

## Special Report Pandemic Preparedness and Operational Assessment: Spring 2020

### Executive Summary

The global health crisis has elevated the electric reliability risk profile due to potential workforce disruptions, supply chain interruptions, and increased cybersecurity threats. The electricity industry in North America is rising to the challenge, coordinating effectively with government partners, and taking aggressive steps to confront the threat to the reliability and security of the bulk power system (BPS). At this time, NERC has not identified any specific threat or degradation to the reliable operation of the BPS. To its credit, the industry continues to operate the BPS in a reliable and secure manner, the pandemic introduces a significant degree of uncertainty that is without precedent. Such uncertainty permeates an environment that is highly challenging even for the most prepared of industries. This report provides a bridge to the 2020 NERC Summer Reliability Assessment (SRA) and assesses the reliability considerations and operational preparedness of the BPS owners and operators during pandemic conditions in April and May 2020.

Because electricity is central to our society, a reliable and resilient BPS is a key feature in industry's response strategy to mitigate the impacts of the coronavirus (COVID-19). Nearly 400 million North Americans are depending on a reliable supply of electricity to support their way of life and the people, systems, and processes in place to support them during this unprecedented time.

For industry, this means preparing to operate with a significantly smaller workforce, an encumbered supply chain, and limited support services for an extended and unknown period of time. It also means that industry must be hyper vigilant to cybersecurity threats because a distracted workforce and remote working arrangements open up new attack vectors. Accordingly, the business continuity and pandemic plans developed by operating entities and designed to protect the people working for them to ensure proper support for critical electricity operations and infrastructure have been in use for several weeks and will be in place for the foreseeable future.

#### Increased Reliability Risk Profile by Operating Period

Spring 2020	Summer 2020	Long-Term
<ul style="list-style-type: none"> <li>• No specific reliability issue identified</li> <li>• Potential workforce disruptions</li> <li>• Supply chain interruption</li> <li>• Increased cyber security threat and monitoring</li> <li>• Different system conditions including lower demands and higher voltages.</li> <li>• System operators under sequester</li> <li>• Noncritical staff are remote</li> </ul>	<ul style="list-style-type: none"> <li>• Continued potential for workforce disruptions; support service disruption</li> <li>• Potential equipment and fuel supply chain disruptions</li> <li>• Deferred generation maintenance and other factors impacting unit availability</li> <li>• Generation in-service dates</li> </ul> <p>Note: a more granular assessment will be included in NERC's 2020 Summer Reliability Assessment</p>	<ul style="list-style-type: none"> <li>• Potential changes to generation and transmission in-service dates</li> <li>• Increased remote operation of non-critical staff</li> <li>• Changes to pandemic preparedness and operating plans based on lessons learned</li> </ul> <p>Note: a more granular assessment will be included in NERC's 2020 Long-Term Reliability Assessment</p>

Industry leaders are asking regulators and government agencies to take actions that include ensuring that testing and protective equipment are available to the electricity industry's essential workers.

The Electric Reliability Organization (ERO) Enterprise, which is comprised of NERC and the six Regional Entities, is coordinating with registered entities, regulators, and government officials to ensure a reliable BPS during this pandemic. The Federal Energy Regulatory Commission (FERC) and the ERO are using regulatory discretion and advising all registered entities that they will consider the impact of the coronavirus outbreak on compliance with certain Reliability Standards. As the pandemic unfolds, the ERO Enterprise is pursuing all available avenues to continue coordination with federal, state and provincial regulators and also working with industry to identify reliability implications and lessons learned.

Based on responses to NERC's level 2 alert issued on March 10, 2020, as well as continued coordination with system operators, NERC has determined that all Reliability Coordinators (RCs) have implemented their pandemic plans. NERC conducts weekly situational awareness calls with the RCs, who have generally activated their backup control centers, isolated key workers, and are maintaining a deep cleaning routine. At this time, NERC has not identified any specific threat or degradation to the reliable operation of the BPS.

