ESCC

Electricity Subsector Coordinating Council

Assessing and Mitigating the Novel Coronavirus (COVID-19)

A RESOURCE GUIDE

Version 11: Updated July 7, 2021

Planning for a health emergency, such as the novel coronavirus (or COVID-19), poses unique challenges from other business continuity contingencies. It requires businesses to prepare to operate with a significantly smaller workforce, a threatened supply chain, and limited support services for an extended period at an unknown date in the future.

The business continuity and pandemic plans developed by investor-owned electric and/or natural gas companies, public power utilities, and electric cooperatives are designed to protect the people working for them and to ensure energy operations and infrastructure are supported properly throughout an emergency.

This document is a resource for electric power industry leaders to guide informed localized decisions in response to the COVID-19 global health emergency. It highlights data points, stakeholders, and options to consider in making decisions about operational status, while protecting the health and safety of employees, customers, and communities.

Sharing practices and expertise will allow participants to make better-informed independent and localized decisions that will help reduce the negative impacts to the country's electric power supply during the COVID-19 pandemic. The Electricity Subsector Coordinating Council (ESCC) and its members are committed to full compliance with all applicable federal and state antitrust laws. The activities of the ESCC are not intended, and do not constitute an agreement, to influence markets or prices for goods or services. This document will evolve as public health officials and other government sources provide additional data and more is known about COVID-19.

Table of Contents

Introduction from the ESCC Leadership

The Electricity Subsector Coordinating Council (ESCC) proudly represents the investor-owned electric companies, public power utilities, and electric cooperatives that continue to demonstrate unprecedented resilience, adaptability, and commitment in the face of extreme adversity, including the COVID-19 pandemic. Whether facing man-made or natural challenges, the members of the ESCC and our partners in government and industry stand ready to respond.

The industry's ongoing response to the COVID-19 pandemic represents the most recent example of our commitment to sustaining the North American bulk power system. The rapid and unpredictable spread of the virus presents a unique challenge – how to ensure the supply of electricity and natural gas to the lifeline sectors, while safeguarding communities, customers, as well as our workforce and their families. We recognize that as Version 10 of this Guide is published, the pandemic is still presenting a severe health emergency and creating operational challenges for critical infrastructure owners and operators.

The industry is meeting these challenges by working tirelessly to maintain operations and contribute to efforts to minimize the spread of COVID-19. As the pandemic evolves, the industry has demonstrated and will continue to show great flexibility in responding and adhering to evolving scientific and federal guidance on response and control procedures. The scope of the industry's response is reflected in this Resource Guide, including guidance and mitigation measures. As detailed herein, during the crisis, the industry has succeeded in:

- Ensuring the continued supply of electricity to other critical infrastructure sectors, including healthcare and research facilities working to battle the pandemic on the front lines.
- Building new partnerships across the U.S. government, including at the U.S. Department of Health and Human Services and U.S. Centers for Disease Control and Prevention.
- Designating the industry's workforce as Essential Critical Infrastructure Workers in U.S. Department of Homeland Security guidance, highlighting the need for prioritized access to personal protective equipment, testing supplies, and vaccines.
- Responding simultaneously to multiple natural disasters impacting wide areas of the United States while adhering to public health guidelines for the protection of workers and local communities.
- Adapting safe and effective mutual assistance measures between companies and organizations throughout the pandemic.

This Guide has been updated regularly using the best available scientific and federal information. Going forward, we believe this document can continue to inform approaches to, and calibrate preparation for, future health crises. In the coming years, our industry will confront a range of emerging notice and no-notice contingencies. Each will require different capabilities, skills, and resources from the ESCC, the industry, and many engaged stakeholders. We believe the response to any of these future contingencies will benefit from what we are learning and experiencing during the COVID-19 pandemic.

ESCC Executive Committee

Kevin Wailes, Lincoln Electric System
Tom Fanning, Southern Company
Duane Highley, Tri-State Generation and Transmission Association
Joy Ditto, American Public Power Association
Thomas R. Kuhn, Edison Electric Institute
Jim Matheson, National Rural Electric Cooperative Association

ESCC COVID-19 Tiger Team Members

Note: These lists credit those engaged at the actual time of Tiger Team activity and may not reflect the participants' current employers.

**Industry and Secretariat Leads are italicized. Government representatives are included as members.*

Accessing Quarantined & Restricted Environments

First Name	Last Name	Company
Tom	Moran	All Hazards Consortium
Kimberly	*Denbow*	*American Gas Association*
Stuart	Saulters	American Public Gas Association
Nathan	*Mitchell*	*American Public Power Association*
Mary	Palkovich	CMS Energy
Stu	Smith	Consolidated Edison
Matt	Sniffen	Consolidated Edison
Anna	Ballance	Edison Electric Institute
Pat	*Hart*	*Edison Electric Institute*
Hailey	Siple	Edison Electric Institute
Adrienne	*Lotto*	*New York Power Authority*
Michael	Schmid	Public Service Enterprise Group
John	Spellman	Puget Sound Energy
Sean	Plankey	U.S. Department of Energy
Joe	Garmon	Wabash Valley Power Alliance
Susan	Sosbe	Wabash Valley Power Alliance
Curtis	Taylor	Wabash Valley Power Alliance

Control Center Continuity

First Name	Last Name	Company
Mike	Lewis	Ameren
Brian	Ripperda	Ameren
Kimberly	Denbow	American Gas Association
Jack	Cashin	American Public Power Association
Nathan	Mitchell	American Public Power Association
Sam	*Rozenberg*	*American Public Power Association*
Dean	Thompson	City Utilities of Springfield, MO
Joi	Harris	DTE Energy
Kaitlin	Brennan	Edison Electric Institute
Hailey	*Siple*	*Edison Electric Institute*
Bill	Zuretti	Electric Power Supply Association
Dean	Desautels	Eversource
Mike	Zappone	Eversource
Lee	Anderson	Lincoln Electric System
Paul	Crist	Lincoln Electric System
Laurie	Gregg	Lincoln Electric System
Trish	Owen	Lincoln Electric System
Glen	Aichinger	National Grid
Randy	Crissman	New York Power Authority
David	Hislop	PJM Interconnection

Jonathon	Monken	PJM Interconnection
Tom	*O'Brien*	*PJM Interconnection*
Ron	Wharton	Public Service Enterprise Group
Chris	Campbell	Salt River Project
Michael	Fish	Salt River Project
Chris	Janick	Salt River Project
Herbert	Nadler	Smart Electric Power Alliance
Danny	Johnson	Southwestern Power Administration
Mike	Wech	Southwestern Power Administration
Keith	Works	Southwestern Power Administration
Pat	Hoffman	U.S. Department of Energy
David	Howard	U.S. Department of Energy
Kevin	*Howard*	*Western Area Power Administration*
Roger	Hargreaves	Xcel Energy
Bob	Staton	Xcel Energy

Generation Operational Continuity

First Name	Last Name	Company
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Stuart	Sautlers	American Public Gas Association
Sam	*Rozenberg*	*American Public Power Association*
Charlie	Gates	Calpine
Kathy	Curtis	Dominion Energy
Josh	Skelton	Dominion Energy
Bill	Zuretti	Electric Power Supply Association
Matthew	*Duncan*	*Electricity Information Sharing and Analysis Center*
Barry	Boswell	Luminant
Ben	Elliot	Luminant
Scott	Tomashefsky	Northern California Power Agency
Kevin	Mixon	NRG Energy
Stephanie	Monzon	PJM Interconnection
Joe	Tarantino	Sacramento Municipal Utility District
Bill	Alkema	Salt River Project
Jim	*Heilbron*	*Southern Company*
Todd	Jonas	Tenaska
Daniel	Rabon	U.S. Army Corp. of Engineers
Max	Spiker	U.S. Bureau of Reclamation

Mutual Assistance Preparation

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Michael	Kelly	Alabama Rural Electric Association of Cooperatives
Paul	Lee	AltaLink
Chris	Potter	AltaLink
Julie	Kennedy	American Electric Power
Randy	Knight	American Electric Power
Sam	*Rozenberg*	*American Public Power Association*
Mike	Miller	Bonneville Power Administration
Joelle	Lancaster	Canadian Electricity Association

Ed	Scott	CenterPoint Energy
James	Lass	CLECO
Lisa	Douglas	Consumers Energy
Jim	Wade	Consumers Energy
Alan	Bradshaw	Dominion Energy
Evermary	Hickey	Duke Energy
RuDon	Showers	Duke Energy
Scott	Aaronson	Edison Electric Institute
Anna	Ballance	Edison Electric Institute
Pat	Hart	Edison Electric Institute
Wally	*Mealiea*	*Edison Electric Institute*
Laura	Schepis	Edison Electric Institute
Jon	Beasley	Electric Cities of Georgia
Kenny	Roberts	ElectriCities of North Carolina
Louis	*Dabdoub*	*Entergy*
Willie	Wilson	Entergy
Carol	Baxter	Evergy
Mike	Zappone	Eversource
Michelle	Herschel	Florida Electric Cooperative Association
Amy	Zubaly	Florida Municipal Electric Association
Matt	Moxley	Florida Power & Light
Jon	Elkins	Indiana Association of Electric Cooperatives
Ricky	Erixton	Jacksonville Electric Authority
Alan	McElroy	Jacksonville Electric Authority
Lisa	Hayes	Los Angeles Department of Water and Power
Joe	McElroy	Michigan Electric Coop Association
Michael	*Willetts*	*Minnesota Municipal Utilities Association*
Glen	Aichinger	National Grid
Martha	*Duggan*	*National Rural Electric Cooperative Association*
John	Ducsai	New Hampshire Electric Coop
Kaira	Ellis	New Hampshire Electric Coop
Mike	Douglas	Oklahoma Gas & Electric
Lou	DeBrino	Public Service Enterprise Group
Paul	Toscarelli	Public Service Enterprise Group
Dan	Koch	Puget Sound Energy
Kyle	Broyhill	Sacramento Municipal Utility District
Ann	Steeves	San Diego Gas & Electric
Scott	Smith	Southeast Electric Exchange
Bobby	Hawthorne	Southern Company
Mallory	Cunnington	Toronto Hydro
Kate	Marks	U.S. Department of Energy
Jacklyn	Ulban	Unitil
Dave	Megna	WEC Energy Group
David	Berklund	Xcel Energy
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Public & Internal Messaging

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Julia	Miggeridge	Canadian Electricity Association
Sarah	Robinson	Canadian Electricity Association
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Brian	*Reil*	*Edison Electric Institute*
Stephanie	*Voyda*	*Edison Electric Institute*
Christina	Nyquist	Electric Power Supply Association
Stephen	*Bell*	*National Rural Electric Cooperative Association*
Scott	*Peterson*	*National Rural Electric Cooperative Association*
Paul	DeMichele	New York Power Authority
Sarah	Taheri	Northern California Power Agency
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Susan	Buehler	PJM Interconnection
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Telecom and IT Issues

First Name	Last Name	Company
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Sam	*Rozenberg*	*American Public Power Association*
Tobias	Sellier	American Public Power Association
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Patrick	Hart	Edison Electric Institute
Laura	*Schepis*	*Edison Electric Institute*
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Bill	Zuretti	Electric Power Supply Association
David	Revill	Georgia System Operations Corp.
Eric	Slavinsky	LGE-KU
Nate	Anderson	Lincoln Electric System
Robert	Piscioneri	LS Power
Brian	O'Hara	National Rural Electric Cooperative Association
Matthew	Holthe	Nebraska Public Power District
Matt	Schnell	Nebraska Public Power District
Shira	Dankner	Ninestar Connect
Ross	Ferson	Ninestar Connect
Maynard	Schnell	Ninestar Connect
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Kyle	Cormier	Salt River Project
Chris	Alexander	U.S. Department of Homeland Security
Sharla	*Artz*	*Utilities Technology Council*

Supply Chain Challenges

First Name	Last Name	Company
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Mike	Lewis	Ameren
Ty	Lindhorst	Ameren
Clay	Bryan	American Public Power Association

Jack	*Cashin*	*American Public Power Association*
Robert	McClanahan	Arkansas Electric Cooperative Corporation
Shana	Kuhn	Bonneville Power Administration
Robin	Yee	Canadian Electricity Association
Mary	Neal	Cogentrix
Tom	Rumsey	Competitive Power Ventures
Joseph	Quinn	Constellation Energy
Trevor	Ferguson	Dominion Energy
Wendy	Wellener	Dominion Energy
Anthony	Tomczak	DTE Energy
Melody	Birmingham	Duke Energy
Mark	Teague	Duke Energy
Anna	Ballance	Edison Electric Institute
Chris	Eisenbrey	Edison Electric Institute
Bill	Zuretti	Electric Power Supply Association
Sam	Chanoski	Electricity Information Sharing and Analysis Center
Maria	Jenks	Evergy
Eric	Vestal	Evergy
Kathleen	Abbott	Exelon
Todd	Dlouhy	Lincoln Electric System
Jim	Dutton	Lincoln Electric System
Mike	Willets	Minnesota Municipal Utilities Association
Bridgette	Bourge	National Rural Electric Cooperative Association
Sonja	MacQueen	Nova Scotia Power
Bill	Gross	Nuclear Energy Institute
Sue	Perkins	Nuclear Energy Institute
Yogi	Tagra	Ontario Power Generation
JoAnn	Murphy	PJM Interconnection
Bob	Tilton	Public Service Enterprise Group
Kate	Kochenderfer	Salt River Project
Bobby	Olsen	Salt River Project
Bill	Allen	Southern Company
Michele	*Guido*	*Southern Company*
Johnny	*Howze*	*Southern Company*
Laura	Campbell	Tennessee Valley Authority
Ryan	Churchley	Tri-State Generation & Transmission Association
Angela	Torres	Tri-State Generation & Transmission Association
Sean	Plankey	U.S. Department of Energy
Ron	Keen	U.S. Department of Homeland Security
Jerad	Gaines	Western Area Power Administration
Chris	Lyles	Western Area Power Administration
Bob	Kunze	Xcel Energy

Responsible Return and Reentry

First Name	Last Name	Company
Tom	Moran	All Hazards Consortium
Mike	Lewis	Ameren
Ty	Lindhorst	Ameren
Jared	Price	American Municipal Power
Clay	Bryan	American Public Power Association
Jack	Cashin	American Public Power Association

Sam	*Rozenberg*	*American Public Power Association*
Robert	McClanahan	Arkansas Electric Cooperative Corporation
Bill	Kelly	Austin Energy
George	Perez	Austin Energy
Thomas	Pierpoint	Austin Energy
Shana	Kuhn	Bonneville Power Administration
Scott	Smith	Bryan Texas Utilities
Robin	Yee	Canadian Electricity Association
Keith	Cutshall	CDE Lightband (Clarksville, TN)
Jim	Logan	City of Hamilton, Ohio
Callie	Linville	City Utilities of Springfield, MO
Mary	Neal	Cogentrix
Jim	Bagby	Colorado Springs Utilities
Steven	Kuhr	Colorado Springs Utilities
Tom	Rumsey	Competitive Power Ventures
Joseph	Quinn	Constellation Energy
Fred	Bonewell	CPS Energy
Trevor	Ferguson	Dominion Energy
Wendy	Wellener	Dominion Energy
Anthony	Tomczak	DTE Energy
Melody	Birmingham	Duke Energy
Mark	Teague	Duke Energy
Fred	Christie	Easton Utilities
Anna	Ballance	Edison Electric Institute
Chris	Eisenbrey	Edison Electric Institute
Pat	*Hart*	*Edison Electric Institute*
Hailey	*Siple*	*Edison Electric Institute*
Bill	Zuretti	Electric Power Supply Association
Kenny	Roberts	ElectriCities of North Carolina, Inc.
Sam	Chanoski	Electricity Information Sharing and Analysis Center
Matt	*Duncan*	*Electricity Information Sharing and Analysis Center*
Maria	Jenks	Evergy
Eric	Vestal	Evergy
Kathleen	Abbott	Exelon
Carter	Manucy	Florida Municipal Power Agency
Ty	Ehrman	Grant County Public Utility District
CJ	Berry	Imperial Irrigation District
Jennifer	Goodsell	Imperial Irrigation District
Gary	Hatfield	Imperial Irrigation District
Pat	Maillias	Jacksonville Electric Authority
Mark	Patterson	Jacksonville Electric Authority
Paul	Crist	Lincoln Electric System
Todd	Dlouhy	Lincoln Electric System
Jim	Dutton	Lincoln Electric System
Wes	Gyhra	Lincoln Electric System
Trish	Owen	Lincoln Electric System
Melissa	Palmer	Lincoln Electric System
David	Sehi	Lincoln Electric System
Amber	Tate	Lincoln Electric System
Khalil	Shelabi	Lower Colorado River Authority
John	Farrow	MEAG Power
Mike	Willets	Minnesota Municipal Utilities Association

Tammie	Krumm	Missouri River Energy Services
Bridgette	Bourge	National Rural Electric Cooperative Association
Martha	*Duggan*	*National Rural Electric Cooperative Association*
Bradley	Palu	Nebraska Public Power District
Donna	Starzek	Nebraska Public Power District
KC	Carnes	New York Power Authority
Randy	Crissman	New York Power Authority
Adrienne	*Lotto*	*New York Power Authority*
Tom	Savin	New York Power Authority
Scott	Tomashefsky	Northern California Power Agency
Sonja	MacQueen	Nova Scotia Power
Bill	Gross	Nuclear Energy Institute
Sue	Perkins	Nuclear Energy Institute
Scott	Focht	Omaha Public Power District
Kevin	McCormick	Omaha Public Power District
Mart	Sedky	Omaha Public Power District
Yogi	Tagra	Ontario Power Generation
Maggie	Burdette	Orlando Utilities Commission
Claston	Sunanon	Orlando Utilities Commission
Latisha	Thompson	Orlando Utilities Commission
Terry	Torrens	Orlando Utilities Commission
JoAnn	Murphy	PJM Interconnection
Bob	Tilton	Public Service Enterprise Group
Angelo	Adams	Sacramento Municipal Utility District
Kyle	Broyhill	Sacramento Municipal Utility District
Cheryl	Elia	Sacramento Municipal Utility District
Sharon	Huntsman	Sacramento Municipal Utility District
Erin	Page	Sacramento Municipal Utility District
Michael	Fish	Salt River Project
John	Hetrick	Salt River Project
Marisela	Johnson	Salt River Project
Kate	Kochenderfer	Salt River Project
Christa	McJunkin	Salt River Project
Bobby	Olsen	Salt River Project
Jana	Elliott	Seattle City Light
Michelle	Vargo	Seattle City Light
Bill	Allen	Southern Company
Michele	Guido	Southern Company
Johnny	Howze	Southern Company
Rachel	Allen	Tacoma Power
Eric	Green	Tacoma Power
Chris	Robinson	Tacoma Power
Courtney	Rose	Tacoma Power
Joe	Tellez	Tacoma Power
Joe	Wilson	Tacoma Power
Laura	Campbell	Tennessee Valley Authority
Ryan	Churchley	Tri-State Generation & Transmission Association
Angela	Torres	Tri-State Generation & Transmission Association
Sean	Plankey	U.S. Department of Energy
Ron	Keen	U.S. Department of Homeland Security
Dave	*Megna*	*WEC Energy*
Jerad	Gaines	Western Area Power Administration

