoon sessions on January 26th/27th. The NERC Announcement of the meeting can be found here, and a detailed Agenda with speaker info can be found here.

The Summit consisted of two keynote addresses (Cheryl LaFleur and Jacinda Woodward from TVA) and four panel discussions in key areas of risk, based on areas shown below, and covered in the 2019 ERO Reliability Risk Priorities Report, which covers much of the material and thought processes leading to this event. DERs and Renewables are both highly impactful and subject to impact within each of these categories.



An impressive roster of regulatory and industry executives participated in the event. The panelists touched on many areas, including the seven shown below:

1. The impact of Covid-19 on staffing, workload, and training
2. DER developers are more nimble than utilities or big generation – they do not need as many resources, or supporting capital, can respond quickly to changing market conditions that encourage participation and overwhelm the generation mix, without having the same level of understanding and commitment to the grid. Standards are critical to ensure their reliability.

3. The Solar Winds Incident is a red flag. Cyber Penetration should be viewed as inevitable, with adversarial advantage in that they just need to succeed once. Information sharing in the utility / regulatory community should be a priority to ensure a pro-active best defense.
4. Combine supply chain with Asset Management as best holistic approach to both.
   Fleet diversity should be minimized to ensure best management of spare equipment, although sometimes diversity could minimize impact of events.
5. The inter-relatedness of supporting critical systems - concerns for oil and gas industry.
6. Offsetting the challenge of Intermittency of Renewables (Low Carbon Alternatives, Batteries)
7. Examples of prior events and their impacts (Wildfires, Hurricanes, Metcalf Substation attack). Convergence of threats would be a worst-case scenario (Physical, Environmental, Cyber)

The January issue of the NERC monthly Newsletter can be found here. This issue provided a summary of the 6-step approach to Risk Management used by NERC for Grid Reliability, shown below.

1. Risk Identification and Validation – The Reliability and Security Technical Committee (RSTC) and Reliability Issues Steering Committee (RISC) undertake this process by using annual performance measurement activities, such as the annual State of Reliability report, long-term and seasonal reliability assessments as well as event analysis. They also maintain and update the risk registry, removing risks and adding others.
2. Risk Prioritization – The RSTC and RISC collaboratively complete the risk prioritization process annually. The Standing Committees Coordination Group (SCCG) serves as a coordination point to ensure broad alignment across the standing committees throughout all steps of the process.
3. Mitigation Identification and Validation – Appropriate RSTC subgroups are responsible for mitigation identification and validation thereby accounting for changing needs across the bulk power system. The RSTC provides updates to the RISC on the subgroup activities that are undertaken on a quarterly basis.
4. Deployment – ERO policies, procedures and programs are put into effect to mitigate risks. Depending on the risk remediation/mitigation activities selected, the RSTC, Standards Committee (SC) and Compliance and Certification Committee (CCC) are assigned certain activities.
5. Measurement of Success – The RSTC's annual performance measurement activities are used to measure success, and the RSTC provides updates to the RISC on the actions being taken on a quarterly basis. Strategies and plans are jointly evaluated for effectiveness, highlighting next steps.
6. Residual Risk – The RSTC and RISC monitor residual risk in coordination with each other. The CCC is responsible for measuring the effectiveness of developed Reliability Standards, as well as residual risk, and reports back to the RISC through its Compliance and Enforcement Implementation Plan and by using specific metrics used to measure effectiveness.

IEEE Power and Energy Magazine (IEEE PES Membership required): The **January / February Issue** has several articles related to the impact of DERs and Renewables on Market Development:

- Guest Editorial: The Growth of Renewables: Zero Marginal Cost Electricity Markets
- Markets for Efficient Decarbonization
- Market Design in an Intermittent Renewable Future
- Electricity Market of the Future
- Decarbonization of Electricity Systems in Europe
- Zero Marginal Cost Electricity Market Designs
- Renewable Energy Financing and Market Design

New Feature – Interconnection Queue Energy Storage Project Summary: Month to Month Tracking

The intent is to track the growth of Energy Storage projects in the NYISO Interconnection queue, looking to identify trends and patterns by zone and in total for the state. The information was derived from the Interconnection Queue on the NYISO Interconnection web site, based on summary reports published in November and December. Cells shaded green indicate an increase ,while cells shaded pink indicate a reduction.

11/30/2020						
Zone	Description	Project Count	Project Sum (MW)	Average Size (MW)	Min of SP (MW)	Max of SP (MW)
A	West	10	1,060	106	20	290
B	Genesee	3	41	14	10	20
C	Central	8	759	95	10	290
D	North	1	20	20	20	20
E	Mohawk Valley	3	29	10	4	20
F	Capital	1	20	20	20	20
G	Hudson Valley	9	797	89	20	200
H	Millwood	3	1,380	460	380	500
I	Dunwoodie	2	500	250	200	300
J	New York City	21	2,952	141	2	650
K	Long Island	32	3,985	125	20	500
Total		93	11,543	124	2	650

12/31/2020						
Zone	Description	Project Count	Project Sum (MW)	Average Size (MW)	Min of SP (MW)	Max of SP (MW)
A	West	10	1,060	106	20	290
B	Genesee	3	41	14	10	20
C	Central	8	759	95	10	290
D	North	1	20	20	20	20
E	Mohawk Valley	2	25	13	5	20
F	Capital	1	20	20	20	20
G	Hudson Valley	8	777	97	20	200
H	Millwood	3	1,380	460	380	500
I	Dunwoodie	2	500	250	200	300
J	New York City	21	2,952	141	2	650
K	Long Island	37	4,285	116	10	500
Total		96	11,819	123	2	650