Industry is in a period of heightened cyber risk due to a large contingent of industry employees working remotely. There is an increase in opportunistic actors attempting to take advantage of a workforce that is focused on the current crisis and using digital communication even more than usual; for example, threat actors have targeted remote work technologies, such as video conferencing services. The Electricity Information Sharing and Analysis Center (E-ISAC) continues to distribute information to its members and has posted communications and guidance from key government partners, several all-points bulletins, and other advisories on its Portal.<sup>1</sup>

## Introduction

As part of its mission, the ERO Enterprise continuously assesses industry preparations, identifies risk, and makes recommendations to address reliability issues and emerging risks. On February 5, 2020, the E-ISAC issued an all-points bulletin reminding members and partners to maintain vigilance of the spread of the virus, assess the potential impact to their supply chains, and to take the opportunity to review business continuity plans. NERC issued a NERC alert<sup>2</sup> on March 10, 2020, with six recommendations for industry to pursue related to the pandemic. The E-ISAC continues to perform its security activities with a heightened awareness surrounding pandemic related issues.

It is essential that the ongoing COVID-19 pandemic does not jeopardize BPS reliability and security. Like other critical infrastructures, the day-to-day operation of the BPS is highly dependent upon the availability of a uniquely trained and specialized workforce. In addition to the human elements, physical changes in electricity flows caused by societal behavioral changes, demand uncertainty, and the implementation of new operational procedures could impact the reliable and secure operation of the BPS. Lessons learned from other countries (see [Lessons Learned from the International Experience](#)) can inform the actions taken in North America to preserve reliable operations of the electric system.

This report provides a bridge to the 2020 NERC Summer Reliability Assessment (SRA) and assesses the reliability considerations and operational preparedness of the BPS owners and operators during pandemic conditions (April–May 2020).<sup>3</sup> Furthermore, the NERC Event Analysis department is monitoring the pandemic response and intends to publish a lessons learned document upon returning to normal operations. A particular focus will be placed on

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<sup>1</sup> <https://www.eisac.com/>

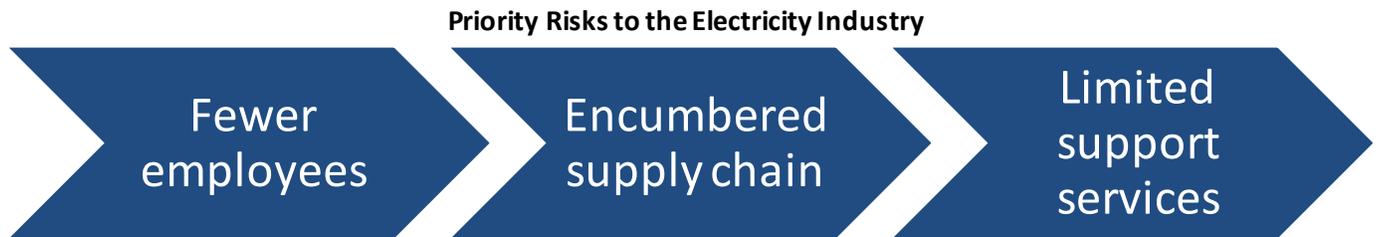
<sup>2</sup> [https://www.nerc.com/pa/rrm/bpsa/Alerts%20DL/NERC\\_Alert\\_R-2020-03-10-01\\_COVID-19\\_Pandemic\\_Contingency\\_Planning.pdf](https://www.nerc.com/pa/rrm/bpsa/Alerts%20DL/NERC_Alert_R-2020-03-10-01_COVID-19_Pandemic_Contingency_Planning.pdf)

<sup>3</sup> NERC's SRA, issued annually in June, reports on issues affecting the reliability of the North American BPS for the upcoming summer (June–September) season.

preparations for energy management, transmission and generator control centers, operations, maintenance, staff availability, and security.

### **Description of Pandemic Risks to BPS Operations**

Pandemic risk differs from many of the other threats facing the BPS because it is a “people event.” The fundamental risk is the loss of staff critical to operating and maintaining the BPS such that firm loads could no longer be served safely. The potential exists for severe workforce shortage due to personal illness, widespread fear of contracting the illness, family issues (e.g., family member illness, lack of day care, school closings, elderly care), or government imposed restrictions. Workforce availability constraints could extend the time necessary to respond to abnormal system conditions, troubleshoot and repair damaged facilities, preclude necessary preventive and corrective maintenance, prolong outage restoration, and possibly reduce reserve margins if generating facilities are forced off-line.



Pandemic-driven workforce constraints could affect the ability of organizations to provide mutual assistance; however, NERC’s recent alert responses indicated a majority would continue to support mutual aid requests. Furthermore, state local, or even cross-border imposed movement restrictions could impede the ability to move both mutual assistance and materials into the impacted area. New logistical challenges, such as hotel/housing accommodations and food provisions, need to be considered; this may be more limited under pandemic constraints.