Chris	Lyles	Western Area Power Administration
Chris	Monacelli	Westerville Electric Department (OH)
Bob	Kunze	Xcel Energy

Industry Medical Issues

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Simon	Hodges	Dominion Energy
Sheldon	Retchin	Dominion Energy
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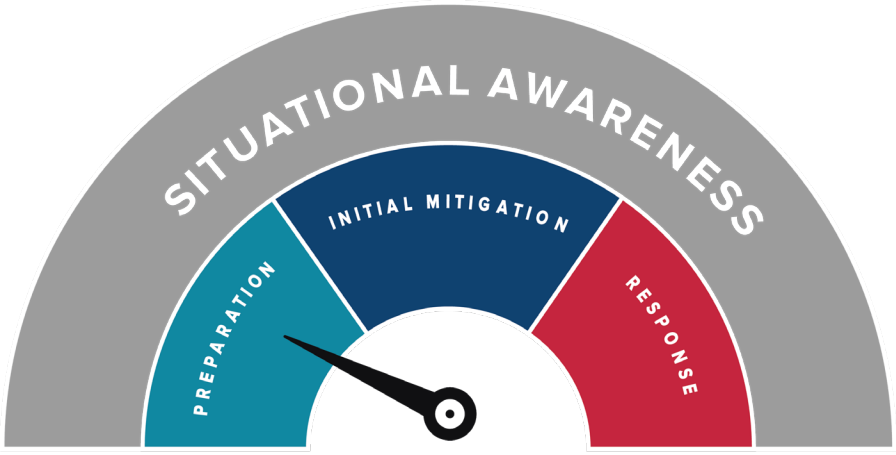
Alexandra	Leland	PSEG
Ronald	Mack, MD	PSEG
Helder	Mendes	PSEG
Stephanie	Olexson	PSEG
Sheila	Rostiac	PSEG
Stuart	Solomon	PSEG
Walter	Yukniewicz, Jr.	PSEG
Jodie	Broderick	Salt River Project
Don	Daigler	Southern California Edison
David	Eisenman	Southern California Edison
Dean	Yarbrough	Southern California Edison
Stan	Connally	Southern Company
Paul	Sabella	Southern Company
Lance	Walker	Southern Company
Rebecca	Katz	The Asia Group



Stages of COVID-19 Mitigation and Response

Situational Awareness

Investor-owned electric and/or natural gas companies, public power utilities, and electric cooperatives should maintain regular situational awareness of critical information that may inform preparation, mitigation, and response actions, including:

- COVID-19 infection rates, including number of current cases and deaths impacting:
  - local communities served
  - employees or immediate family members
  - contractor or vendor operations, personnel, or immediate family members
- Public health emergency declarations in service territory
- U.S. Centers for Disease Control and Prevention (CDC) travel guidelines for service territory
- School closures, including impacts to personnel with job duties that limit telework and other flexibility options
- Key accounts posture/closures
- Contractor and vendor posture
- Access to, and availability of, testing and vaccines
- Access to health care facilities and the changes in capacity of these facilities
- Industry trends based on tracking by trade organizations (APPA, EEI, NRECA), the North American Electric Reliability Corporation (NERC), and the Electricity Information Sharing and Analysis Center (E-ISAC)

Investor-owned electric and/or natural gas companies, electric cooperatives, and public power utilities should coordinate with:

- State/local elected/appointed officials and designees
- State/local health offices

- Key accounts, vendors, and contractors
- Local union and labor officials
- Federal government officials through the ESCC

Preparation

Assuming there are **no confirmed cases of coronavirus among employees or within the service territory**, investor-owned electric and/or natural gas companies, electric cooperatives, and public power utilities should consider:

- Increasing hygiene measures
- Planning for all employees to telework
- Planning for sequestering at critical facilities
- Assessing stockpiles of critical materials, including food, PPE, and critical equipment or materials
- Instituting foreign travel restrictions (CDC level 2 and 3 countries)
- Increasing the frequency of messaging internally (employees) and externally (community, customers, other partners)

Initial Mitigation

If there are **no confirmed cases of coronavirus among employees, but confirmed cases within the service territory/community**, investor-owned electric and/or natural gas companies, electric cooperatives, and public power utilities should consider:

- Increasing hygiene measures
- Instituting non-essential employee telework and continue planning for all employees to telework
- Sequestering as appropriate at critical facilities
- Instituting domestic and foreign travel restrictions (CDC level 2 and 3 countries)
- Limiting attendance to large group events
- Maintaining internal/external messaging
- Planning for facility decontamination and remediation

Response

If there are **multiple employees with confirmed coronavirus**, investor-owned electric and/or natural gas companies, electric cooperatives, and public power utilities should consider:

- Instituting employee telework for all appropriate employees
- Sequestering at critical facilities

- Instituting domestic and foreign travel restrictions (CDC level 2 and 3 countries)
- Maintaining internal/external messaging
- Planning for facility decontamination and remediation

General Planning Considerations

As part of their business continuity planning, investor-owned electric and/or natural gas companies, electric cooperatives, and public power utilities should consider the following:

Enterprise-Wide Planning

- Refreshing all business continuity plans and assessing whether the plans are robust enough to deal with workforce shortages (including loss of workers) and the loss of access to facilities, critical vendors, and technology.
- Establishing a cross-functional team to identify roles and responsibilities for stakeholder engagement and the tracking of key planning indicators.
- Assessing what level of leadership should meet, and how often, to discuss recommendations and decisions.
- Identifying factors that might lead to declaring an organizational emergency, and the consequences of declaring an emergency.
- Determining who is considered an essential employee, whether employees can be required to stay at work, and what HR/legal considerations exist.

Work-Related Domestic and International Travel

- Determining at what point the organization:
  - Restricts international travel to, or transit through, CDC level 2 and 3 countries
  - Restricts or discourages all non-essential international travel, regardless of CDC assessment
  - Restricts or discourages non-essential domestic travel
- Determining whether the organization should require self-quarantine for travelers returning from CDC Level 2 and 3 countries, and when the self-quarantine should be enforced.
- Determining whether travel restrictions are limited to situations where any social distancing is difficult (i.e., train travel, metro travel, etc.).

Information Technology (IT)

- Benchmarking current IT capabilities to address:
  - How many log-ons can the network support at once?
  - How many people require VPN access to perform their jobs?

  - Do employees who do not normally telework need to be issued additional equipment, such as laptops?

- Determining the plan if the organization should significantly increase network capability to support more telework and how long it would take to complete the necessary upgrades.

Assessing Employee Health and Wellness

- Considering what testing guidelines/information can be provided to workers.
- Determining whether the organization may test potentially exposed employees prior to returning to work.
- Deciding how the organization will identify and inform potentially exposed co-workers, vendors, or contractors if an employee is confirmed to have COVID-19.
  - Will those who are potentially exposed be required to self-quarantine?
  - How will the organization inform local health officials?
- Determining what family support resources currently are in place and whether they need to be enhanced.

Facility Management

- Identifying basic daily cleaning requirements and whether the frequency of cleaning should be increased.
  - How many times a day?
  - Where should hand-sanitizer/disinfectant wipes be placed?
- Deciding when it is appropriate for the organization to cancel or restrict large group gatherings, both internally and externally, and how a large group should be defined.
- Determining when the organization limits access to, and employs protective measures for, critical facilities.
- Deciding what type of decontamination should occur if an affected employee/vendor/ contractor reports to a work location and whether the immediate area or entire facility should be shut down.
- Determining when an organization should consider implementation of employee/visitor screening at building entrances, and when visitors should be restricted from entering facilities.

Management of Vendors/Contractors/Supply Chain Disruptions

- Determining when an organization would consider suspending in-person vendor meetings, particularly if vendors travel internationally.
- Defining what types of materials and services are critical.
- Assessing the current stockpiles of critical materials and the course of action if the stockpiles become low or are depleted.

- Identifying what plans vendors/contractors/suppliers have in place to ensure continuity of operations.

External and Internal Messaging

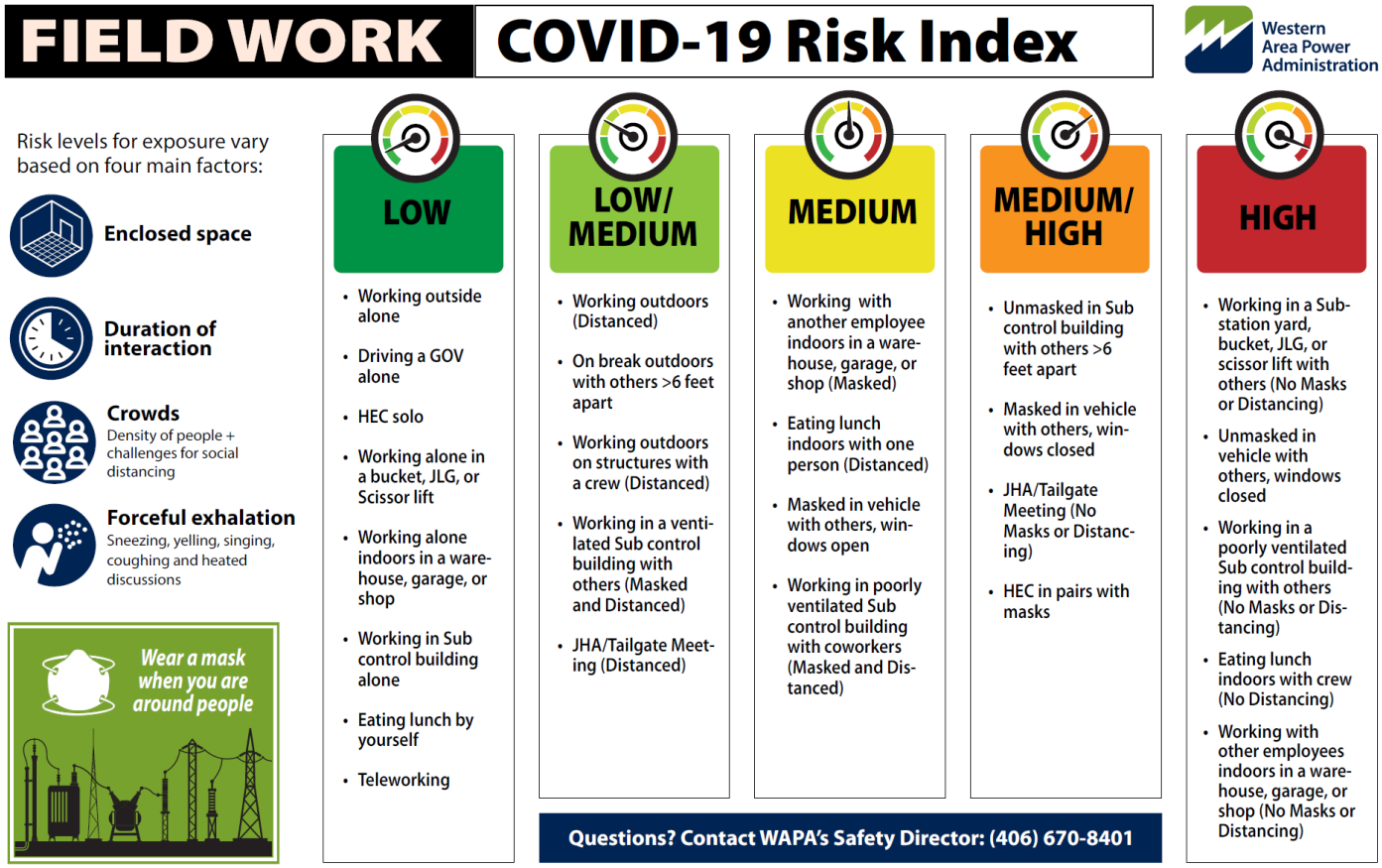
- Determining what messaging would be provided to:
  - General employees/managers/supervisors
  - Affected employee(s)
  - Managers/supervisors of affected employee(s)
  - Co-workers of affected employee(s)
  - Others at work location of affected employee(s)
  - Externally affected/exposed stakeholders
  - Internal stakeholders
  - Media
- Deciding what additional information needs to be included in messaging and whether there are any additional notifications that need to be made.
- Establishing the frequency and cadence of communications and consideration of multiple modes of communications (e.g., emails, FAQs, portals, facility-specific messaging, etc.).

Review of Grid Reliability and Mutual Assistance Networks

- Identifying whether decisions to increase/suspend/reduce operations at key accounts will impact load balancing.
- Determining whether the organization has identified facilities critical to the operation of the energy grid and has made accommodations for sequestering at those facilities (on-site food/water/hygiene/medical, family services, personal protective equipment, etc.).
  - What enhanced facility management needs to occur to make the environment as safe as possible?
- Determining whether the organization has made accommodations for line crews that may need to respond to grid disruptions (family services, PPE, etc.).
  - What type of personal protective equipment should be provided to crews operating in areas with high numbers of infections?
- Determining whether the organization is in contact with mutual assistance networks to assess the availability of additional resources if there are not enough workers to perform critical work.
  - Could the organization support a request for assistance, and has the company shared its status with the mutual assistance networks?

Additional Resources

Example of a COVID-19 Risk Evaluation Index



NOTE: HEC is defined as "human external cargo," a technique of lifting and moving lineworkers by helicopter.

COVID-19 Access Considerations

Section Summary

This section provides guidance that investor-owned electric and/or natural gas companies, public power utilities, and electric cooperatives may want to consider when accessing buildings or areas with COVID-19 contamination. It includes the following:

- Entering a home/building with known or suspected COVID-19 contamination.
- Considerations when attempting to access, and operate in, an entire community or region that has been restricted by a state/local government entity due to COVID-19.
- Accessing military or federal government facilities.

The guidance in this document was collected from organizations across the industry. The intent is to serve as a general information resource and not to set any industry standards. This document is evergreen and will be updated regularly to reflect additional or revised guidance as it is received.

Access to Contaminated Homes/Buildings

Prioritizing Work in Contaminated Areas

Recognizing circumstances differ across different service territories and different communities, investor-owned electric and/or natural gas companies, public power utilities, and electric cooperatives may consider the following in prioritizing work required to be completed in a contaminated area:

- Organizations should develop a list of essential and non-essential services and discuss those with appropriate government officials (including, but not limited to, the public utility commission) for feedback and appropriate waivers, if needed.
- Natural gas utilities should discuss leak response time requirements with the public utility commission and how/if responses can be prioritized, if applicable.
- Organizations should identify essential vs. non-essential services specific for in-home/building service (most applicable to appliance servicing) to inform prioritization of work orders/requests.

Supporting the Workforce Operating in Contaminated Areas

To support the workforce, investor-owned electric and/or natural gas companies, public power utilities, and electric cooperatives should consider the following practices to identify a contaminated home and mitigate exposure to field personnel:

- Conduct daily safety briefings prior to field workers going on service calls and develop an internal website with Frequently Asked Questions (FAQs) that are updated once a day on Personal Protective Equipment (PPE) guidance and other mitigation requirements.
- Develop a process workflow with questions and talking points for employees to use at the customer's door to identify suspected COVID-19 concerns. The workflow will give employees the flexibility to gauge the situation and to employ voluntary social distancing when the response requires entering a home/building.

  If a customer reports he/she has symptoms, the workflow document should include direction for the employee to call a supervisor to decide if the work is essential or non-essential. If essential, the employee follows the workflow document using upgraded PPE. *(See example of COVID-19 Workflow & Biohazard Assessment.)*

  Questions/directions to consider for a workflow document include:

  - Employees ask three pre-entry questions to validate status of COVID-19 at the location:
    - Is anyone in the residence, location, or establishment self-quarantined or self-monitored for COVID-19 within the past 14 days?
    - Has anyone in the residence, location, or establishment had a possible exposure to COVID-19 within the past 14 days?
    - Is anyone in the residence, location, or establishment sick with a respiratory illness, cough, fever, congestion, or experiencing shortness of breath?
  - Employees who enter a customer location with an active case of COVID-19 should consider the following protective measures:
    - Ask that the sick person go to another room.
    - Practice social distancing (at least 6 feet) from healthy people in the location.
    - Avoid touching surfaces whenever possible.
    - Avoid touching your face, nose, mouth, or eyes.
- Allow field personnel to call a "safety stop" when they are reluctant to enter a dwelling. A field worker should call his/her supervisor and discuss essential vs. non-essential work and proper precautions to take.
- Refer to CDC and Occupational Safety and Health Administration (OSHA) guidance on the use and handling of PPE. OSHA issued specific guidance on COVID-19, which can be found online at:

  Occupational Safety and Hazard Administration - Enforcement Memos
- Ensure employees are aware of the COVID-19 symptoms, and provide a mechanism (e.g., confidential hotline) for personnel to contact an organization's internal/external medical provider.

- Consider the importance of providing family services support for employees who may need to self-quarantine after potentially coming in contact with COVID-19 cases or have symptoms of an infection.