### **Progression of the COVID-Pandemic Response**

In January 2020, China reported a large population of Wuhan, the capital city of central China’s Hubei province, infected with COVID-19. Over the course of the next two months, the virus spread to almost every country worldwide. Several hotspots were identified in the United States in February and electric utilities began preparations for possible abnormal operating conditions.

The Electricity Subsector Coordinating Council (ESCC) activated regular executive-level calls with federal government senior officials in early March and developed five initial working groups, staffed by industry, E-ISAC, and government volunteers, to address operational and tactical challenges to anticipate and mitigate these challenges before impacting reliability. The ESCC is producing and continuously updating a publicly available resource guide to share planning considerations and challenges.

On March 11, 2020, the World Health Organization declared COVID-19 a worldwide pandemic.

### **Electric Industry Pandemic Response: Spring 2020**

As the coronavirus began widespread infection in February 2020, registered entities in North America began to review and update their pandemic plans. In March 2020, the ESCC issued the first version of the *ESCC Resource Guide*<sup>4</sup> as a resource for electric power industry leaders to guide informed localized decisions in response to the COVID-19 global health emergency; it is updated on a regular basis as new approaches, planning considerations, and issues develop. The guide highlights data points, stakeholders, and options to consider in making decisions about operational status

<sup>4</sup> <https://www.electricitysubsector.org/>

while protecting the health and safety of employees, customers, and communities. Sharing experiences and expertise helps users of the guide to make independent, localized decisions aimed at reducing negative impacts to the continent’s power supply during the COVID-19 global pandemic.

Historically, NERC has collaborated with governmental entities to publish reports critical to the reliability of the BPS. In 2010, NERC and the Department of Energy (DOE) jointly published the *High-Impact Low-Frequency Event Risk to the North American Bulk Power System* report (HILF report).<sup>5</sup> The HILF report identified three specific recommendations to address pandemic risk and supportive actions that have been taken by industry and policy makers.

Recommendations from the HILF Report (2010)	Electric Industry Actions and Implementation (2020)
<p>NERC and the U.S. DOE should work with the U.S. Department of Health and Human Services and appropriate government authorities in Canada to ensure critical electric sector employees are given priority with respect to the distribution of vaccines and antiviral medication and the ability to travel in the event of government-imposed travel restrictions.</p>	<p>The E-ISAC staff support the ESCC’s COVID-19 Tiger Team working groups. These working groups provide the energy sector input to the Department of Homeland Security (DHS) Cybersecurity and Infrastructure Security Agency’s (CISA’s) <i>Essential Critical Infrastructure Workforce</i> guidance document.<sup>6</sup> This federal guidance has been used across the industry to advocate for prioritized access to employee testing and personal protective equipment (PPE) for the most critical workers. Some entities still report limited access to PPE. Considerations for PPE may be needed for future pandemics. The ability to travel during government-imposed travel restrictions either have or are being addressed.</p>
<p>NERC, the U.S. DOE, and appropriate government authorities in Canada should identify the kinds of information needed from the sector to effectively monitor critical workforce levels across the electric sector during a pandemic.</p>	<p>The <i>ESCC Resource Guide</i>, the E-ISAC and related government websites (DOE, DHS CISA, and CDC) address numerous resource topics including control center continuity, access to restricted areas, supply chain, mutual aid/assistance, generation operational continuity, information technology (IT) and telecommunications, and public affairs DHS CISA developed the <i>Essential Critical Infrastructure Workforce</i> document in coordination with all ESCC participants, including NERC. This document was updated and provided guidance to policymakers and stakeholders in defining essential workers as well as additional guidance on electricity essential workers in the <i>ESCC Resource Guide</i>.</p>
<p>NERC, working with its stakeholders, should develop a proposal for relaxing regulatory requirements during a pandemic.</p>	<p>NERC and FERC issued a joint statement on March 18, 2020, outlining the considerations for compliance with NERC Reliability Standards as well as postponing audits, certifications, and other on-site audit activities.<sup>7</sup> On April 6, 2020, NERC filed a motion<sup>8</sup> with FERC to defer the implementation of seven Reliability Standards that have effective dates or phased-in implementation dates in the</p>

<sup>5</sup> [https://www.nerc.com/pa/Stand/Geomagnetic%20Disturbance%20Resources%20DL/HILF\\_112012.pdf#search=HILF](https://www.nerc.com/pa/Stand/Geomagnetic%20Disturbance%20Resources%20DL/HILF_112012.pdf#search=HILF)

<sup>6</sup> <https://www.cisa.gov/publication/guidance-essential-critical-infrastructure-workforce>

<sup>7</sup> <https://www.nerc.com/news/Pages/FERC,-NERC-Provide-Industry-Guidance-to-Ensure.aspx>

<sup>8</sup> <https://www.nerc.com/news/Headlines%20DL/Motion%20to%20Defer%20Implementation%20of%20Reliability%20Standards.pdf>

Recommendations from the HILF Report (2010)	Electric Industry Actions and Implementation (2020)
	second half of 2020. <sup>9</sup> FERC has also announced additional measures to relax enforcement for a host of regulations, including a halt to any new Office of Enforcement audits until the end of July. <sup>10</sup>

Lessons learned through past and simulated events, such as GridEx, have helped prepared the electric industry for dealing with the current pandemic response. Specifically, these simulated drills and table-top exercises have provided a blueprint to ensure that business continuity procedures are up-to-date and comprehensive. The exercises also provide a productive means of coordinating with government agencies.

To both preserve BPS reliability and support the pandemic mitigation strategies, industry leaders are asking regulators and government agencies to take actions that include ensuring the following:

- COVID-19 testing is available and streamlined for essential personnel who work in shift environments (i.e., control center personnel).
- Relief from certain regulatory obligations is obtained to ensure the continued availability of control room operators.
- Travel restrictions for the general public exclude personnel essential to the reliable operation of control centers.
- Supplies for cleaning/hygiene are readily available.

In some cases, more attention and action is needed from government agencies on these strategies. For example, the acquisition of COVID-19 tests by operating entities is necessary in order to implement proper operator sequestration. Additionally, system operators have experienced challenges in obtaining testing kits. Maintaining adequate supplies of PPE also remains a priority. The *ESCC Resource Guide* covers these challenges and presents elements of potential solutions. Additionally, the ESCC secretariat continues to work with DOE, DHS, and other appropriate federal agencies to identify testing solutions.

**ERO Recommendation to Industry: COVID-19 Pandemic Contingency Planning<sup>11</sup>**

NERC issued a recommendation to industry titled “COVID-19 Pandemic Contingency Planning” that provided planning recommendations and guidance pertaining to gathering information from entities regarding pandemic preparations. Recommendations include the following actions:

- Maintain suitable situational awareness of the current status of the spread of COVID-19 and credible future estimates of its spread and impacts
- Reinforce good personal hygiene practices across the workforce and employ deep cleaning regimens to critical operating facilities
- Review and update existing business continuity plans to ensure they are adequate to mitigate the direct impacts of a pandemic outbreak in the organization’s footprint that creates staffing constraints for critical reliability and business functions

<sup>9</sup> <https://www.nerc.com/news/Pages/NERC-Files-Motion-to-Defer-Implementation-of-Seven-Reliability-Standards-Due-to-COVID-19.aspx>

<sup>10</sup> <https://www.ferc.gov/media/news-releases/2020/2020-2/PL20-5-000.pdf>

<sup>11</sup> [https://www.nerc.com/pa/rrm/bpsa/Alerts%20DL/NERC\\_Alert\\_R-2020-03-10-01\\_COVID-19\\_Pandemic\\_Contingency\\_Planning.pdf](https://www.nerc.com/pa/rrm/bpsa/Alerts%20DL/NERC_Alert_R-2020-03-10-01_COVID-19_Pandemic_Contingency_Planning.pdf)

- Assess the organization’s resilience against disruption to the availability of critical components and materials as well as support resources with supply chains originating or traversing significantly impacted regions globally
- Assess the need to adjust planned construction and maintenance activity schedules to prioritize the most important projects
- Anticipate and prepare for coronavirus-themed opportunistic social engineering attacks

Key takeaways from the alert include the following observations:

- Pandemic planning is pervasive across the registered entities.
- The majority of registered entities have reviewed pandemic staffing requirements.
- A large majority of registered entities have reviewed supply chain needs.
- More than half of registered entities said they would support mutual aid requests.
- Entities identified risks (e.g., staffing shortages, material shortages, ability to complete major construction and maintenance projects) that could lead to constraints over the summer.