Access/Operations in Restricted Areas

In addition to the considerations above for work within a home or building, below are additional steps for organizations to consider when accessing and maintaining operations within an entire community or region that has been restricted by a government entity due to COVID-19. There is no one-size-fits-all approach given the number of variables, which include, but are not limited to, differences in state and local governments, community densities, regional weather conditions, and service territory nuances. For example, the community of New Rochelle, New York, had a one square mile containment zone; however, the local authorities did not restrict travel through or business in/out. Different local jurisdictions may impose different restrictions. As a result, the following guidance is intended to assist operators with advance planning for access and continuation of safe and reliable service to a restricted area.

Travel Into/Through Restricted Areas

- Public health quarantine and isolation statutes vary by state. A state-by-state summary of these statutes can be found online at:

  State Quarantine and Isolation Statutes - National Conference of State Legislatures

- Decisions to restrict access are generally made by local governments and likely in coordination with state officials. Enforcement of restricted access typically will be done by local law enforcement, state police, or the National Guard with authority from the governor.
- While not explicitly restricting access to a community or region, state or local governments may take actions to reduce density (such as enhanced social distancing) around COVID-19 hotspots. These actions typically come in waves, for example: instituting a 1-mile or 2-mile radius; shifting from increased telework to mandatory telework; or limiting the workforce to essential-only personnel and then sequestering essential personnel.
- Organizations should engage with their state Emergency Operations Centers (EOC) on a regular basis to:
  - Obtain an authorization letter, or similar documentation, that will help facilitate transportation/movement across the state.
  - Ensure that the EOC staff has visibility on crew movements and operational priorities.
- Organizations should use the EOC to engage local authorities to discuss:
  - How an organization will be informed of a decision to restrict access to a community or region.
  - The process that will be used to grant access to the restricted area. This process may allow cleared workers to enter and exit the restricted area at will, or it could require daily or regular screening.

- When accessing a restricted area, organizations should consider using vehicles with company logos and advise personnel to carry appropriate company/utility/cooperative IDs, government-issued IDs, and work orders. Organizations also may consider issuing badges, cards, or letters that identify employees who serve critical functions. They also should work proactively with local authorities to ask that these authorities accept such credentials to grant timely access. These additional credentials could help facilitate access to restricted areas. A credential can reference guidance released by the U.S. Department of Homeland Security to help state and local officials determine the businesses and workers that are essential for sustaining critical infrastructure operations. That guidance can be found online at:

  Guidance on the Essential Critical Infrastructure Workforce - Cybersecurity and Infrastructure Security Agency

- Organizations should monitor restricted areas across their service territory to consider how those restrictions may impact transportation routes.
- Organizations also should consider that some local jurisdictions may decide to restrict access to an area to prevent COVID-19 from entering their community. As noted above, early engagement with the state EOC and local authorities is suggested to ensure that organizations are aware before a restriction is announced. This should allow staff, equipment, and materials to be prepositioned within the restricted area. However, if a restriction is put into place before resources are prepositioned, organizations should consider:
  - Prioritizing the types of repairs and maintenance work that will need to continue within the restricted areas and discussing the importance of this work with local authorities.
  - Developing a process to 1) inform local authorities when work is required within the restricted area; and 2) gain permission to access the area to perform the work.

Maintaining/Monitoring Staffing Levels

- As state and local governments make decisions on restricted areas and/or containment zones, organizations should plan for how those decisions could impact the workforce and the ability to maintain business and operational continuity. Organizations should consider:
  - Geographic mapping of employee home addresses and work locations using IDs to protect worker privacy.
  - Developing an understanding of the high-risk population within the workforce, while following ADA and other applicable laws and regulations.
  - Including HR, legal, and labor relations in the planning process.
- Once restricted areas and/or containment zones are announced, an organization should consider:
  - Identifying and communicating with the employees who live or work in the impacted area.
  - Communicating with the full workforce to explain the impact to the organization.
  - Providing an outside medical resource for employees to call with medical questions.
- To maintain adequate staffing levels, organizations should consider:

- Bringing recently retired or separated employees with specialized training back to the organization.
- Training and certifying current employees for some specialized work, in coordination with labor unions.
- Transferring employees who typically provide non-essential services into an essential service area, provided they have the proper qualifications, in coordination with labor unions.
- Establishing a flexible staffing contingency plan to accommodate restrictions (such as age) that are imposed by government authorities on the workforce.

Social Distancing in the Work Environment

- Regardless of whether a facility is in a restricted area or containment zone, organizations should consider social distancing steps to minimize exposure in the work environment. They should:
  - Minimize person-to-person contact.
  - Minimize interaction between employees.
  - Split critical employees into different shifts and/or different locations.
  - Increase the frequency and level of cleaning and disinfection in critical work areas.
- For field workers operating in a restricted area or containment zone, organizations should consider:
  - Offering alternate lodging, such as mobile homes and RVs equipped with washer/dryers, showers, and kitchens.
  - Dividing workers into small teams and keeping those teams separated with assigned vehicles and different base camp / staging area locations. Consider rental options to keep the number of workers in a single vehicle low.
  - Instituting triple wellness checks with mandatory temperature readings at arrival, at mid-shift, and when going off-duty, with a health survey.
- If an employee tests positive for COVID-19, consider:
  - Tracing the individual's steps to determine who that individual worked with in close proximity, as defined by the CDC:

    How COVID-19 Spreads - CDC
  - Notify the employees who encountered the individual.
  - Clean and disinfect the area where the individual works and consider options for notifying, monitoring, and potentially quarantining workers who had been in close contact as each situation dictates using CDC guidance:

    Cleaning and Disinfecting Your Facility - CDC

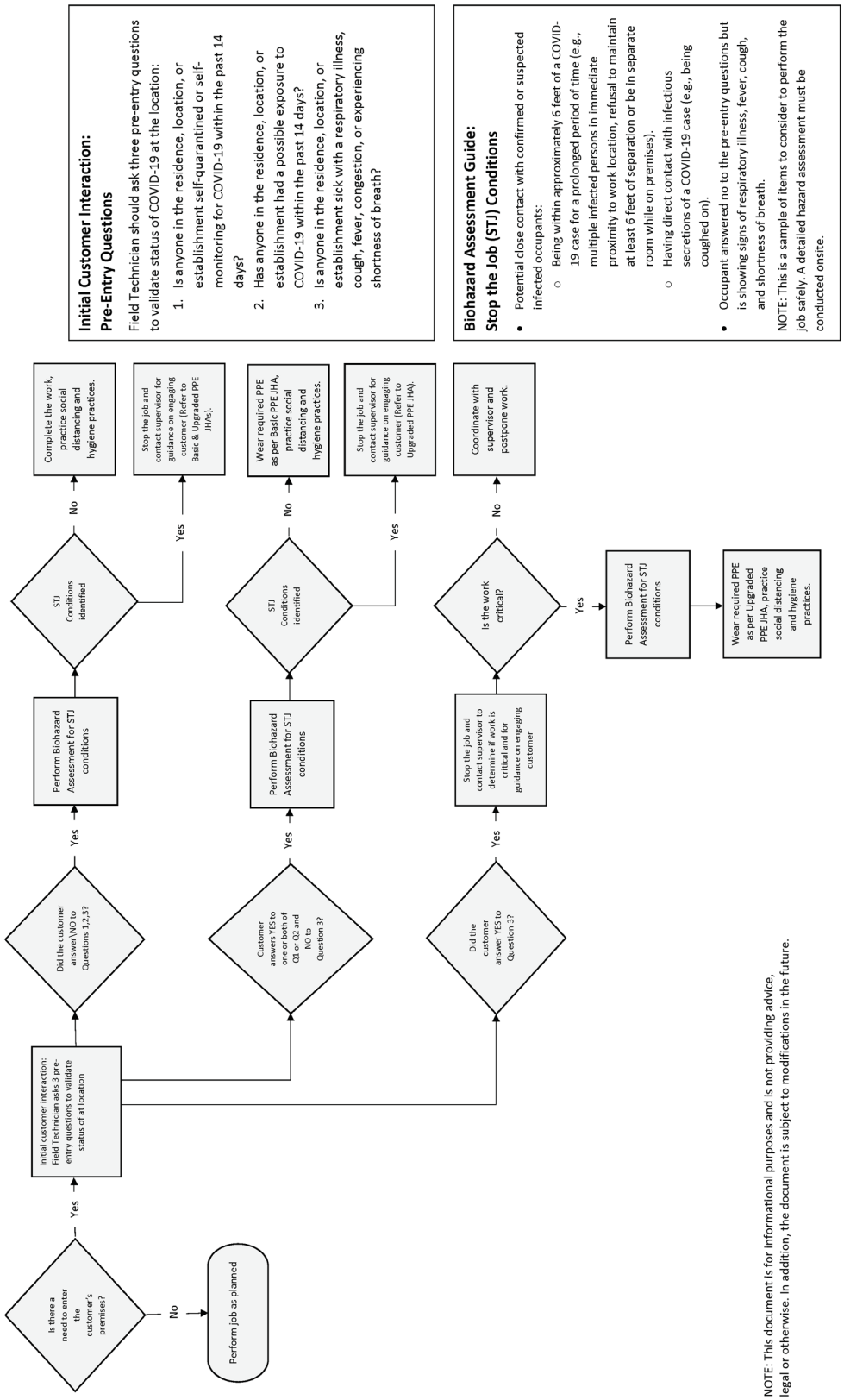
Access to Military and Federal Government Facilities

- Organizations should engage directly with military facilities and federal government buildings to determine if and when access is required.
- The Department of Defense (DoD) released some department-wide guidance, which can be found online at:

Partnering with the U.S. Defense Industrial Base to Combat COVID-19 - DoD

Additional Resources

Example of COVID-19 Workflow & Biohazard Assessment



Control Center Continuity

Section Summary

This section provides guidance to investor-owned electric companies, public power utilities, electric cooperatives, and federal government-owned utilities responsible for the safe and reliable operation of transmission and distribution control centers during and throughout the COVID-19 pandemic. This section:

- Presents credible scenarios that could impact control center operations.
- Identifies mitigation options, supports information sharing across the industry.
- Outlines needed government actions.

The guidance in this document was collected from organizations across the industry. The intent is to serve as a general information resource and not to set any industry standards. This document is evergreen and will be updated regularly to reflect additional or revised guidance as it is received.

Regulatory Relief and Governmental Support Needs

The mitigation strategies for the scenarios described below cannot be executed unless: **(1)** COVID-19 testing is available and streamlined for essential personnel who work in shift environments, i.e., control center personnel; **(2)** relief from certain regulatory obligations is obtained to ensure the continued availability of control room operators; **(3)** travel restrictions for the general public exclude personnel essential to the reliable operation of control centers; and **(4)** supplies for cleaning/hygiene are readily available.

Following is a summary of specific government actions needed to ensure successful mitigation of risk to control center continuity:

- **High-Priority Actions Needed**
  - Governmental authorities should direct medical facilities to prioritize testing for asymptomatic control room operators (and treat them comparably to first responders) in advance of sequestered, extended-duration shifts. State regulatory approval should be given to corporate health services organizations to administer testing for coronavirus to essential employees, if applicable.

- If local, regional, state, or federal government authorities enforce a population-wide quarantine/curfew or other travel restrictions, operators of critical facilities still should be able to move freely outside of hours.
- NERC should waive the certification requirement for system operating personnel if minimum staffing levels cannot be maintained. *[FERC/NERC addressed this issue on 3/18/20.]*
- NERC should allow the deferment of maintenance activities that require support from control center staff (e.g., contingency analysis and switching instructions). *[FERC/NERC addressed this issue on 3/18/20.]*
-
- **Medium-Priority Actions Needed**
- Control center facilities should be authorized to receive a priority supply of sanitizing supplies and PPE.
- Non-medical professionals (such as control center managers and supervisors) should be given state approval to administer health questionnaires and temperature checks using appropriate PPE while following EEOC guidelines:

  Pandemic Preparedness in the Workplace and the Americans with Disabilities Act - EEOC
- NERC temporarily should suspend regional entity audits of all registered entities. *[FERC/NERC partially addressed this issue on 3/18/20.]*

Identifying Critical Control Center Personnel

The personnel needed to staff the control centers of electric transmission and distribution facilities, reliability coordinators, and balancing authorities are essential to the reliable operation of the energy grid. The facilities needed to perform these functions are generally well-isolated and physically secure, or at least conducive to the sequestration of on-site staff as needed. However, given the long lead times required to train personnel to properly utilize the Information Technology (IT) and Operations Technology (OT) tools used to maintain control center functionality and grid visibility, the limited number of people with these qualifications places a higher risk to reliable operations and requires a higher priority for protection from the spread of COVID-19 than the general population.

To categorize these personnel accurately across the electric industry, a common method for identifying essential personnel is needed. This will allow for a better understanding of the number of people involved so that effective strategies for mitigating their risk of infection and resulting removal from the workforce can be developed. Individual investor-owned electric companies, public power utilities, electric cooperatives, and federal government-owned utilities still will have discretion to identify essential personnel unique to their organizations, but a more uniform approach to categorizing staff will support the communication of likely areas of government support at the local, state, and federal levels.

The job titles of a Control Center workforce may vary by organization. With respect to energy grid operations, employees generally fit into four categories:

- Control Room Operators – coordinate with other entities and use the EMS/SCADA to operate the electric system. This category usually includes the Direct Supervisors.

- Dispatchers[1] – interact with Transmission, Substation & Distribution Field Crews to manage field work. This category usually includes the Direct Supervisors.
- Direct Support Personnel – work directly with Operators and Dispatchers to assist in performing Control Room activities. This can include personnel who develop switching orders, perform administrative tasks (operating reports), etc.
- Indirect Support Personnel – work indirectly (or as-needed) to support Control Room activities. This can include employees who maintain and secure the functionality of the IT and OT tools used by Control Room Operators or who support facilities used by Control Room Operators.

Each of these categories can be grouped into individuals who can perform their functions remotely, and those who must be physically present at their control center workstations to perform their required duties. For this analysis, only those who cannot work remotely will be prioritized for continuity of operations.

The job titles of people in each category will vary by organization, but Control Room Operators generally include reliability engineers, dispatchers, area controllers, and their shift supervisors. Direct Support Personnel consist of those employees who maintain and secure the functionality of the IT and OT tools used by Control Room Operators.

Organizations also should consult guidance on Mission-Essential Workers developed by the ESCC at:

> Ensuring Energy Reliability Throughout the COVID-19 Pandemic: Testing and Protecting Mission-Essential Control Center and Generation Facility Personnel Is Fundamental - ESCC

Control Rooms

Control Rooms can vary greatly, even in the same organization. It is critical to understand the functions and nuances of specific Control Rooms to have meaningful conversations for risk mitigation.

Control Rooms are specific areas within a Control Center where Operators or Dispatchers perform their duties. It is essential that Dispatchers or Operators perform their work in the Control Room. Control Rooms also can contain various types of support personnel who are essential for operational support, but it often is not essential for them to be in the Control Room. In fact, it often is possible for these support personnel to work in other areas, other facilities, or even from home. This provides opportunities to reduce COVID exposure risks.

Control Rooms can support operations for Electric, Natural Gas, Market Operations or Power Trading, Power Plants, Steam Plants, and Cooling Plants. Some organizations may have several types of Control Rooms. Others may have a subset (e.g., a transmission-only organization). It is possible to perform multiple functions in the same Control Room. Each Control Room will have both constraints and opportunities for COVID contingencies.

Some Control Rooms might house only Control Room Operators, while other Control Rooms might support Dispatchers. Some Control Rooms have these functions combined. It often is possible to have

[1] Some entities combine the functions of Control Room Operators and Dispatchers (of Field Crews) into the same role. Other entities have separate roles.

the role of Dispatchers (for field crews) performed in the field offices. Organizations often adopt this tactic during storms. Putting this role temporarily back in the field offices can greatly reduce the number of personnel in the Control Rooms.

The primary Control Rooms generally are used 24x7 in most organizations. During the pandemic, most organizations have activated their Backup Control Centers to use the Backup Control Rooms in those facilities. This reduces the exposure risks among Operators and Dispatchers and enables heavier cleaning.

There also can be opportunities, depending on space and technologies, to add Control Rooms. This has been done at many organizations during the COVID pandemic. Adding Control Rooms that have appropriate functionality and meet compliance requirements is an approach that can further reduce COVID exposure risks among Operators and Dispatchers.

Staffing Flexibility

It is helpful to review opportunities for staffing flexibility which can, in effect, grow the roster of Control Room Operators. Such a review can include the following questions:

- What is the minimum staffing level for the Control Room?
- Are there other people inside and outside the organization who have the necessary skill sets to perform all or part of the function? This might include:
  - Personnel who train dispatchers
  - Managers and Supervisors with requisite skills
  - Engineering personnel (e.g., Controls Engineering, etc.)
  - Field personnel
  - Former Operators that are in other positions in the organization
  - Former Operators that have retired or departed and might be available

Managing the Workload

It may be helpful to understand ways to manage the workload for Control Room Operators to provide opportunities to reduce shift staffing. This can help with building the roster. Questions to ask might include:

- Are there tasks, particularly administrative in nature, that could be carved out and performed remotely by other personnel?
- Are there time-consuming tasks that could be reduced or eliminated temporarily (e.g., switching)?
- Can training and certification be delayed due to the relaxation of rules by various regulatory agencies?

Scenario Development

Given the extensive work within the electric industry to develop business continuity plans supported by redundant physical and IT infrastructure, many organizations have already taken steps to utilize their ability to operate from more than one location. Accordingly, the current emphasis must be on the development of risk scenarios that can identify potential gaps in existing plans given the unique nature of a pandemic's effect on personnel availability.

Each scenario was developed to describe an escalating impact to control room personnel at their primary and secondary location (or both). The scenarios will test the effectiveness of social distancing and quarantine, the availability of mutual assistance, and the need for proactive testing of priority employees to quantify the current risk level explicitly. The scenarios are accompanied by corresponding mitigation strategies that represent existing industry and government policies, standards, and capabilities, as well as suggested actions going forward.

Many investor-owned electric companies, public power utilities, electric cooperatives, and federal government-owned utilities took proactive steps to isolate their control center facilities from external visitors and non-essential employees early in the pandemic, leveraging the presence of back-up control centers, self-quarantining of employees, and multiple shifts to maximize social distancing.