Based on the results of the alert, some organizations did not have a pandemic plan. NERC initially provided a redacted plan to these organizations based on materials shared by the U.S. DOE. With leadership of the NATF and supported by the ERO, FERC, and DOE, an enhanced version of this plan is currently under development; it will be available for open distribution to the whole industry.

### **Posture of the Reliability Coordinators**

All RCs have implemented their pandemic plans. At this time, NERC has not identified any specific threat or degradation to BPS reliability due to the ongoing health crisis. As the COVID-19 pandemic progresses, NERC’s Bulk Power System Awareness department continues to hold weekly calls with the RCs in North America. These calls provide a forum for RCs to share challenges and solutions and coordinate their activities. The figure below shows proactive steps RCs and other control room operators are taking to mitigate anticipated pandemic impacts. RCs are coordinating amongst each other and with natural gas suppliers and interstate pipelines to maintain awareness of the activities being undertaken, sharing planning considerations/lessons learned, discussing concerns, and coordinating operations to mitigate potential adverse impacts.

 <p><b>Access Considerations and Sanitization</b></p> <ul style="list-style-type: none"> <li>• No visits to control rooms</li> <li>• All non-essential staff are working from home</li> <li>• Increasing cleaning frequency</li> <li>• Focus on personal hygiene</li> <li>• Covering keyboards with plastic covers and removing unused furniture</li> <li>• Providing personal computer equipment</li> <li>• Maintaining sterile back-up control center</li> </ul>	 <p><b>Screening and Testing</b></p> <ul style="list-style-type: none"> <li>• Health screening for staff prior to entering the control room</li> <li>• Using self-screening test for operators</li> <li>• Using rapid test kits, though limited availability</li> <li>• Working with local hospitals and governments to expedite testing, particularly for sequestration operations</li> </ul>	 <p><b>Shift Controls and Sequestration</b></p> <ul style="list-style-type: none"> <li>• Limiting cross-contamination between control centers</li> <li>• Encouraging staff to limit time outside control room</li> <li>• Adjusting shift schedules to balance operator experience</li> <li>• Providing alternate work locations for operators that have been exposed but are asymptomatic and still able to work</li> <li>• Using temporary additional back-up control centers</li> <li>• Limiting risky behaviors and activities off-shift</li> </ul>	 <p><b>Operational Changes</b></p> <ul style="list-style-type: none"> <li>• Providing training to employees and retirees for shift augmentation</li> <li>• Increasing cyber security awareness activities</li> <li>• Rescheduling non-essential facility outages</li> <li>• Increasing communications</li> <li>• Identifying demand changes and uncertainties</li> <li>• Exploring virtual control centers on their operator simulators</li> <li>• Increasing outreach to EPRI, NATF, and NAGF</li> </ul>
 <p><b>Guidance for Control Room Continuity</b></p>			

While some entities have already sequestered their system operators, and others have plans to do so if necessary, there is hesitation to sequester employees without testing. Testing capability is important to implement an effective sequestering plan because it ensures that all operators are healthy and are not carriers prior to being sequestered as an operating team.

## **BPS Operational Planning Considerations for 2020 Summer Season**

The industry engages in extensive preparations for peak operating seasons. The pandemic response to COVID-19 presents certain challenges that are being addressed for the upcoming summer.

### **Transmission**

Industry is continually evaluating transmission outages to ensure the reliable and secure operation of the BPS. Pandemic response and mitigation plans at national, state, provincial, and local levels can impact transmission maintenance efforts by disrupting the flow of personnel and supply chains. Right of way (ROW) maintenance could be negatively impacted and thus increase the risk of wildfires. Many have taken some action to limit the work being done on the BPS to only work that is absolutely necessary. Ending outages early, where possible, has been another strategy to ensure availability of resources.

## Generation

A majority of generation maintenance occurs in the shoulder months during spring and fall. Generation resources could face increased forced outages if maintenance activities are deferred or limited by the pandemic. In addition to managing the revised outage schedule across the generation fleet, outage rescheduling should also consider cross-sector coordination (e.g., with the natural gas industry). The *ESCC Resource Guide* on “Generation Operational Continuity” has a number of planning considerations, mitigations, checklists, and other valuable resources for the generation community.