Accordingly, the scenarios are designed to anticipate the logistical and operational challenges associated with the following conditions:

- Single operator impacted (either site)
- Single operator impacted (both sites)
- Shift compromised (either site)
- Shift compromised (both sites)
- Site compromised (either site)
- Site compromised (both sites)

Possible Mitigation Strategies for Scenarios

This section first describes universal preventive measures that should be considered prior to having any control center personnel diagnosed with COVID-19, in addition to measures that would apply in most scenarios where employees are diagnosed with the virus. Thereafter, specific recommendations for the escalating impacts of the above scenarios are provided.

Universal Mitigation Strategies

- Union leadership should be involved in discussions around possible mitigation strategies from the beginning to ensure transparency and collaboration.
- Compensation, attendance and reliability, PTO, and related polices that will apply during these conditions should be developed and communicated proactively.
- Social distancing at work and on personal time should be encouraged; opportunities to create greater physical separation of control room operator workstations should be identified; adjacent rooms should be utilized where possible; and interactions across shifts should be eliminated. Additional guidance on social distancing practices can be found in the "Social Distancing for Control Center Personnel" section of this Resource Guide.
- Good personal hygiene practices should be reinforced, and employees should self-administer wellness checks at home prior to departure for his or her shift. CDC and state health department information should be posted at the entrance to control rooms and pre-shift safety-hygiene message(s) should be delivered.
    1. Minimize direct contact (maintain 6' distance) and indirect contact, where possible leveraging gloves prior to contacting non-sanitized shared surfaces.
    2. Routine handwashing, leveraging soap & water for at least 20 sec or leveraging an alcohol-based hand sanitizer (containing 60%+ alcohol).
- Provide clear symptom reporting guidance to employees around at-home self-administered wellness checks and/or observations while on-shift:
    1. Fever (person feels warm to the touch, reports having been feverish since last report, or has an actual measured temperature of 100.4°F) that has persisted for more than 48hrs.
    2. Or fever AND one of the following:
        - Persistent cough.
        - Difficulty breathing.
        - Appears obviously unwell.
- The CDC's most current travel advisories should be built into event planning and travel arrangements. Practices to increase awareness of employees' personal travel plans to areas with active advisories should be considered.
- Employees who travel to a location with a CDC Level 3 Travel Health Notice should be required to adhere to a 14-day self-quarantine at home and should be cleared by organization health services, if applicable, before they return to work.
- COVID-19 testing of asymptomatic control room operators and support staff should be required to the extent available. Additional information on testing can be found at:

    COVID-19 Testing Overview - CDC

    FAQs on Testing for SARS-CoV-2 - FDA
- The frequency and extent of cleaning and disinfecting surfaces and equipment that comes into routine contact with multiple people should be increased.

- In the event exposure occurs, resources should be secured, and processes established for further sanitizing and segregating work areas. Suggested cleaning procedures should include the following within 6 feet of the exposure in all directions:
    1. Cleaning porous (soft) surfaces near workstation (e.g., cloth, leather, faux leather seats within manufacturers guidelines).
    2. Cleaning non-porous (hard) surfaces near workstations (e.g., desk, peripherals, communication devices, hard-chairs, etc.) with disinfectant products with EPA-approved emerging viral pathogens claims that are expected to be effective against the virus that causes COVID-19 (SARS-CoV-2) and ensure these products are compatible with surfaces and components. All products should be used according to label instructions.
    3. Cleaning lavatories used by the symptomatic employee, including door handle, locking device, toilet seat(s), faucet(s), washbasin(s), adjacent walls, and counter.
    4. Properly disposing of any items that cannot be cleaned. Paper procedures, maps, etc.)

    Additional guidance from the CDC on cleaning and disinfecting a facility can be found online at:

    Cleaning and Disinfecting Your Facility - CDC

- Individually assigned peripheral equipment (mice/keyboards/handsets/chairs) should be provided.
- A dedicated building entrance that is a significant distance from all other employees should be provided for all personnel working in the control center.
- Outside visitors should not be allowed in control centers (e.g., no tours or non-essential personnel from the same organization).
- Additional access restrictions, such as limiting visitors or non-essential meetings within spaces in proximity to control centers, should be implemented.
- Non-badged contractors/vendors should be screened with a health questionnaire and temperature check before being allowed onsite for deliveries, repairs, etc., and access during this time should be limited to critical activities only.
- Crews on shift work schedules should be segregated. System operators should be split (days/nights or split individual shifts) between primary and backup control centers. Operating night shifts and day shifts in different locations will provide a 12-hour window between occupation (e.g., allow for enhanced cleaning).
- Control room operators should be reduced to minimum (active desks), and they should be rotated in and out on a 7-day or 14-day schedule. (Be cautious of length of shifts when considering length of time.)
- Business continuity plans should have clearly defined thresholds and procedures for initiating organization shelter-in-place, sequestration, and quarantining of control center personnel as defined in the “Sequestration Guidelines and Considerations” section of this Resource Guide.
- A complete healthy shift should be sequestered and held in reserve for extreme scenarios such as when minimum staffing levels cannot be met.

- A resource plan should be developed for potential use of retirees, supervisors, managers, and engineers with the requisite skills to backfill control room operator and support staff in the event staffing is reduced due to COVID-19 infections.
- Control center support staff (engineering, transmission scheduling, compliance, etc.) should be allowed to work remotely (e.g., VPN) to the extent permissible within remote access and cybersecurity requirements of the organization.
- Information and communications technology resources should be appropriate to accommodate increased use of remote work arrangements consistent with business continuity plans, without compromising security. Consider conducting planned stress tests for these arrangements. The Electricity Information Sharing and Analysis Center (E-ISAC) developed guidance on remote operation of control center systems/assets, which can be found on the Center's online portal at:

  Guidance on Remote Operations - E-ISAC

- Organizations should anticipate and prepare for COVID-19-themed opportunistic social engineering attacks. Spear phishing, watering hole, and other disinformation tactics commonly are used to exploit public interest in significant events. Steps to ensure continued visibility and maintenance of cyber assets should be taken in the event of staffing disruptions.
- Logistics to house operators onsite, including bedding, hygiene facilities, entertainment, and food accommodations, should be developed.
- Mutual assistance and sharing of operators should be considered.
- If staffing levels are reduced due to COVID-19 and organizations cannot follow NERC Reliability Standards requirements, they should contact their NERC Regional Entity and NERC.

Scenarios 1&2 (single operator impacted at one or both sites)

Control Room Operator or Direct Support Personnel in the primary or secondary control room is confirmed with COVID-19. Both categories of employees work in tightly controlled shifts in terms of working hours, skill sets, and physical proximity during work. A positive case in any shift comes with a high risk of infection for other personnel in the same shift if the infected individual is not identified quickly.

While there is some amount of redundancy in skills sets on a single shift allowing for a degree of interchangeability, this option does not apply to all positions and is limited in both the quantity of people available and the duration of operational tempo. Having at least one confirmed case at both locations potentially compromises the standard redundant-site model of continuity, but still allows for proactive quarantine and reallocation of shift personnel if possible.

Mitigation Strategies

- All staff on shift should comply with CDC guidelines for critical infrastructure workers who may have had exposure to COVID-19. According to current CDC guidelines, employees who are asymptomatic may return to work but should wear a mask or face covering for 14 days. Symptomatic employees should be sent home immediately. CDC guidelines for critical infrastructure workers can be found here:

  COVID-19 Critical Infrastructure Sector Response Planning - CDC

- A body temperature screening process should be used, or symptoms reviewed before admission into control rooms. This is typically required to be performed by licensed medical professionals and may require relief from HIPAA requirements for supervisors/managers to perform if necessary. Appropriate PPE should be used.
- Conservative/reduced field operations should be implemented to reduce the workload of control room staff (reduce the number of switching orders to process).
- A supplemental staffing plan should be implemented, and refresher training and simulations offered for supervisors, managers, engineers, and retirees with the requisite skills to backfill control room staff in the event control center staffing is further reduced due to COVID-19 infections.
- The family situations of operators impacted by quarantine should be considered and assistance/support offered where needed to ensure quarantined operators do not feel they are placing their family at risk (e.g., transportation, housing, childcare, eldercare, video chats).
- Organizations should consider sequestering employees in their homes rather than in a separate location away from their families (address individual employee personal circumstances).

Scenario 3&4 (shift compromised at one or both sites)

Multiple Control Room Operators and/or Direct Support Personnel in any single shift at both the primary and backup control rooms have been confirmed to have contracted COVID-19. This scenario assumes at least one shift in both facilities is infected, or multiple shifts in the case of an organization that only has one functioning control center. This will limit the value of social distancing between the staffs of the two control centers and raises the likelihood of close physical contact with infected individuals at both locations. These circumstances also quickly overextend the ability to reallocate personnel between shifts since at least one complete shift at each location has been compromised.

Suggested mitigation strategies for these scenarios are provided in greater detail in the “Sequestration Guidelines and Considerations” and “Mutual Assistance for Control Center Operators” sections of this Resource Guide.

A previous version of this guidance recommended that there should be a single control room for operators who have confirmed cases of COVID-19 in the event minimum staffing levels cannot be maintained with employees who do not have the virus. To clarify the intention of this statement, the Control Center Continuity Working Group is recommending that this approach only be followed in extreme situations that cannot be mitigated by any other means. Any employee who shows symptoms or tests positive for COVID-19 should be separated from other employees, customers, and visitors and should be sent home, per CDC guidelines, if possible.

Mitigation Strategies

- The same strategies outlined in Scenario 1&2 apply.
- Non-impacted shifts should be sequestered onsite.
- If available, onsite 24-hour medical care should be considered.

Scenario 5&6 (site compromised at one or both locations)

The primary and backup control rooms have a significant number of Operators and/or Direct Support Personnel impacted with COVID-19, compromising the entire site. Multiple infected personnel in this scenario also assumes that, in addition to both facilities having personnel who test positive, more than one shift at each location is affected. This will exacerbate the problem of realigning personnel who are cross trained to perform specific functions or using in-house redundancy of employees without knowing which specific skills are needed. Additionally, this also could lead to the compromise of a control center to the degree that it is no longer usable until it can be sanitized properly.

Suggested mitigation strategies for these scenarios are provided in greater detail in the "Sequestration Guidelines and Considerations" and "Mutual Assistance for Control Center Operators" sections of this Resource Guide.

Mitigation Strategies

- Operations should be sequestered fully onsite.
- If available, onsite 24-hour medical care should be considered.
- Per the guidance above, a body temperature screening process should be used, or symptoms reviewed before re-admission into control rooms, and recovered staff should be isolated from infected staff in a plan to return to heathy pool.
- The family situations of operators impacted by sequestering should be considered, and they should be offered assistance/support where needed to ensure sequestered operators do not feel they are placing their family at risk (e.g., transportation, housing, childcare, eldercare, video chats).
- Mutual assistance may be necessary to ensure continuity of control center operations.

Social Distancing for Control Center Personnel

Social distancing, or limiting physical interactions between individuals, can be an effective strategy for reducing the risk of spreading COVID-19. CDC guidance on social distancing recommends maintaining at least 6 feet of physical distance between individuals, including in the workplace when possible. Strategies for implementing social distancing in a control center environment are outlined below. These solutions can be paired together, as appropriate, based on factors related to each organization's workforce and the physical space available for control center operations.

If a NERC-registered entity, subject to NERC Reliability Standards, is unable to operate the grid through primary or backup control centers, it must follow NERC's Reliability Standards. NERC has published an FAQ on using interactive remote access if an entity cannot staff its control center, which can be found online at:

NERC Publishes FAQs About Joint NERC–FERC Industry Guidance for COVID-19

Leverage additional control rooms to limit rotation of personnel

- Primary and backup (or dual primary) control rooms should be utilized with control center operators split-assigned.

Repurpose spaces in control centers to limit physical interactions between control center personnel

- Consider which, if any, personnel can perform their jobs in spaces adjacent to an existing control room.
- In any scenario where a shift of control center personnel is not in the same room, the lines of communication between employees should remain open, clear, and easily accessible.

Physically separate workstations within a control room

- Workstations should allow for at least 6 feet of space between employees.
- Room design and other physical space limitations, including the placement of wiring, may restrict options for where workstations can be located.

Designate workstations for individual operators

- Assigning each employee a dedicated workstation reduces the likelihood that an employee will come into contact with a contaminated surface.
- If physical space or the number of available workstations is limited, this may make it more difficult to ensure that there is enough physical distance (at least 6 feet) between workstations.

Enable remote operations outside of a single control room

- Not all control center operations can be performed remotely. This option only may be feasible for non-control functions, including monitoring, data analytics, and other situational awareness functions.
- Remote operations increase the potential for security vulnerabilities.
- When implementing any remote operations for control center personnel, it is critical that lines of communication between employees remain open, clear, and accessible. Remote operations may increase reliance on commercial telecommunications infrastructure and may eliminate the option to use some backup channels of communication.
- The NERC Reliability Standards address requirements for BES control centers and security controls for remote access of systems, applications, or data.

Sequestration Guidelines and Considerations

Control center personnel working in close proximity for extended periods proactively can be isolated to limit their chances of contracting COVID-19. In this document, the following definitions apply to the different means of isolation:

- **Shelter-in-place:** An employee should remain in his/her private residence with immediate family members only. Travel outside the home should be restricted to essential needs and functions only, including food, medicine, and work deemed critical. This form of movement restriction is largely consistent with state-level orders and directives.
- **Self-quarantine**: Following the onset of symptoms or the possible exposure to a positive case of COVID-19, an employee should remain in isolation from interpersonal contact and should not leave his/her designated area of quarantine (i.e., his/her home).
- **Sequestration:** An employee with no confirmed exposure risk and no symptoms of COVID-19 proactively is isolated for an extended period for the purpose of performing his/her job function on-site. No movement beyond the designated sequestration area and no interpersonal contact with individuals outside the defined area for the designated period are allowed.

Sequestration Triggers

Sequestration is likely to be the most effective means of reducing risk to critical control center employees during a pandemic, but it is also the most resource- and cost-intensive option to implement. Additionally, sequestration presents additional challenges to employees and their families at a time when stress and uncertainty already are running high. Careful consideration of the circumstances or "triggers" that dictate a decision to enact sequestration is necessary for determining if and when sequestration is the best option.

The decision to enact sequestration is driven by individual organization risk assessments and should not be based on any one criterion or data point alone, but it should consider the situation for a specific control center holistically. Considerations may include, but are not limited to, the following:

- The number of people showing symptoms or testing positive as a percentage of the population for the government jurisdiction (county or municipality) where the control center is located. This is largely based on the availability of testing for COVID-19 and requires constant communication with staff who are both on- and off-shift to monitor their health. Consideration should be given both to the location of the control center and the home addresses of employees who commute from outside the jurisdiction where the control center is located.
- The number of people showing symptoms or testing positive who perform certain job functions, primarily based on particular certified skills and the ability to hire a replacement. Acceptable risk should be based on the minimum staffing requirements of the control center and should include the availability of a reserve shift for critical position backfills. For example, shift supervisors are commonly certified in all positions in the control center, and the unavailability of more than one-third of a single organization's shift supervisors could compromise operations.
- The rate of infection spread across a geographic region. Considering the rapid spread of COVID-19, special care should be taken to identify the point at which control center personnel are more likely than not to come into contact with an infected individual during their off-shift hours. The degree of risk to an employee is affected by the government and private-sector

measures implemented to limit the spread of the virus, such as the closing of schools, daycares, public venues, restaurants, etc., or the implementation of a state- or city-wide shelter-in-place mandate.

Other possible considerations for activating control center sequestration may include:

- Screenings based on control center absenteeism rates.
- State or municipal emergency directives that apply to the jurisdiction in which a control center is located.
- Reliability Coordinator (RC) directives that require operation of the affected control center to ensure reliability of the bulk electric system for the duration of the pandemic.
- Reputational risks of either taking or not taking action to ensure continued operation of the affected control center (e.g., in support of the RC).

In addition to understanding the possible triggers for enacting sequestration, operators should consider factors that may indicate that sequestration is not the best solution for a control center at a particular time. For instance, in regions that already have seen high numbers of confirmed cases or rapid rates of community transmission, the ability to test every sequestered employee proactively is a critical prerequisite before sequestration can be enacted. If sufficient testing is unavailable in these circumstances, it may be 'too late' for sequestration to be an effective means of reducing risk to control center employees. Conversely, if a sequestration plan is put into effect too early, it may become challenging to sustain operations for the necessary duration of the sequestration.

Example 1: Sequestration triggered by threat of rapid infection spread

One organization considered three options for when to activate its sequestration plans. The first option was to prepare but not to sequester until there was an outbreak in the control center. The second option was to prepare and to continue to track infection spread in the surrounding area until a certain trigger was met. The third option was to sequester quickly before an outbreak began. This organization chose the third option and moved quickly into an onsite sequestration, deciding that it would be easiest to make a sequestration site operational before an infection outbreak spreads.

Example 2: Developing a tiered escalation plan

Another organization decided to develop a tiered escalation plan rather than moving quickly into sequestration. At lower levels of risk, the plan calls for measures like social distancing, additional cleaning, and designing contingency plans for staffing. As the risk increases, the plan recommends moving to modified shift rotations and alternate control center locations and implementing medical screening or testing. At the most severe level of risk, as a last resort, the plan recommends sequestration.

Example 3: Sequestration at one control center

One organization is sequestering staff at one control center and is emphasizing social distancing and other preventative measures at other control centers that are not sequestering. This is intended to ensure that there is at least one full team of operators available if the situation worsens and if other shifts are unable to work due to illness or risk of exposure.

Example 4: Sequestration based on system operator absenteeism

Several organizations have indicated that they will sequester control center employees when they reach a level of absenteeism that equals their minimum staffing requirements plus 50 percent. For instance, if the minimum staffing requirement at a facility is 40 percent of the total staff, then the trigger for sequestration would be 60 percent of staff availability.

Example 5: Sequestration based on community infection percentages

One organization is considering the percentages of the community infection rate to inform its decision on whether to sequester. At a lower threshold of 10 percent community infection, this organization allows an officer-level decision to determine whether to sequester. At a higher threshold of 20 percent, this organization mandates a move to sequestration.

Universal Sequestration Strategies

Strategies for sequestering control center personnel are driven by organization risk assessments and geographically specific factors, such as the remoteness of the facility itself and proximity to large clusters of positive cases.