In 2020, reactors at 56 nuclear power generation sites in the United States are scheduled for refueling; these refueling operations could be at risk if the virus were to spread amongst the workers since there are such large groups working on those projects. Nuclear generation facilities are considered essential infrastructure and hundreds of employees are necessary to complete refueling demands. Often these workers are contractors and go from one refueling outage to the next; therefore, moving outages can have a cascading impact to the subsequent plants in the outage schedule. Through the *Guidance on the Essential Critical Infrastructure Workforce* document<sup>12</sup> and engagement with state, provincial, and local officials, DOE and DHS are supporting efforts to ensure these critical workers can resume work.

### Reliability Considerations

- Increased uncertainty in demand projections and daily use
- Potential for increased forced outages due to deferred maintenance, staff unavailability, or limited supplies and/or fuel
- Higher than usual operating voltages
- Light load conditions
- Reverse power flow and increased penetration levels of distributed energy resources (DERs)
- Potential for unloaded under frequency/voltage load shedding schemes due to industrial and commercial users that may not be online

## System Operations

Should pandemic restrictions persist through the summer, system operators will have to manage, among other challenges, potential generation unavailability, uncertainties in demand, the increased impact of DERs on load profiles, distribution reverse power flows, higher than usual operating voltages, and minimum demands at all-time lows. In addition, storm and major disturbance and outage response may be limited and/or delayed. Operational planners may need to consider bringing online tools to identify and mitigate low inertia conditions, new oscillatory modes, and light loading conditions (e.g., high voltage operations and backflow).

In high DER penetration areas (e.g., California, North Carolina, and increasingly the Northeast) minimum loads and reverse power flows from the distribution system can cause some challenges for system operators. With lower amounts of BPS generation on the system, DERs during especially sunny days will have a considerably higher level of penetration of the total resources serving load. The recalibration and assessment of the performance of load forecasting models is currently the focus of the load forecasters.

Another consideration is the potential reduction in industrial and commercial loads. Operators will need to prepare the system for these facilities to be off-line. This potential lack of industrial and commercial load could greatly alter any under frequency or under voltage load shedding plans they have that would typically rely on tripping these loads as well as demand response programs that may be relied on to support emergency operations.

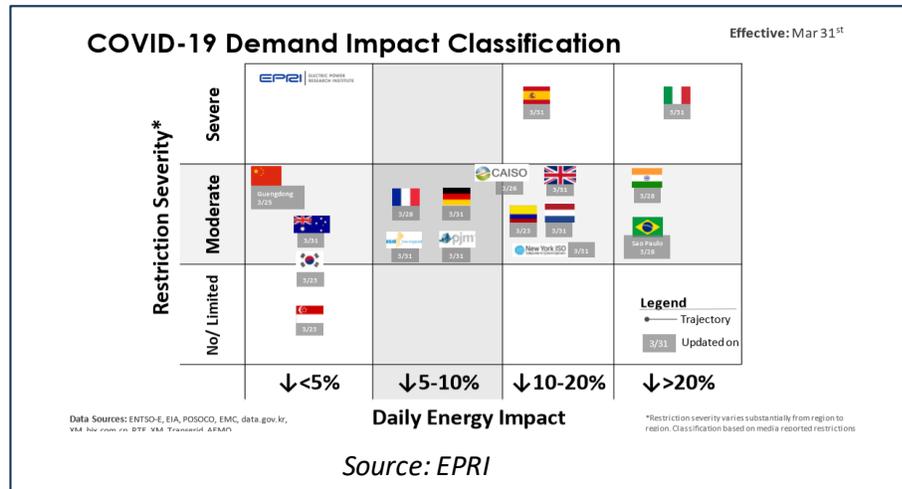
<sup>12</sup> [https://www.cisa.gov/sites/default/files/publications/Version\\_3.0\\_CISA\\_Guidance\\_on\\_Essential\\_Critical\\_Infrastructure\\_Workers\\_3.pdf](https://www.cisa.gov/sites/default/files/publications/Version_3.0_CISA_Guidance_on_Essential_Critical_Infrastructure_Workers_3.pdf)

## Lessons Learned from the International Experience

Operational impacts and lessons learned from outside North America can serve as early warning indicators to North American system operators. The Electric Power Research Institute (EPRI) has been active in sharing this information and provides periodic updates to electricity entities in the United States and Canada.

Key observations and considerations include the following:

- Pandemic and emergency mitigation actions to support staffing and staffing practices, including sequestration and remote capabilities
- Corrective measures implemented by transmission operators (e.g., manual actions and tap changes)
- Difficulties with transmission outage coordination and cancelled maintenance
- Reverse power flow due to solar photovoltaic, effects on under-frequency and voltage protection, and lower short-circuit current
- Changed patterns of congestion and ancillary services needs and availability
- Shifts in availability of industrial loads for demand-side management
- Electricity demand down 5–10% compared to typical demand for this time of year and 10–25% down in areas where restrictions are highest



NERC’s European partners at the European Network of Transmission System Operators for Electricity (ENTSO-E) and the European Commission report the following:

- Extraordinary measures taken by governments (e.g. restrictions on mobility) have led to a decrease of electricity consumption.
- In all countries, the electricity market is functioning normally. All transmission service operators are able to manage core activities to ensure safety on the grid (e.g. balancing, frequency control). Major challenges largely concern staff and staff mobility (e.g. control rooms).
- There have been no concerns of electricity supply deficits—not even in the most affected countries, such as Italy and Spain.

In addition, EPRI has found many entities proactively engaging the wider public to assure continued electricity operation and contingency planning, including the following:

- [Statnett Norway](#): The only TSO being monitored to publicly report a case of COVID-19 among their staff
- [Swissgrid](#): Publicly state they are monitoring (temperature) of staff for fever
- [RTE France](#): Launched their official business continuity plan as of Monday, March 16
- [National Grid UK ESO](#): Have posted a blog entry by the director explaining the response
- [Red Eléctrica Spain](#): Very active on LinkedIn with news updates to public; operating across three autonomous control centers, each capable of independently controlling full system; have deployed hygiene teams to work with staff
- [AEMO Australia](#): Implemented a full pandemic response plan
- [50hertz Germany](#): Implemented severe restrictions on contact between employees and with other groups of people as well as additional measures that restrict access to operating facilities

## ERO Enterprise Business Continuity

As of late February 2020, the ERO Enterprise began reviewing their business continuity plans to ensure that they would continue to operate in the event of a pandemic. On March 6, NERC held a business continuity pandemic preparedness drill with more than 90% of NERC staff participating remotely. This drill provided confidence that the NERC infrastructure would function if it became necessary to close the office.



By early March, NERC and the Regional Entities began assessing travel, on-site visits, and in-person meetings. Many meetings were converted to webinars and travel restrictions were put into place. On March 11, following the advice of several government agencies and the example of many registered entities and stakeholder groups, NERC and the Regional Entities eliminated all travel and put in place an expanded work from home policy.<sup>13</sup> The ERO Enterprise has strong capabilities to work remotely, and the ERO Enterprise business is able to continue through the perseverance and commitment of our employees to our mission.

NERC staff worked with its industry stakeholder committees to reschedule in-person meetings to web and teleconference meetings. NERC also extended data submission deadlines on all of its Section 1600 data systems, such as the Generation Availability Data System and the Transmission Availability Data System.

## Compliance Operations

On March 18, FERC and NERC issued a joint statement<sup>14</sup> that highlighted the intended use of regulatory discretion regarding personnel certifications and periodic requirements embedded in the NERC Reliability Standards as well as the temporary suspension of on-site audits. In addition to notifying all stakeholders of this action, each Regional Entity is working on a case-by-case basis to consider oversight activities that can successfully be completed off-site.

<sup>13</sup> [https://www.nerc.com/news/Headlines%20DL/Coronavirus%20Impacts%2011MAR20\\_final.pdf](https://www.nerc.com/news/Headlines%20DL/Coronavirus%20Impacts%2011MAR20_final.pdf)

<sup>14</sup> <https://www.nerc.com/news/Headlines%20DL/FERC%20NERC%20031820%20final.pdf>

NERC also filed a request with FERC that the Commission defer the implementation of seven Commission-approved Reliability Standards that have effective dates or phased-in implementation dates in the second half of 2020.<sup>15</sup> The ERO's focus is to continue to perform the reliability and security mission but also recognize the priority of industry is to keep the lights on. With added strain on an already strained workforce, the ERO Enterprise will continue to seek out processes and requirements that can be deferred and/or limited without increasing risk to BPS operations.