An effective sequestration may require alterations to existing schedules and alignment of personnel:

- Shift schedules should change from 8 hours to 12 hours. This reduces personnel turnover and ensures that shift hand-offs occur only between the same two groups. This eliminates the potential cross-contact of shift personnel with those of a second/back-up control center and reduces the total number of interactions.
- An organization-directed self-quarantine of a complete reserve shift ensures that all critical functions can be performed in the event that a shift becomes compromised. To ensure their availability as a complete team, a shift should not be "cannibalized" to supplement individual positions in a different shift.
- All personnel who can perform their essential tasks remotely should be moved off-site. Organizations have rapidly taken steps to develop the IT infrastructure necessary to move support tasks off-site that previously were not accessible remotely. This allows for a bare minimum number of people in the facility that houses the control center to limit contact further.

To ensure that a sequestration plan is implemented effectively and that enough employees are willing to volunteer to be sequestered, the quality and availability of support services are critical. Support plans should include provisions for the following:

- **Duration:** A minimum of 14 days is necessary to ensure the availability of a replacement sequestered shift, given the minimum length of an ordered quarantine for exposure. The current maximum in practice is 6 weeks, driven by the expense associated with providing the support services for shifts and the exposure risk associated with shift changes.
- **Lodging:** Most control center facilities do not have existing designated lodging space, or the conditions were designed for temporary use during more traditional circumstances such as storm responses. Given the extended nature of sequestered shifts, control centers either are retrofitting existing space to accommodate personnel for longer periods of time, or they are procuring sleeping trailers and recreational vehicles to house operators on-site. Accommodations should limit the number of people in each designated sleeping space for

comfort (current practice is two per trailer) with consideration for gender. Current cost assessments identify 6 weeks as cost parity for buying trailers vs. renting them.

- **Family Support:** Connectivity with family members is essential to ensuring the ability of operators to perform their jobs. Addressing unique family requirements such as childcare, medical requirements, transportation needs, and food/groceries should be considered during discussions with volunteers.
- **Food:** There are three primary strategies to provide food to shift personnel, each with a requirement to determine the frequency of delivery to limit exposure risk from frequent interactions with delivery personnel and contracting provisions regarding the sanitation practices of the food provider to ensure the lowest possible risk:
  - When adequate kitchen facilities are available, groceries can be delivered, and operators can prepare their own food.
  - Prepared meals or catering can be provided.
  - Food preparation personnel (a cook) can be included in the sequestered team.
  - Communal dining facilities should be limited during the initial 14 days to limit the risk of exposure to all personnel.
- **Medical Services:** Ongoing monitoring of sequestered employees' health is necessary to maintain the integrity of sequestration and to ensure all employees' continued safety. At a minimum, this may include routine self-testing for symptoms such as fever, with the ability to call upon medical professionals as needed. Alternatively, a medical professional can be sequestered on-site to provide services to all on-site shifts, reducing the external exposure risk.
- **Cleaning/Sanitation Services:** The ongoing cleaning of the control center, lodging, and common areas is essential to the health and welfare of operators. As with food service, there are tiers of exposure risk based on the strategy selected:
  - Shift personnel may be provided with the required supplies to clean common and individual spaces themselves.
  - External cleaning services, including personnel who are equipped with all necessary PPE to limit the risk of exposure, may be contracted to come on-site as needed.
  - Cleaning staff may be sequestered on-site.

Finally, for sequestration to be activated effectively, a plan must be developed completely and ready for immediate implementation, including a schedule for the full duration of the sequestration, provisions for support services, and identification of volunteers.

Sequestration Experiences from the Industry

Several organizations across the industry actively are sequestering some of their mission-essential employees. The following list highlights steps taken, and lessons learned by these organizations as they work to reduce the risk of contamination and protect their critical workforce. This list is not exhaustive and only is intended to share information about which strategies organizations have elected to use. This list will be updated regularly as more sequestration experiences are shared across the industry.

Control Center Staffing, Operations, and Facilities

- Implement Incident Command Structure (ICS).
- Conduct daily incident command organization meetings and share department communications with control room leadership and employees.
- Isolate any non-essential employees from control rooms prior to sequestration.
- Utilize primary and backup control centers to limit interactions between critical employees and to mitigate risk of control room contamination.
- Consider control room functions that can be performed remotely, like monitoring or data analytics.
- Sequester an adequate number of operators to allow for unforeseen changes, including enabling an employee to leave sequestration in the event of an emergency at home.
- Sequester necessary facilities personnel to maintain functionality and cleanliness of control center buildings.
- Limit access to control center buildings by disabling badges for non-essential or quarantined employees.
- Ensure that internal lines of communication between staff allow for immediate, reliable connectivity.
- Coach staff on personal CDC preventative recommendations, including maintaining 6 feet of space between individuals during the work shift.
- Track interactions between sequestered employees as appropriate.
- Consider suspending non-essential field work if possible.

Health and Wellness

- Conduct pre-sequestration testing of all onsite staff.
  - Recognizing that this is a serious challenge for the industry, a future iteration of this document will share the experiences of organizations that have secured or attempted to secure pre-sequestration testing for mission-essential workers.
- Provide a separate medical hotline for employees to report symptoms/concerns.
  - This has numerous benefits, including employees directing medical or COVID-19 epidemiological questions to an anonymous source and away from supervisors who are focused on operations.
- Conduct regular medical screenings, including measuring temperature and checking for other symptoms, onsite and/or at the entrance to the control room.
- Increase sanitization and cleaning practices in control room buildings, which may include the application of electrostatic cleaning treatment and/or NanoSeptic surfaces to reduce spreading of germs.
- Install HEPA air filters in air handling units and/or near doors to control rooms.

- Provide access to fitness facilities and exercise equipment within sequestration areas.
- Enforce strict hygiene guidelines for all sequestered employees.

Living Facilities and Other Necessities

- Develop a procedure for deliveries of required goods and services.
- If sequestering onsite:
  - Provide onsite food service to all sequestered personnel.
  - Provide onsite shower facilities and other personal hygiene necessities.
  - Provide onsite laundry facilities.
  - Provide onsite sleep and rest facilities, which may include dedicated sleep trailers, bunk rooms, or rented/purchased RVs, with provided bedding (sheets, pillowcases, blankets, pillows, etc.) and other necessities.
- If sequestering in hotels:
  - Provide pre-packaged, individually wrapped food.
  - Have employees clean their own rooms to reduce interaction with hotel staff.
  - Have employees drive their own vehicles to and from the control center.
  - Provide laundry facilities or services.
- Wash bedding and other linens after each use.
- Stock up on office, kitchen, and food supplies to eliminate the need to leave the premises and reduce the number of interactions between sequestered employees and non-sequestered individuals.
- Provide appropriate physical security protection to sequestered employees.

Mutual Assistance for Control Center Operators

Continuity of control center operations is driven by the health and availability of trained personnel. This has led many organizations to develop and activate plans that involve isolation or sequestration of control center operators to maintain shift integrity and to limit the potential exposure to COVID-19. However, given the shortage of available testing for mission-essential employees, circumstances may arise in which isolation or sequestration fails to protect workforces adequately and additional actions are needed to supplement control center operations.

Mutual assistance or mutual aid is a model that the industry uses very effectively to supplement an impacted organization's workforce during emergencies like severe weather events, and this model may be adapted to help fill control center gaps during a pandemic. However, there are many challenges and constraints around using mutual assistance in these circumstances, and careful consideration is needed to mitigate the risks associated with sending employees to other service territories.

Specific guidance for traditional mutual assistance during this pandemic can be found in the "Mutual Assistance Considerations" portion of this Resource Guide.

Challenges:

- **Task Variance:** Specific positions and functions within control centers vary based on the Bulk Electric System (BES) or grid component being managed and reflect variations in organization-specific policies and alignment. Transmission, distribution, and generation systems all have unique control room positions that cannot be filled without conducting a robust up-front screening to determine whether the training and certification of potential mutual assistance resources are functionally compatible with the requirements of the requesting entity.
- **Knowledge of Operational Practice:** Reliability Coordinators (RC), Transmission Operators (TOP), Balancing Authorities (BA), Transmission Owners (TO) and Independent System Operators (ISO) all have specific nomenclature and jargon, coordinated responsibilities, and orders of operation used to run their systems, including the dispatch of generation, contingency analysis, switching/clearance orders, and outage coordination. Additionally, an operator's knowledge of grid topography (location of critical loads, demand response resources, what type of remedial action schemes are available, etc.) is important for efficient operation. Regional variance, including variance inherent in the associated interconnection, should be considered when identifying potential mutual assistance resources to limit the time and complexity of acclimation to a new control center environment.
- **System Customization:** Energy Management Systems (EMS) and supporting toolsets are heavily customized, making it difficult to find replacement operators with the required knowledge of IT and OT systems specific to the requesting entity.
- **Contamination Risk:** Given the emphasis on staff isolation and sequestration to prevent the spread of COVID-19 to control center personnel, special consideration should be given to the availability of medical testing prior to integrating anyone from outside the organization into a critical workforce. Strict requirements and screening criteria for any external candidates are necessary to limit the risk of contamination. Consideration also should be given to state restrictions on movement and self-quarantine.
- **Legal Indemnification:** The risk of potential impacts on the real-time performance of a system is greater for control room operations than it is for the field work that traditional mutual assistance crews typically conduct on distribution and transmission infrastructure. Additionally, operators often are accessing and utilizing Critical Infrastructure Protected (CIP) systems, requiring a fast track for system access. The Cyber Mutual Assistance (CMA) Mutual Non-Disclosure and Use of Information Agreement is useful as a template for future agreements for specialized personnel to limit some legal liability and security risks. Other existing frameworks, including the Edison Electric Institute Mutual Assistance Agreement and the American Public Power Association's and National Rural Electric Cooperative Association's Mutual Aid Agreement, also may be leveraged as a framework to address some liability issues related to potential control center mutual assistance.

Risk-Based "Tiers" of Mutual Assistance

Recognizing that there is not a one-size-fits-all approach, this document outlines several "tiers" of supplemental control room resources that organizations could consider to fill the depleted ranks of control center staff. The tiers are listed in descending order with respect to ease of implementation and level of overall risk.

- **Internal Mutual Assistance:** The lowest risk form of mutual assistance draws supplemental control room resources from the existing workforce of a single organization. This could include

cross-training to sustain essential functions by taking personnel who work in "non-essential" areas of the control center with a working knowledge of the relevant systems, procedures, and tools (for instance, a real-time system engineer). Internal mutual assistance also could include identifying employees who previously have worked in control centers and now serve in different capacities (such as corporate management), employees who recently have retired, or previous employees who may work for another organization but retain a functional knowledge of the system. Except for extreme circumstances, these personnel only should monitor and help maintain situational awareness, enabling real-time operations on the system to be performed by certified system operators.

- **External Assistance (Region-Specific):** Operator job descriptions and tasks are more likely to be aligned among the asset owners/operators within the same Reliability Coordinator (RC) footprint. Familiarity with these norms, general knowledge of neighboring system infrastructure, and joint outage management training within RCs is likely to reduce the time needed to integrate external personnel properly. In some instances, certain grid balancing functions can be delegated to transmission and distribution control centers to reduce workload on regional entities for periods of time.
- **External Assistance (Tool-Specific):** A deep working knowledge of common EMS software is essential to the workforce compatibility of mutual assistance personnel. Organizations should identity in advance the IT/OT tools of greatest importance by work function to match them to the areas of greatest need for possible assistance.
- **Remote External Assistance (Organization-Specific):** If two neighboring territories have substantial EMS overlap and shared oversight, it may be possible for one territory to provide control center mutual assistance remotely. In this instance, the neighboring organizations already would have a fundamental working knowledge and shared understanding of each other's systems and already may have such assistance plans in place. Although this option is lower risk than other external forms of mutual assistance, it is less likely to be viable for many organizations.

Additional Considerations

- **Advance Planning for Mutual Assistance:** As an organization has increasing constraints to ensure the effective staffing of its control center functions and begins to anticipate the need for mutual assistance, that organization should coordinate with neighboring entities to identify potential mutual assistance resources in advance. Additionally, the entity should proactively consider remote training options to begin familiarizing and training potential mutual assistance resources to advance their knowledge of grid topography, specialized system operating knowledge, and EMS tools.
- **Limitations Based on Qualification or Certification:** In all but the most extreme circumstances, the functions that either an internal or external mutual assistance resource could perform would be limited and could include non-control functions, like monitoring, data analytics, or compliance documentation, among others. Additionally, it should not be assumed that all certification requirements will be lifted for every position, even in a black sky event.

Additional Resources

FERC and NERC Provide Industry Guidance to Ensure Grid Reliability Amid Potential Coronavirus Impacts

News Release - March 18, 2020

FERC Acts to Prioritize Reliability, Provide Regulatory Relief

News Release - April 2, 2020

Mutual Assistance Considerations

Updated: July 7, 2021
Changes since the last version are highlighted in red.

Section Summary

This section outlines considerations for mutual assistance practices between organizations during the COVID-19 pandemic. Mutual assistance requests and responses may arise due to the impacts of the pandemic on a utility or to support response operations to a concurrent disaster. Specifically, this section highlights a COVID-19 informed approach to mutual assistance planning, including:

- Recommendations for supporting and protecting personnel on and off worksites.
- Lessons learned from mutual assistance operations during the COVID-19 pandemic in 2020.
- Contact tracing guidelines for personnel involved in mutual assistance operations.

The guidance in this document was collected from organizations across the industry. The intent is to serve as a general information resource and not to set any industry standards. This document is evergreen and will be updated regularly to reflect additional or revised guidance as it is received.

Pandemic Mutual Assistance Checklist (Updated)

This checklist is designed to provide requesting and responding investor-owned electric companies, public power utilities, and electric cooperatives guidance on how to conduct mutual assistance during the COVID-19 pandemic.

Investor-owned electric and/or natural gas companies, electric cooperatives, and public power utilities are committed to protecting the people working for them and to ensuring energy operations and infrastructure are supported throughout an emergency. The items in this checklist can help provide guidance for mutual assistance efforts while protecting the health and safety of employees, customers, and communities. These practices are suggested for all organizations, regardless of the number of confirmed COVID-19 cases in the area.

This checklist may be used when providing mutual assistance for outage incidents during the COVID-19 pandemic. It also may be used when providing mutual assistance if a requesting organization is so impacted by COVID-19 cases that it is not able to conduct normal daily operations without assistance. Organizations providing or requesting mutual assistance should follow the terms and conditions of their existing mutual assistance or mutual aid agreements.

Work Practices

- ☐ Responding and requesting organizations should follow the latest CDC and OSHA guidelines regarding COVID-19 as well as any local or state laws, rules, and regulations. *(See CDC recommendations.)*

- ☐ Responding crews should follow their organization's policies and procedures, and responding investor-owned electric companies, public power utilities, and electric cooperatives should work to minimize the chance of infected workers travelling.

- ☐ A responding organization may wish to use the COVID-19 Questionnaire with their employees before sending them to the requesting organization. *(See COVID-19 Mutual Assistance Questionnaire.)*

- ☐ Requesting organizations should minimize movement of crews to different regions in their territory. By assigning the same crews to the same work areas, cross pollination and potential exposures are limited. Note, this may require additional resources and could impact restoration times.

- ☐ Investor-owned electric companies, public power utilities, and electric cooperatives should consider moving toward more isolated and self-contained responding teams, where necessary, to limit the exposure between crews who work for the requesting organization and responding crews. Keep crew teams intact to minimize exposure and execute "transfer of control" best practices for restoration, when possible, to limit exposure between crews of the requesting organization and responding crews.

- ☐ When information is available, requesting organizations should avoid sending responding crews into areas or facilities with significant COVID-19 outbreaks. The requesting company should restore in those areas.

- ☐ When information is available, the requesting organization should provide full situational awareness of the COVID-19 impact, the number of cases in the community (or region), and what protective measures are in place to responding crews and their organization, with regular updates.

- ☐ Requesting organizations should clarify how long they expect responding crews to be in their area.

- ☐ Requesting organizations should identify a liaison who can work with each responding entity to provide information about local conditions. Consider providing this information in advance of receiving responding crews.

- ☐ Requesting organizations should try to minimize person-to-person contact for material distribution and use drop points.

- ☐ Requesting organizations should use technology for onboarding and briefings (e.g., online conferencing services, conference calls) or conduct briefings in the field to reduce large meetings. Have safety onboarding on videos that can be distributed to crews in advance, with conference calls for Q&A. Conduct daily briefings remotely where feasible.

- ☐ If practicable, extensive pre-staging should be avoided unless the threat is imminent. Pre-staging should follow social distancing practices.

- ☐ Requesting organizations should look for opportunities within the restoration process to execute the function remotely (dispatching functions, advanced metering infrastructure (AMI) functionality, assessment, etc.).

- ☐ Both requesting and responding organizations may want to consider screening of crews using non-contact thermometers before deployment and upon arrival to verify employees do not have fevers equal to or above 100.4 F. According to the CDC, a lower temperature threshold (e.g., 100.0 F) may be used.
- ☐ Organizations should encourage workers to report situations to their supervisors in which social distancing cannot be maintained so mitigation options can be explored.

General COVID-19 Safety Practices

- ☐ If you are sick or have any flu-/virus-like symptoms, report this immediately to your supervisor and consult your physician.
- ☐ Cover your coughs and sneezes with a tissue, then immediately throw the tissue in the trash.
- ☐ Wash your hands often with soap and water for at least 20 seconds, especially after going to the bathroom; before eating; and after blowing your nose, coughing, or sneezing.
- ☐ Avoid touching your eyes, nose, and mouth with unwashed hands.
- ☐ Regularly clean your phones and handheld devices as these are some of the dirtiest items we carry.
- ☐ Maintain social distancing whenever possible [six (6) feet distance from anyone coughing or sneezing]. Avoid shaking hands and touching others.
- ☐ Use “non-circulating mode” for vehicle air conditioning/heating/ventilation.

Staging Sites

- ☐ Requesting organizations should consider having staging sites that allow social distancing recommendations to be followed (currently 6 feet of distancing at all times). Note: this may require organizations to request more self-sufficient resources, such as crews from investor-owned electric companies, public power utilities, and/or electric cooperatives rather than contractors.
- ☐ Cleaning supplies, hand sanitizer, sanitation supplies, etc. should be available for all crews located at staging areas.

Lodging and Meals

- ☐ Requesting organizations should establish lodging and dining sites where social distancing can be established, and the requesting organization can manage and control access and direct sanitation.
    - Keep crews that are working together in the same lodging and dining facilities.
    - This can include appropriately sized sleeper trailers, tents, renting out entire hotels/motels, or nontraditional spaces for crew-only use. If shared lodging is necessary, consider allowing workers who share a vehicle and/or are on the same crew to share lodging facilities. Sleeper trailers and similar facilities should be used at reduced capacity.

- Consider ways to maximize social distancing, such as keeping different organizations on different floors, minimizing servicing of rooms, having pickup locations for linens and room supplies, or limiting rooms to one per person, where necessary.
- Consider working with local authorities to develop exemptions from emergency closure and/or stay-at-home orders for hotels or other lodging facilities and their staff so they can serve mutual assistance crews.
- Have a plan for feeding crews in the event restaurants are closed by government order.
- Have lodging, dining, and common areas cleaned following CDC guidelines. *(See CDC recommendations.)*
- Cleaning supplies, hand sanitizer, sanitation supplies, etc. should be available for all crews located at all lodging and meals areas.
- Provide laundry service, if needed.
- Minimize travel in large vehicles such as buses by having crews use trucks for transportation between lodging and work sites.
- Have vehicles cleaned following CDC guidelines. *(See CDC recommendations.)*
- Try to minimize exposure by providing box lunches, snacks, water, etc.
- Electric companies, public power utilities, and electric cooperatives should check with hotel operators to confirm preferred hotels will remain open for mutual assistance crews. If hotels currently are closed, verify the length of time necessary for operators to reopen hotels, which could delay access to lodging.

External Outreach and Communication

- ☐ Requesting organizations should proactively communicate to regulators and government partners that power restoration and recovery may be slower due to the new response regime. Establish and disseminate information to customers that travel and restoration times may be longer.
- ☐ Requesting organizations should proactively communicate with customers about social distancing efforts. Ensure responding crews have consistent messaging and practices.
- ☐ Requesting organizations should work with local and state officials to ensure responding crews are designated as critical workers and are able to travel to and through the requesting entity's service territory. Travel documents and authorizations from requesting organizations should be as specific and clear as possible.
- ☐ Requesting organizations should consider sharing the Department of Homeland Security's *Guidance on the Essential Critical Infrastructure Workforce* with local and state officials to support waivers for quarantine requirements and to minimize limitations on crew movement.

Health Issues

- ☐ Requesting organizations and responding crews should utilize the COVID-19 Visitor Questionnaire to evaluate health risks. [*See COVID-19 Mutual Assistance Questionnaire and follow CDC guidance on health screening. (See CDC recommendations.)*]
- ☐ Workers who become ill should follow CDC guidelines. *(See CDC recommendations.)*
- ☐ Workers should minimize the use of currency and use credit cards instead to avoid hand-to-hand contact.
- ☐ Follow CDC recommendations for when individuals infected with COVID-19 can discontinue home isolation and return to work. *(See CDC recommendations.)*
- ☐ Follow CDC recommendations on implementing safety practices for critical infrastructure workers who may have had exposure to a person with suspected or confirmed COVID-19. *(See CDC recommendations.)*
- ☐ Before sending crews for mutual assistance, consider how your organization would quarantine workers after deployment if they were exposed during the mutual assistance work or how you would comply with local and/or state requirements.
- ☐ Organizations should consider what, if any, mitigation measures are needed when workers return from mutual assistance deployments. This may include contact tracing procedures (see below), testing policies, work practices and isolation policies, as well as coordination with local and state health officials.

CDC Recommendations (Updated)

Interim Public Health Recommendations for Fully Vaccinated People
https://www.cdc.gov/coronavirus/2019-ncov/vaccines/fully-vaccinated-guidance.html

Guidance for Business and Employers
Guidance for Businesses and Employers Responding to Coronavirus Disease 2019 (COVID-19), March 8, 2021 - CDC

Cleaning and Disinfection Recommendations
Cleaning and Disinfection for Community Facilities - CDC

What to Do If You Are Sick
What to Do If You Are Sick - CDC

Guidance for Large Events (for unvaccinated people)
Community Organizations and Gatherings - CDC

Interim Guidance for Discontinuation of Home Isolation for Persons with COVID-19
Discontinuation of Isolation for Persons with COVID-19 Not in Healthcare Settings - CDC

Implementing Safety Practices for Critical Infrastructure Workers Who May Have Had Exposure to a Person with Suspected or Confirmed COVID-19
COVID-19 Critical Infrastructure Sector Response Planning - CDC

Protecting Workers: Guidance on Mitigating and Preventing the Spread of COVID-19 in the Workplace – OSHA
https://www.osha.gov/coronavirus/safework

COVID-19 Mutual Assistance Questionnaire

Current as of 7/7/21

The health and well-being of employees, strategic partners, families, and visitors remains our industry's top priority. To prevent the spread of COVID-19 and to reduce the potential risk of exposure to our workforce, contractors, and visitors, we are requesting mutual assistance workers fill out a simple screening questionnaire. The participation of the screening questionnaire is required for all visitors/contractors who are expected onsite and for employees who are responding to a mutual assistance request at another investor-owned electric company, public power utility, and/or electric cooperative. This will be required for each contract employee or visitor prior to coming onsite or travelling to another investor-owned electric company, public power utility, and electric cooperative.

Visitor's Name:	Personal Phone Number (mobile/home):
Visitor's Organization:	Name of Requesting Organization Sponsor:
Facility Name:	

SELF-DECLARATION BY VISITOR

Have you returned from any of the countries listed by the CDC as a travel/health advisory warning for Covid-19 Level 3 or higher in the last 14 days? Current list can be found here: Travel Health Notices - CDC

□ Yes □ No

Have you returned from any of the states with travel restrictions within the last 14 days? Links to state health departments can be found here: State & Territorial Health Department Websites - CDC

□ Yes □ No

Have you had close contact with or cared for someone diagnosed with COVID-19 within the last 14 days?

□ Yes □ No

Have you been in close contact with anyone who has traveled within the last 14 days to one of the countries listed as a level 3 or higher travel/health advisory by the CDC for Covid-19? □ Yes □ No

Have you been in close contact with anyone who has traveled within the last 14 days to one of the states listed in the domestic travel advisory by the CDC for Covid-19?

□ Yes □ No

Have you experienced any cold or flu-like symptoms in the last 14 days (to include fever of 100.4 degrees F or higher, dry cough, difficulty breathing, or shortness of breath)? According to the CDC, a lower temperature threshold (e.g., 100.0 F) may be used.

□ Yes □ No

Have you or any member of your household traveled within the last 14 days?

□ Yes □ No

Please report any air travel, cruise ship travel, and/or destinations visited within the last 14 days, both work-related and personal travel.

If you answer "yes" to any of the questions above, access to the facility will be denied.

Signature (Visitor): _____

Date: _____

Note: If you plan to be on requesting organization's property for consecutive days and your response to this self-declaration changes, please notify your requesting organization sponsor immediately.

Please complete and return this form electronically to: POC

ACCESS TO FACILITY (circle one): APPROVED DENIED

Lessons Learned: 2020 Response Efforts

During 2020, the electric power industry undertook many restoration efforts to address outages caused by severe windstorms, ice events, hurricanes, and wildfires while confronting the challenges of conducting mutual assistance during the COVID-19 pandemic. Following are some key lessons learned from these weather events.

The Mutual Assistance Response

- Overall, the mutual assistance response and restoration processes worked well during these storms. Organizations providing mutual assistance used the ESCC COVID-19 protocols to ensure social distancing and proper hygiene and to keep employees, contractors, and customers as safe as possible.
- COVID-19 safety procedures did not create significant delays in restoration efforts. In some cases, productivity gains occurred because crews were closer to work locations and materials and supplies were delivered or obtained from multiple, decentralized locations.
- Decentralized distribution worked well, including using runners to distribute materials.
- Large staging sites were not used, where possible.
- PPE was brought by responding crews, but requesting organizations did supplement where needed.
- Conducting temperature checks of arriving workers while in vehicles helped eliminate lines and speed up on-boarding.

Work Practices

- Onboarding, briefings, work order distribution, and meetings were conducted successfully while maintaining distancing protocols. Organizations used electronic methods and communication tools, as well as steps such as meeting outside in small groups.
- The ESCC health screening questionnaire was used by organizations.
- Some entities processed all off-system responders with touch-free temperature checks and health questionnaires.
- Safety debriefs were conducted remotely via electronic tools, videos, etc. In some instances, DocuSign was used as proof of review, otherwise crew leaders were requested to collect written documentation.
- Most organizations had one worker per vehicle.
- Responding crews met requesting organizations' representatives in decentralized locations such as parking lots for onboarding.
- Work orders were issued using electronic tickets and were supported by decentralized planners. Some organizations assigned staging sites and work orders at lodging locations.

- Damage assessment personnel were staged off-site or in vehicles to avoid contact with others. In some instances, deploying damage assessors was a challenge, as was developing precise estimated times of restorations.
- Good monitoring and management of responding contractors helped to ensure they had and utilized appropriate PPE (masks) and followed social distancing protocols. Some entities found using a coordinator, liaison, or consultant to assist in assessing COVID safety practices at base camps, staging sites, and other locations was very helpful.

Lodging, Meals, and Support Services

- For the most part, hotel rooms were readily available except in the most rural locations. Responders were placed one person to a room.
- However, in some locations where workers shared a vehicle, those workers were permitted to share a room.
- Organizations should continue to engage closely with hotels, restaurants, and caterers to ensure their availability for future incidents.
- For future responses, organizations should keep in mind that some hotels require a 3-day buffer in rooms between guest stays.
- Organizations should consider using boxed meals to facilitate social distancing to avoid problems with restaurant closures. For future large-scale events, consider food trucks and caterers who can provide boxed meals.
- The number and storage capacity of meal delivery vehicles should be increased to deliver boxed meals, food storage containers, and coolers.
- Portable bathrooms may be required in areas where public facilities are closed, especially in non-urban areas.
- Organizations should identify high-traffic areas, like water dispensing locations, that can create social distancing challenges.
- Organizations should avoid dispensing beverages from coolers.
- Delivering meals and work packets directly to hotels where responders are housed can help reduce the number of personnel who need to go to base camps or staging sites.

Challenges and Improvement Opportunities

- It was a challenge to ensure crews kept social distancing at meal locations, while using elevators in hotels, or in hotel lobbies. Additional supervision/leadership may be needed for future responses.
- Crews experienced somewhat more “windshield” time depending on where they stayed due to efforts to ensure lodging was one person per room and to keep crews and job sites segregated.
- Additional vehicles were required to support restoration.
- Due to decentralization, more local supervision/leadership, material runners, and logistics runners were needed to support the response.

- Large-scale power outages can impact electric industry employees who are teleworking and may need to support mutual assistance. Consider having alternate work locations and assessments of employees' ability to work during outages.
- Similarly, large-scale outages can impact the availability of lodging and meal facilities in the impacted areas. Consider alternate sites, wrap-around support service providers, and how support service contractors may be affected.
- Some PPE challenges included having adequate touch-free thermometers and masks.
- Hotels may not provide adequate space for trucks, which may require responders to be transported by bus to base sites, creating social distancing challenges.

Planning Considerations for COVID-19 Contact Tracing During Mutual Assistance

- Investor-owned electric and/or natural gas companies, electric cooperatives, and public power utilities should implement and utilize contact tracing programs to identify and assist employees who may have been exposed to the virus.
- Organizations should consider how those tracing programs would be utilized during a mutual assistance deployment that includes non-native employees/contractors from other organizations.
- Prior to the mobilization of crews, a requesting organization should provide responding organizations, including contractors, with an overview of how it will conduct contact tracing for any mutual assistance crew member who tests positive, or has been exposed to the virus, while deployed.
- These contact tracing plans for mutual assistance deployments should consider addressing the following:
  - Reporting
    - What process should a mutual assistance crew member use to report a positive test result, symptoms, or possible exposure to the virus?
    - Will the requesting/responding organization provide access to testing and access to medical care for mutual assistance crew members with symptoms?
  - Mitigate
    - How will the requesting/responding organization support the isolation of the impacted crew member? Will that crew member(s) be released and required to return home immediately?
    - Will the entire crew be required to isolate, or will they be released from the mission?
  - Investigate
    - Will the impacted mutual assistance crew member be included as part of the requesting organization's internal contact tracing efforts?
    - Will mutual assistance crews be required to complete additional documentation, such as detailed logs and summaries of locations visited, to facilitate contact

tracing investigations? If so, how will this be facilitated, and what is the retention policy for that documentation?

- Inform
  - Will the requesting organization be required to inform local health authorities when a mutual assistance crew member reports positive test result to the virus?

- How will other native and non-native crews, base camp support teams, other housing support staging site staff, food service staff, and customers be informed of the potential exposure?
- Additional information and planning considerations are included in the "Responsible Reentry and Return to the Workplace" section of this Resource Guide and in a two-page contact tracing document that is available on the ESCC website at www.electricitysubsector.org.

Generation Operational Continuity

Section Summary

This section provides guidance to investor-owned electric companies, public power utilities, electric cooperatives, independent power producers, and federal government-owned utilities responsible for the safe and reliable operation of generation power plants and generation control centers during and throughout the COVID-19 pandemic. This section:

- Develops credible scenarios that could impact generation operations.
- Identifies mitigation options, supports information sharing across the industry.
- Outlines needed government actions.

The guidance in this document was collected from organizations across the industry. The intent is to serve as a general information resource and not to set any industry standards. This document is evergreen and will be updated regularly to reflect additional or revised guidance as it is received.

Governmental Support Needs

The mitigation strategies for the scenarios described below cannot be executed unless: (1) COVID-19 testing is available and streamlined for essential personnel who work in shift environments, i.e., operations personnel; (2) relief from certain regulatory obligations is obtained to ensure the continued availability of operators and other skilled employees; (3) travel restrictions for the general public exclude personnel essential to the reliable operation of generating facilities; and (4) supplies for cleaning/hygiene are readily available.

A summary of specific government actions ESCC leadership could advocate for to ensure successful mitigation of risk to control center continuity is presented below:

- **High Priority**
  - Request that governmental authorities direct medical facilities to prioritize testing for asymptomatic generation control room operators, operator technicians, instrument and control technicians, and the operations supervisor (treat comparably to first responders) in advance of sequestered, extended-duration shifts; and obtain state regulatory approval for corporate health services organizations to administer testing for coronavirus to essential employees, if applicable.

  - Request that governmental authorities direct medical facilities to prioritize testing for asymptomatic control room operators (treat comparable to first responders) in advance of sequestered, extended-duration shifts; and obtain state regulatory approval for corporate health services organizations to administer testing for coronavirus to essential employees, if applicable.
  - If local, regional, state, or federal governments enforce a populace-wide quarantine/curfew or other travel restrictions, ensure that operators of generating facilities still can move freely outside of hours.
  - Request EPA and state level permitting agencies allow for non-compliance operations of generating facilities in the event sufficient resources or personnel are not available.

- **Medium Priority**
  - Obtain authority for priority supply of sanitizing supplies and PPE for generating facilities.
  - Obtain state approval for non-medical professionals (such as generating facility employees) to administer health questionnaires and temperature checks without ADA or other legal constraints.
  - Obtain enough Fire Retardant (FR) clothing (vests and hoods) and PPE, including masks and face coverings, to enable technicians to conduct work and not have to share items. Generation entities also are encouraged to seek FR clothing and PPE from vendors and other suppliers in their local areas, if available.

Identifying Essential and Critical Generation Personnel

The personnel needed to staff and operate generating facilities are essential to the reliable operation of the energy grid. The facilities needed to perform these functions generally are well-isolated and physically secure, or at least conducive to the sequestration of on-site staff as needed. However, given the long lead times required to train personnel to operate and maintain control systems at generating facilities properly, the limited number of people with these qualifications places a higher risk to reliable operations and requires a higher priority for protection from the spread of COVID-19 than the general population. Individual organizations still will have discretion to identify essential personnel unique to their organization, but a more uniform approach to categorizing staff will support the communication of likely areas of government support at the local, state, and federal levels.

Non-Nuclear Generation Personnel

Specific to non-nuclear generating facilities, each organization has employees who fit into two categories, with essential personnel being extremely difficult to replace given training and familiarization with each specific generation plant control room:

- **Tier One – Essential Generation Employees**
  - Control Room Operators
  - Operator Technicians
  - Instrument and Control Technicians (I&C Techs)
  - Operations Supervisor/Team Leader/Shift Supervisors
- **Tier Two – Critical Generation Employees**

- Chemical/Lab Technician
- Maintenance (Mechanical, Electrical)
- Materialman (Warehouse)
- Contractors – Ash Handling, Emergency Maintenance Repair, Critical Commodities, OEM
- Other Support – Engineer, Specialist, Accounting

Nuclear Generation Personnel

The Nuclear Regulatory Commission (NRC) and federal statutes have very specific reliability and security requirements for the operation of a nuclear generating station. Therefore, as it stands, nuclear generation owners and operators are obligated to staff their plants as normally required.[2] Tier two employees are not required by the NRC, however, the loss of Tier two employees may result in insufficient support for plant operators over time. The job titles of these nuclear generation employees are:

- **Tier One – NRC-required Essential Nuclear Generation Employees**
  - Licensed control room operators and designated supervision
  - Non-licensed operators
  - Radiation protection technicians
  - Fire brigade members and designated supervisor
  - Maintenance personnel (I & C, electrical and mechanical)
  - Armed security officers, armed responders, and other committed positions in the physical security plan
  - Emergency Response Organization positions described in licensee's emergency plan
- **Tier Two – Critical Nuclear Generation Employees**
  - Engineering Support
  - Maintenance Support
  - Management/Administrative
  - Procurement
  - Quality Assurance

[2] Title 10 Code of Federal Regulations (CFR), Parts 50 and 73, essential workers for commercial nuclear power reactors are specified in each facility's licensing basis. The applicable licensing basis documents are the licensee's Technical Specifications, Physical Security Plan, and Emergency Plan. These documents describe the site-specific positions required for plant operations, physical protection of the plant, and implementing emergency measures – all are needed to maintain the plant's operating license.