### **Regional Entity Preparations**

As the entire ERO Enterprise deals with the pandemic, the Regional Entities work closely with NERC to monitor the responses from the NERC alert on COVID-19 pandemic contingency planning.<sup>16</sup> Regional Entities are specifically contacting registered entities in their footprint that indicated they did not have a pandemic plan in their response to the NERC alert; the purpose of these communications is to offer any assistance that may be needed in developing such a plan. Regional Entities maintain contact with the registered entities in their footprints on a regular basis. Some Regional Entities are also coordinating with the natural gas industry to support better shared situational understanding between the interdependent industries.

### **NERC E-ISAC Pandemic Operations**

The E-ISAC is also working remotely until further notice and is currently maintaining full staffing levels in all sections to include analysis, intelligence, operations, and stakeholder engagement. All technology systems remain operational. The E-ISAC is also leveraging web conferencing facilities, encrypted communications, and internal collaboration platform to communicate, collaborate, and maintain situational awareness.

The E-ISAC is fully engaged in the industry's response to COVID-19. The E-ISAC communicates regularly with partners at DOE, FERC, and DHS, and staff actively support the ongoing updates of the *ESCC Resource Guide*.

The Cybersecurity Risk Information Sharing Program (CRISP) platform remains fully operational and the E-ISAC has established a communication protocol with Pacific Northwest National Laboratory (PNNL).

The most critical function, Watch Operations, continues to be fully staffed with 18 people and is currently operating on a 24/7 basis. The E-ISAC established a two-week staffing schedule and updates it as required.

A summary of Watch Operations' functions during this period include the following:

- Staffing 24/7 using members from security operations, including cyber and physical security analysts
- Distributing a daily situational awareness report to the E-ISAC staff
- Posting timely information on the E-ISAC Portal from members, government, and vendors
- Providing coordination, communication, and incident response services
- Coordinating CRISP operations with PNNL to maintain access to time-sensitive CRISP information
- Developing and refining policies and procedures for 24/7 operations
- Conducting staff training, drills, and exercises

Watch Operations has developed a plan to mitigate the impact of absenteeism and, if necessary, will undertake the following actions to maintain the services it provides:

- Reassign former Watch Operations employees and consider shift reductions

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<sup>15</sup> <https://www.nerc.com/news/Headlines%20DL/Motion%20to%20Defer%20Implementation%20of%20Reliability%20Standards.pdf>

<sup>16</sup> [https://www.nerc.com/pa/rrm/bpsa/Alerts%20DL/NERC\\_Alert\\_R-2020-03-10-01\\_COVID-19\\_Pandemic\\_Contingency\\_Planning.pdf](https://www.nerc.com/pa/rrm/bpsa/Alerts%20DL/NERC_Alert_R-2020-03-10-01_COVID-19_Pandemic_Contingency_Planning.pdf)

- Acquire contract resources from current staffing firms
- Leverage other ISACs
- Evaluate proposals from managed service providers

### **Cybersecurity Information Sharing**

The E-ISAC continues to distribute information to its members and has posted communications and guidance from key government partners, several all-points bulletins, and other advisories on its Portal. Industry is in a period of heightened cyber risk due to a large contingent of industry employees working remotely. There is also an increase in opportunistic actors attempting to take advantage of the situation. Members are encouraged to check in regularly to receive updates. The E-ISAC also continues to provide information regarding emerging cyber threats. These include malicious attacks on conferencing and remote access infrastructure intended to disrupt operations as well as disinformation and spear phishing campaigns attempting to harvest credentials and other information. Members are encouraged to actively share information regarding threats and other malicious activities with the E-ISAC to enable broader communication with other sector participants and government partners.

### **Conclusion**

The electric power industry in North America is rising to the challenges presented by the pandemic, coordinating effectively with government partners, and taking aggressive steps to confront the elevated threats to reliability and security of the BPS in an uncertain environment. Governmental authorities have listened and are continuing to provide support to electric industry operators. However, as pandemic mitigation and containment strategies continue, prolonged periods of operator sequestration and deferred maintenance on equipment increases the industry's risk profile and could exacerbate impacts to the BPS during the summer months and potentially over the longer-term horizon.

The ERO Enterprise will continue monitoring the BPS during this unprecedented period. The ERO's 2020 Summer Reliability Assessment, to be published in June, will provide further detail on the availability of capacity resources, expected peak demands, and any potential reliability issues during the upcoming summer period. As the industry returns to normal operations, the ERO will identify lessons learned and recommendations for improved practices.