Scenario Development

Given the limited ability of generating facilities to be operated remotely, mitigating strategies and contemplation of other issues must be developed to ensure adequate generating facility availability and operation. The scenario contemplated incudes 40 percent workforce attrition, a nine-month pandemic, and no mutual assistance. This scenario will test the effectiveness of social distancing and quarantine and the need for proactive testing of priority employees (and/or essential contractors). Mitigating strategies and other important considerations will be contemplated under the framework below. The mitigating strategies will attempt to represent existing industry and government policies, standards, and capabilities, as well as proposed actions going forward. Some entities have used this 40 percent workforce attrition scenario as the basis for designing plans to address COVID-19 reduced operations and have implemented these plans prior to the arrival of a positive test at generating plants. Early adoption of these reduced operation plans may minimize the impact to workforce attrition as the pandemic continues, while ensuring the ability to run facilities.

Possible Mitigation Strategies for Scenarios

This section first describes universal preventive measures that should be taken prior to having any essential employees with COVID-9, in addition to measures that would apply in all scenarios where employees are diagnosed with the virus. Thereafter, specific recommendations for the escalating impacts of the above scenarios are provided.

Universal Mitigation Strategies

- Involve union leadership in discussions around possible mitigation strategies up front to ensure transparency and collaboration.
- Proactively develop and communicate compensation, attendance and reliability, PTO, and related polices that will apply during these conditions.
- Encourage social distancing at work and on personal time; identify opportunities to create greater physical separation of operator workstations; utilize adjacent rooms where possible; eliminate interactions across shifts.
- Reinforce good personal hygiene practices; conduct home self-administered wellness checks prior to departure for shift; ensure CDC & State Health Org flyers are posted at control room entrance(s); deliver pre-shift safety-hygiene message(s).
- Incorporate the CDC's most current travel advisories into event planning and travel arrangements and consider practices to increase awareness of employees' personal travel plans to areas with active advisories.
- Require employees who travel to a location with a CDC Level 3 Travel Health Notice to adhere to a 14-day self-quarantine at home and be cleared by their organization's health services before they return to work.
- Require COVID-19 testing of asymptomatic control room operators and support staff to the extent available.

- Increase the frequency and extent of cleaning and disinfecting surfaces and equipment that comes into routine contact with multiple people.
- Secure resources and establish processes for further sanitizing and segregating work areas in the event exposure occurs.
- Provide a dedicated building entrance, a significant distance from all other employees, for all personnel working in the control room.
- Do not allow outside visitors in control rooms or other designated protected areas (e.g., no tours or non-essential personnel from the same organization).
- Implement additional access restrictions, such as limiting visitors or non-essential meetings within spaces in proximity to control centers.
- Screen non-badged contractors/vendors with health questionnaire and temperature check before allowing on site for deliveries, repairs, etc., and limit access during this time to critical activities only.
- Segregate crews on shift work schedules. Split operators (days/nights) or split individual shifts.
- Cut back control room operators to a minimum.
- Ensure business continuity plans have clearly defined thresholds and procedures for initiating organization's shelter-in-place, sequestration, and self-quarantining of essential personnel.
- Sequester a complete healthy shift (if available) and hold that shift in reserve for extreme scenarios, such as when minimum staffing levels cannot be met.
- Develop a resource plan for potential use of retirees, supervisors, managers, engineers, and recently transferred operators with the requisite skills to backfill operators and support staff in the event staffing is reduced due to COVID-19 infections.
- Allow generating facility support staff (engineering, compliance, maintenance, etc.) to work remotely to the extent permissible within remote access and cybersecurity requirements of the organization.
- Ensure information and communications technology resources are appropriate to accommodate increased use of remote work arrangements consistent with business continuity plans, without compromising security. Consider conducting planned stress tests for these arrangements.
- Develop logistics to house operators on-site, including bedding, entertainment, and food accommodations.
- Identify alternate workstations outside of the control room that can monitor and possibly control all or a limited part of a generating unit. Alternate workstations can allow operators to monitor unit functionality while a "dirty" control room is cleaned and returned to service.
- Begin planning a 'return-to-work' protocol for mission-essential staff who test positive or who are exposed to COVID-19 and complete any required self-quarantine period. A protocol will be needed to integrate these employees back into shift. Use CDC guidance to determine the criteria (e.g., the length of time an employee needs to remain symptom free, if he/she is exposed at home, and what PPE should be mandated, etc.).

- Ensure workers wear face coverings or masks at generation plants, both in sequestration and/or reduced operations, to minimize the spread within the workforce per CDC guidance.[3]
- Given that distractions might increase during these unpredictable times, remind essential employees to be vigilant and aware of surroundings. Management and supervisors should recognize and reward awareness efforts by employees.
- Eliminate non-essential work, especially if it would require two or more people to be within 6 feet.
- Alter assignments for work tasks that must occur in proximity (less than 6 feet) by pairing technicians into a "team" and do not rotate individuals with other teams – ensure technicians have appropriate face coverings and other PPE.
- Ensure FR clothing and PPE (including masks/face coverings) are not shared between employees or contractors.
- Ensure that there is only one employee per vehicle, per shift, where possible. Adopt appropriate cleaning procedures between shifts.

Scenarios – Single Operator Impacted

A mission-essential control room operator or technician in the primary control room tests positive for COVID-19. Both categories of employees work in tightly controlled shifts in terms of working hours, skill sets, and physical proximity during work. A positive case in any shift comes with a high risk of infection for other personnel in the same shift if the infected individual is not identified quickly.

While there is some amount of redundancy in skills sets on a single shift, allowing for a degree of interchangeability, this option does not apply to all positions and is limited in both the quantity of people available and the duration of operational tempo. Having at least one confirmed case during a shift puts the entire crew at risk for infection. The control room would require disinfection. Furthermore, the employees in contact with the infected employee would require observation and possibly testing to clear them to return to work.

Mitigation Strategies

- All staff on shift with the impacted operator(s) should immediately be self-quarantined, and the work hours/coverage of all non-impacted shifts extended. Ideally a relief shift would be available to cover the employees removed from duty.
- Execute sanitizing procedures with a pre-approved contractor to clean the control room area.
- Utilize alternate workstations, if available, to ensure unit operation can continue while the control room is disinfected and returned to service.
- A body temperature screening process should be used, or symptoms should be reviewed before admission into control rooms. This typically is required to be performed by licensed medical professionals and may require relief from HIPAA requirements for supervisors/managers to perform if necessary.

[3] Considerations for Wearing Masks - CDC

- A supplemental staffing plan should be implemented, and refresher training and simulations offered (if needed) for supervisors, managers, engineers, and retirees with the requisite skills to backfill control room staff in the event control center staffing is further reduced due to COVID-19 infections.
- The family circumstances of operators impacted by self-quarantine should be considered, and assistance/support should be offered where needed to ensure quarantined operators do not feel they are placing their family at risk (e.g., transportation, housing, childcare, eldercare, video chats).
- To return employees back to work, access to testing and analysis must be prioritized and made available.
- Have HR or Incident Command (IC) preemptively provide direction to supervisors about next steps if someone tests positive. A standard series of questions to help with an investigation should be considered, following applicable regulations, that discuss isolation (does employee have support to do that?). HR/IC should investigate direct contact or close contact (30 minutes or more) between employees. Additionally, HR/IC should determine which notifications need to go out throughout the organization. Rather than sending out a communication on every case, consider discussing incidents in a weekly call for all employees.

Case Studies and Lessons Learned from COVID-19

As the electric power industry continues its response to COVID-19 and pandemic plans remain activated, this section will be updated with anonymized real-world case studies and lessons learned to inform other organizations' pandemic planning and operations.

Generation Scenario – "I don't feel well."

At approximately 9:15 a.m., a control room board operator alerted the shift supervisor that he was not feeling well. Specifically, the operator felt some chills and thought he possibly had a fever. The shift supervisor immediately called disability management. The operator left the work area and was sent for medical care. Although it was not known if the operator was sick, site management considered the control room "dirty" and in need of cleaning. A review was held to determine if other employees were exposed, and disability management assisted with caring for those employees.

Per the site Pandemic Plan, an available operator was sent to the engineering workstation where the unit could be controlled and monitored safely. Access to the control room was stopped and the pre-approved cleaning contractor was called to clean the control room. By the end of day, shift operators could reenter the control room.

- **Case Study Lessons Learned**
  - Employees should speak up if they do not feel well.
  - Disability management should be contacted immediately for guidance.
  - Pandemic plans should have guidelines in place for this type of event.

Generation Scenario – Operator Tests Positive, Commence Safe Shutdown

A generation control room operator began coughing on Day 1, the last night shift of the scheduled rotation (the crew practiced social distancing). On Day 11, the employee returned to shift with a cough. The plant manager heard the cough and sent the operator home. After a diagnosis of bronchitis by a physician, the employee returned on Day 16, worked until Day 18, and then left for previously planned paid time off. On Day 20, the employee returned to the physician not feeling well, and was tested for COVID-19. On Day 22, the employee tested positive for COVID-19.

Due to the positive test, the operator's two crewmates also were sent home for 14 days of self-isolation, even though neither had symptoms. Given critical and sensitive equipment in the control room, the decision was made to remove the unit from service in a controlled manner immediately, instead of waiting for a scheduled hard trip-out on Day 22, without impact to overall grid reliability. A thorough deep clean was conducted. Employees could not be in the areas while the disinfecting process took place, so the non-operational plant was monitored from the remote engineering workstation. This engineering station was suitable for monitoring but could not safely control an operating unit.

Once deep cleaning was completed, employees could return, and the plant resumed operation.

- **Case Study Observations**
  - Multiple individuals are unable to work based on exposure, not symptoms. Having access to testing with readily available results potentially would return those individuals to shift.
  - Organizations should use a cleaning process with a heavy misting spray system, with products that saturate the areas with a stronger concentration.
  - Plant management exhibited a good proactive response by sending possibly infected employees' home as quickly as possible to prevent further spread of the disease.
  - Other craft employees should encourage employees to discuss with supervisors when they are exhibiting symptoms.
  - Prior to the event, plant management contracted with a vendor to come daily to perform "Tough Point" cleaning with an antibacterial product on all personnel spaces. This activity continues.

Sequestration for Generation Considerations

Owners and operators of generating units will consider the sequestration of mission-essential generation control center staff to keep them healthy and to ensure continuity of operations. Separating these essential and hard-to-replace employees from their families is not an easy decision, but it is a decades-old industry practice to ensure electricity is available in times of need.

This section lays out important guidance and suggested critical lessons learned from generator operators, nuclear generating stations, and independent power producers already practicing sequestration during the COVID-19 pandemic. To ensure that a sequestration plan is implemented effectively and that enough employees are willing to volunteer to be sequestered, the quality and availability of support services are critical.

Suggestions for Sequestration at a Generation Plant

- **Hygiene**
  - Establish clear, hygienic shift turnover practices.
  - Establish a clear, hygienic procedure for shift relief after two weeks.
  - Follow clear sanitization procedures at beginning and end of every shift.
  - Remember that the external environment (i.e., cold) can influence temperature readings when conducting screens and lead to false readings. Consider rapid testing if available.
- **Mission-Essential Personnel**
  - Perform temperature checks of all personnel entering the plant site (employees and contractors), following CDC recommendations.
  - Reinforce social distancing and secure control room personnel to limit/prevent exposure in the event of a suspected or confirmed case. Perform routine temperature checks of plant-sequestered employees to monitor conditions.
  - Develop a procedure for handling critical chemicals and supplies.
  - Reduce or eliminate employees moving from one site to another.
  - Close as many gates and access points on a site as possible. Minimize traffic.
- **Other General Lessons for Entities Implementing Sequestration**
  - Communicate relentlessly. Use all platforms.
    - Provide general employees with updates.
    - Tell employees who do not feel well that it is ok to stay home.
  - Follow internal accounting and human resources policies to ensure appropriate record keeping.
  - Maintain an engaged business continuity team (corporate level) to support the site.
  - Use volunteers as much as possible.
  - Negotiate with unions before sequestration to develop appropriate HR processes.

Different Approaches to Sequestration

The following chart describes different approaches taken by generation operators practicing sequestration.

	Generator A	Generator B	Independent Power Producer A	Independent Power Producer B	Lesson
Trigger for sequestering	Statewide outbreak. Generator A proactively sequesters employees to prevent attrition.	Low reserves coupled with COVID threat led Generator B to decide to sequester employees to maintain fleet reliability.	Employees exhibiting flu-like symptoms and potential exposure to approximately 90% of plant personnel.	Company decision not to be a conduit of infection among employees. Some sites have a small staff, cannot afford attrition. Did not want to wait for confirmed cases in the workforce.	Drivers to sequester can include many factors including surrounding area infection rates.
Type of employees sequestered	Control Room Operators, Field Operators, Operations Supervision, Security, Cleaning Staff, Contractor Operators	Control Room Operators, Control Room Supervision, Technicians	Control Room Operators, Operations and Maintenance Manager, Outside Operators – day and night shift	Control Room Operators, Outside Operators, and I&C Techs. No contractors sequestered, and contractors are kept offsite unless essential.	Control Room must be isolated, and a clean environment must be maintained. Consider assigning keyboards / mice to each specific operator. Shut down the plant and perform deep cleaning of the control room area using outside cleaning resources.
Sequester location	Onsite in two separate areas: 1. Testing / triage 2. Housing	Offsite hotels Hotel rooms are plentiful Caterer or Hotel meal prep	Onsite; trailers brought in for lodging, shower capability onsite, food brought in from offsite	Site dependent Mobile Homes / RVs; offices Employees washing own linens onsite, arrangements made with wholesaler and local businesses for food. Wi-Fi network extended for personal use.	Onsite requires more logistical coordination for accommodations, food, room sanitization, linens, entertainment. Hotel easier to implement meal prep, hotel sanitization practices, transportation, linens. Food left at the gate for pick up.

Sequester schedule	2 weeks / 12-hour shifts	2 weeks / 12-hour shifts	6 days / 12-hour rotating shifts	14 days / 12-hour shifts	Put criteria in place for employee "At Home Reserve" with protocols to follow away from work to ensure health. Employees at home regardless of classification are paid straight time. Maintain list of potential people to supplement operators (e.g., retirees). Non-sequestered employees paid their regularly scheduled hours to stay home. Sequestered employees paid for all hours inside the plant (straight time for regularly scheduled shift, time-and-a-half for all other hours). Next sequester crew identified and monitored.

Mutual Assistance for Generation Considerations

This section is designed to provide requesting and responding investor-owned electric companies, public power utilities, independent power producers, and electric cooperatives guidance on considerations for mutual assistance when needed to continue generation plant operations during the COVID-19 pandemic.

Specific guidance for traditional mutual assistance during this pandemic can be found in the "Mutual Assistance Considerations" portion of this Resource Guide.

Regardless of the method of staffing generation plant control rooms, the safety and health of all employees is the priority. Site-specific and company-specific training will be required to operate any generation plant.

Mutual assistance normally is used to help restore electric service to customers and typically is focused on transmission and distribution infrastructure. The COVID-19 pandemic has motivated generation entities to consider the use of mutual assistance for generation plant operation.

Considerations for Fossil, Gas, Nuclear, and Renewable Generators:

Personnel

Consider the use of existing employee work stoppage plans as a resource in planning for the use of personnel not currently assigned to plant operation.

- Keep a central list of all employees with skills who can be called from corporate/tech support (such as former operators or plant engineers/managers) and use that list for consistent communications across the fleet.
- Maintain a list of retirees or other individuals with relevant qualifications who could be called upon to help operate the control room first, prior to reaching out to another company/utility.
  - Consider recent control-board-trained operators (retired, transferred, etc.) for temporary employment.
  - Share retiree list, including qualifications, with other companies for operators.
  - Keep in mind retirees likely will fall into a higher-risk group for COVID-19.
- Consider the use of third-party contractor operators to supplement plant operators, keeping in mind they may lack familiarity with the site and will require additional training and supervision.
- Create a thorough list of experience and qualifications needed to operate a particular unit. Important details include fuel type, OEM technology, DCS type, environmental controls, certifications, etc. Consider proactively sharing this information internally within your company first and then with neighboring companies.
  - Provide sufficient detail from manufacturers (Emerson Ovation, GE Mark VI, ABB, Honeywell, etc.) without exposing proprietary information.
- Subject to maintaining compliance with pertinent regulatory requirements and NERC Reliability Standards, if reserves permit and the system operator concurs, consider optimizing fleet operations and removing non-committed units from dispatch. Transfer qualified operations

personnel from non-running units to other higher priority units to supplement the operational workforce.

- Maintain an active list of qualified operators who have recovered from COVID-19 and who can return to the workplace. A returning worker should meet CDC requirements for returning to work.

  Criteria for Return to Work for Healthcare Personnel with SARS-CoV-2 Infection (Interim Guidance) - CDC

- Make specific requests when seeking mutual assistance for generation control room personnel. Details should include generation type, fuel type (fossil, hydro, single-cycle gas, combined-cycle gas, nuclear, renewable) as well as equipment and process descriptions, etc.
- Consider proactively developing a Mutual Assistance Agreement with strategic companies within the region or system.

Operations

- Subject to maintaining compliance with pertinent regulatory requirements and NERC Reliability Standards, safely shut down and lay up units not committed for dispatch and/or reserve margins based on load forecasts and other business considerations.
- Consider leaving units in extended or planned maintenance outages in that state as long as possible. Operators at these offline sites could be considered available for a site responding to pandemic challenges.
- Consider shifting operation control to remote operation room to limit onsite operators where possible. This may create additional cybersecurity vulnerabilities that will need to be mitigated; coordination with cybersecurity and IT teams will be important.

Specific Consideration for Nuclear Generation

- Nuclear power plants hold robust emergency plans that define indefinite coping strategies for managing the asset in all conditions, including their minimum staffing requirements. Due to regulations, mutual aid is managed by each license holder.

Lodging and Meals

- Incorporate additional employees into sequestering plans if requesting mutual assistance. Considerations should include (but not be limited to) lodging capability, food/snacks/hydration, food restrictions, other personal needs, transportation, etc.
- Additional guidance for lodging and meals for sequestered employees can be found in the “Control Center Continuity” section of this Resource Guide.

Actions to Take if Mutual Assistance for Generation is Triggered

- Review existing mutual assistance agreements to determine if they apply to generation control room personnel and associated indemnification and liability.
- Engage with unions given the pandemic situation and the path forward to supplement the control operator employee base.

- Engage with state and local licensing and commissions for regulatory relief during the pandemic.
- Coordinate with your respective ISO/RTO, TO, and TOP to ensure they are aware of your pandemic plan.
- Identify potential qualified workers who could be called upon to operate a site.
- Consider using the visitor questionnaire from the "Mutual Assistance Considerations" section of this Resource Guide.
- Follow the terms and conditions of existing mutual assistance or mutual aid agreements.

COVID-19 Interim Cleaning and Disinfection Protocol for Generation Control Rooms

Currently, there are no disinfection protocols that have been tested specifically forCOVID-19 as an emerging viral pathogen. Per current CDC recommendations, evidence suggests that the novel coronavirus may remain viable for hours to days on surfaces made from a variety of materials. CDC disinfection recommendations are linked below; the details noted in this document are not meant to supersede CDC's guidance:

Cleaning and Disinfection for Community Facilities - CDC

Cleaning of visibly dirty surfaces followed by disinfection is a best practice measure for prevention of COVID-19 and other viral respiratory illnesses in community settings. Following are recommendations from the CDC's April 1, 2020, guidance on the cleaning and disinfection of rooms or areas where those with suspected or with confirmed COVID-19 cases have visited. This guidance is aimed at limiting the survival of COVID-19 in key environments.

Cleaning and Disinfection Protocols

After person(s) suspected to have COVID-19 has been at facility

- Close off areas used by the potentially ill person(s) and wait as long as practical before beginning cleaning and disinfection to minimize the potential for exposure to respiratory droplets. Open outside doors and windows to increase air circulation in the area. If possible, wait up to 24 hours before beginning cleaning and disinfection.
  - Due to criticality, some areas (i.e., control rooms) may require immediate disinfection and operation from remote locations such as DCS rooms.
  - When cleaning the control room, have all operations personnel operate the unit from the DCS room. Before operations personnel depart the control room, have them deenergize all keyboards and mice (removing batteries.) This will prevent the risk of cleaning personnel tripping the unit.
  - Before the contractor begins cleaning the control room, show them the areas that are not to be cleaned, such as red E-Stop push buttons.
  - DO NOT use a bleach cleaning solution on any computer equipment. Use a 70% alcohol cleaning solution.

- Cleaning staff should clean and disinfect all areas (e.g., offices, bathrooms, and common areas) used by the potentially ill person(s), focusing especially on frequently touched surfaces.
- Signage and red barricades will be utilized to prevent access to suspected areas.
- Heads-up notifications will be sent to plant personnel as an alert.
- Appropriately trained and approved contract personnel will handle cleaning and disinfection upon plant request.

How to Clean and Disinfect

Surfaces

- If surfaces are dirty, they should be cleaned using a detergent or soap and water prior to disinfection.
- For disinfection, diluted household bleach solutions, alcohol solutions with at least 70% alcohol, and most common EPA-registered household disinfectants should be effective.
  - Diluted household bleach solutions can be used if appropriate for the surface. Follow manufacturer's instructions for application and proper ventilation. Check to ensure the product is not past its expiration date. Never mix household bleach with ammonia or any other cleanser. Unexpired household bleach will be effective against coronaviruses when properly diluted.
- Prepare a bleach solution by mixing:
  - Five tablespoons (1/3 cup) bleach per gallon of water or 4 teaspoons bleach per quart of water.
  - Products with EPA-approved emerging viral pathogens claim icons are expected to be effective against COVID-19 based on data for harder to kill viruses. Follow the manufacturer's instructions for all cleaning and disinfection products (e.g., concentration, application method and contact time, etc.).
  - For soft (porous) surfaces, such as carpeted floor, rugs, and drapes, remove visible contamination if present and clean with appropriate cleaners indicated for use on these surfaces.
  - If the items can be laundered, launder items in accordance with the manufacturer's instructions using the warmest appropriate water setting for the items and then dry items completely.
  - Otherwise, use products with the EPA-approved emerging viral pathogens claims that are suitable for porous surfaces:

    Novel Coronavirus (COVID-19)—Fighting Products - American Chemistry Council

Linens, Clothing, and Other Laundry Items

- Do not shake dirty laundry; this minimizes the possibility of dispersing virus through the air.
- Wash items as appropriate in accordance with the manufacturer's instructions. If possible, launder items using the warmest appropriate water setting for the items and dry items

completely. Dirty laundry that has been in contact with a potentially ill person(s) can be washed with other people's items.

- Clean and disinfect hampers or other carts for transporting laundry according to guidance above for hard or soft surfaces.

Personal Protective Equipment (PPE) and Hand Hygiene

- Cleaning staff should wear disposable gloves and gowns for all tasks in the cleaning process, including handling trash.
  - Gloves and gowns should be compatible with the disinfectant products being used.
  - Additional PPE might be required based on the cleaning/disinfectant products being used and whether there is a risk of splash.
  - Gloves and gowns should be removed carefully to avoid contamination of the wearer and the surrounding area. Be sure to clean hands after removing gloves.
- Gloves should be removed after cleaning a room or area occupied by potentially ill persons. Clean hands immediately after gloves are removed.
- Cleaning staff should report breaches in PPE (e.g., tear in gloves) or any potential exposures to their supervisor immediately.
- Cleaning staff and others should clean hands often, including immediately after removing gloves and after contact with a potentially ill person, by washing hands with soap and water for 20 seconds. If soap and water are not available and hands are not visibly dirty, an alcohol-based hand sanitizer that contains 60-95 percent alcohol may be used. However, if hands are visibly dirty, always wash hands with soap and water.
- Follow normal preventive actions while at work and home, including cleaning hands and avoiding touching eyes, nose, or mouth with unwashed hands. Additional key times to clean hands include:
  - After blowing one's nose, coughing, or sneezing.
  - After using the restroom.
  - Before eating or preparing food.
  - After contact with animals or pets.
  - Before and after providing routine care for another person who needs assistance (e.g., a child).

Additional Resources

Nuclear Generation: NRC Issues Instructions for Obtaining Relief from Work Hours Rules

On March 28, 2020, Ho Nieh (Director, Office of Nuclear Reactor Regulation) sent a letter to the Nuclear Energy Institute outlining a streamlined process for operating nuclear power reactors to obtain exemptions from the requirements of 10 C.F.R. 26.205(d)(1)-(7). The purpose of the exemptions "is to ensure that the control of work hours and management of worker fatigue do not unduly limit licensee flexibility in using personnel resources to most effectively manage the impacts of the COVID-19 [Public Health Emergency]. . . ." The letter provides that if a licensee determines that its staffing levels will be affected by the COVID-19 emergency and no longer can meet the requirements of 10 CFR 26.205(d)(1)- (7), then the licensee should submit an email requesting an exemption to the facility's NRC project manager (with a copy to the NRC Document Control Desk). The request should be submitted "as soon as practicable and no less than 24 hours before [the licensee] would be out of compliance with the regulations." All such requests should include the following information:

- a statement that the licensee no longer can meet the work-hour controls of 10 CFR 26.205(d) for certain positions;
- a list of positions for which the licensee will maintain current work-hour controls under 10 CFR 26.205(d)(1)-(d)(7);
- the date and time when the licensee will begin implementing its site-specific COVID-19 Public Health Emergency fatigue-management controls for personnel specified in 10 CFR 26.4(a);
- a statement that the licensee's site-specific COVID-19 Public Health Emergency fatigue-management controls are consistent with the constraints outlined in this letter and its attachment; and
- a statement that the licensee has established alternative controls for the management of fatigue during the period of the exemption and that, at a minimum, the controls ensure that for individuals subject to these alternative controls:
  - not more than 16 workhours in any 24-hour period and not more than 86 workhours in any 7-day period, excluding shift turnover;
  - a minimum 10-hour break is provided between successive work periods; 12-hour shifts are limited to not more than 14 consecutive days;
  - a minimum of 6-days off are provided in any 30-day period; and
  - requirements are established for behavioral observation and self-declaration during the period of the exemption.

Supply Chain Considerations

Section Summary

This section provides guidance that investor-owned electric and/or natural gas companies, public power utilities, and electric cooperatives can consider for maintaining adequate supply of inputs and physical equipment during this health emergency. Lists were developed for consideration so that both the volumes of the supply chain need, and the geographic location of suppliers can be determined. Clearly, the extent and duration of this emergency will influence the importance of one supply chain component compared to another.

The three sections provided are:

- Supply Chain Considerations for Industry Critical PPE
- Power Delivery Materials
- Bulk Chemicals Needed for Power Generation and Delivery

The guidance in this document was collected from organizations across the industry. The intent is to serve as a general information resource and not to set any industry standards. This document is evergreen and will be updated regularly to reflect additional or revised guidance as it is received.

It is acknowledged that access plays a key role both for organizations and their suppliers in a pandemic. The access issue is covered more fully in the "Access Considerations" section of this Resource Guide.

Supply Chain Considerations for Industry-Critical PPE

As the COVID-19 pandemic spreads, the electric power industry recognizes that Personal Protective Equipment (PPE) is in short supply even for first responders and the healthcare sector. Energy and other critical sectors now are considering alternatives to keep workers safe while maintaining reliable service. To assist with these efforts, this section of the Resource Guide provides planning considerations and resources to help investor-owned electric and/or natural gas companies, public power utilities, and electric cooperatives meet their PPE needs by identifying:

- Mission critical PPE, cleaning products, and related supplies for the electric power and natural gas industry;
- Non-government vendors/suppliers for PPE;
- Guidance for engaging those suppliers;

- Creative practices for creating alternative PPE and other protective equipment.

While our sector recognizes that the priority is to ensure that PPE is available for workers in the healthcare sector and first responders, a reliable energy supply is required for healthcare and other sectors to deliver their critical services. The Department of Homeland Security (DHS) emphasized the importance of the energy sector, recently releasing an advisory guidance on Essential Critical Infrastructure Workers (ECIW), that includes energy company and utility workers.

In addition, the ESCC identified a subset of highly skilled energy workers who are unable to work remotely and who are mission-essential during this extraordinary time. Consequently, there is a need to elevate the availability of PPE for workers in the energy sector at the federal, state, and local levels.

Personal Protective Equipment Needs

The supply chain tiger team developed the following material list, which summarizes the critical PPE needs for the electric power and natural gas industries. Tier I items are those items that serve an immediate need where critical infrastructure workers are subject to contact. Tier II are items that are not needed at the time of contact but are in the horizon of the planning scenario of nine months and a 40 percent reduction in workforce.

- Tier I:
  - Nitrile gloves
  - Shoe covers
  - Tyvek suits
  - Goggles / glasses
  - Hand sanitizer
  - Dust masks
  - N95 respirators
  - Anti-bacterial soap
  - Trash bags
- Tier II:
  - Anti-bacterial wipes
  - Disposable thermometers
  - Batteries
  - Alcohol wipes
  - Antiseptic wipes

Non-Government PPE Vendors/Suppliers

The key suppliers of PPE include [4]:

[4] Please note that many retailers and suppliers of PPE now only are selling N95 masks to the healthcare sector and government.

- 3M
- McKesson
- Walmart
- Amazon
- Costco
- Ecolab
- Johnson & Johnson
- Procter and Gamble

Due to regional variations in the availability of PPE, organizations also are encouraged to look to local sources and partners for obtaining PPE. These localized sources may include hospitality wholesalers (Sysco, US Foods) restaurants, malls, and hotels that may have supplies that are not being used. Some organizations also are working with local distilleries to produce disinfectant products.

Energy sector companies and utilities also are encouraged to connect with their local or state energy officials or emergency operations centers to engage in a discussion about the prioritization of PPE needs, access to restricted areas, and testing.

Guidance for Engaging Suppliers and Local Authorities

When contacting vendors and suppliers, organizations should consider the following key points.

- Our sector recognizes that workers in the healthcare and first responders have first priority when it comes to receiving PPE.
- However, the energy industry is a lifeline sector that generates, transmits, and delivers electricity and natural gas to critical services and end-use customers, such as hospitals, clinics, and other first responders.
- The Department of Homeland Security emphasized the importance of these workers, and recently released an advisory guidance on Essential Critical Infrastructure Workers (ECIW), that includes energy company and utility workers. That guidance document can be found online at:

  Guidance on the Essential Critical Infrastructure Workforce - CISA

- The sector is not looking for PPE for the entire workforce. Rather, we are working to prioritize supplies for mission-essential workers – a subset of highly skilled energy workers who are unable to work remotely and who are mission-essential during this extraordinary time. More information on these mission-essential workers online at:

  Ensuring Energy Reliability Throughout the Pandemic - ESCC

Creative Solutions

With PPE being in short supply and priority being given to health care workers, the energy sector has sought alternative solutions to adequately supply mission essential workers.

- Hand sanitizer formulation:
  - WHO Guidance:

    Guide to Local Production - WHO

    WHO Guidelines on Hand Hygiene in Health Care - WHO
  - Bleach-based sanitizing solution:

    How to Properly Make and Use Sanitizers and Disinfectants - DHS

    Cleaning and Disinfection for Households - CDC
  - Industrial products can be used as alternatives to medical supplies, such as face shields and masks:
    - Face shields:

      Face Protection - Grainger
    - 3D printer file for face shields:

      3D Printer File for Face Shields - ESCC
    - Respirator masks with HEPA filters:

      Respirators - Buy Insulation Products
  - Guidance for safely reusing PPE with proper decontamination.
    - Decontamination Methods for Filtering Facepiece Respirators:

      Evaluation of Five Decontamination Methods for Filtering Facepiece Respirators - NCBI
    - Ultraviolet germicidal irradiation (UVGI):

      N95 Filtering Facepiece Respirator Ultraviolet Germicidal Irradiation (UVGI) Process for Decontamination and Reuse - Nebraska Medicine

      Protector Evidence Drying Cabinets with Washdown - Labconco

      UVC & UVA Ultra-Violet Light Meter (YK-37UVSD) DataLogging - Inspect USA
    - Ethylene oxide (EtO):

      Ethylene Oxide "Gas" Sterilization - CDC
    - Vaporized hydrogen peroxide (VHP):

      Using Vaporized Hydrogen Peroxide for Bio-Decontamination - Dräger

      Battelle deploys decontamination system for reusing N95 masks - Battelle
  - Maximize use of existing stocks:

    Strategies for Optimizing the Supply of Facemasks - CDC

    Guidance for PPE conservation and alternatives when PPE is unavailable - King County

- Homemade masks with pockets for HEPA filter inserts:

  Approved Pattern Info for Homemade Masks - Great Falls Clinic

- *CDC recommendations on using cloth face coverings, including ways to make cloth* masks. (Note, these may not be appropriate for situations where Fire Retardant face coverings are required.)

  Considerations for Wearing Masks - CDC

Organizations also should be aware that the OSHA has relaxed some regulatory requirements to permit the extended use and reuse of respirators, as well as the use of respirators that are beyond their manufacturer's recommended shelf life. This guidance can be found online at:

Enforcement Guidance for Respiratory Protection and the N95 Shortage Due to the Coronavirus Disease 2019 (COVID-19) Pandemic - CDC

Power Delivery Materials List

The purpose of this section is to list frequently used critical electric power transmission and distribution materials needed for continued safe and reliable operations. It is not intended to include critical spares for major pieces of equipment such as large power transformers. While investor-owned electric companies, public power utilities, and electric cooperatives maintain a certain stock level of the materials that they frequently use, normal consumption rates, potential spikes in regional demand driven by storms or hurricane landfalls, or a disruption to transportation networks rapidly could deplete these stocks over a broad area. Maintaining a functional manufacturing and delivery supply chain for these materials will support safe and reliable operations over the planning scenario of nine months and a 40 percent reduction in workforce.

Broad categories

- Cable (bulk) and accessories
- Common supplies
- Conductor (bulk) and accessories
- Gases and chemicals
- Insulators
- Metering items
- Poles, structures, and accessories
- Sectionalizing and protection items
- Specialized hardware
- Street lighting items
- Transformers and accessories

- Substation control room and communication equipment

Cable (bulk) and accessories

- Cable connector block, lv insulated - various types
- Cable outdoor termination kit - various voltages and types
- Cable, fiber optic - various types
- Cable, lv control -various types
- Cable, primary ug - various sizes and voltages
- Cable, quadruplex urd - various sizes
- Cable, triplex urd - various sizes
- Conduit and fittings - various sizes
- Termination, fiber optic - various types
- Ug cable arrester elbow - various voltages and types
- Ug cable elbow - various voltages and types
- Ug cable splice kit - various voltages and types
- Wire, optical ground (opgw) - various sizes

Common supplies

- Batteries, common - various types
- Batteries, power tool - various types
- Indicator bulbs -various types
- Spill absorbent and containment - various types
- Tape, electrical

Conductor (bulk) and accessories

- Conductor, aac - various sizes
- Conductor, acsr - various sizes
- Conductor, insulated aac - various sizes
- Conductor, insulated copper - various sizes
- Conductor, quadruplex - various sizes
- Conductor, triplex - various sizes

- Connecter, auto sleeve for aac, acsr, copper - various sizes
- Connector, compression service - various sizes
- Connector, neutral sleeve for cu, acsr - various sizes
- Connector, sleeve for copper - various sizes

Gases and chemicals

- Corrosion inhibitor - various types
- Distilled water
- Gasoline fuel
- Diesel fuel
- Lubricant, dielectric - various types
- Nitrogen gas, bottled
- Sulfur hexafluoride gas, bottled

Insulators

- Insulator, distribution pin - various voltages and types
- Insulator, distribution post - various voltages and types
- Insulator, distribution strain - various voltages and types
- Insulator, distribution suspension - various voltages and types
- Insulator, house knob - various sizes
- Insulator, strain guy - various sizes and ratings
- Insulator, substation post - various types
- Insulator, transmission bell - various types
- Insulator, transmission non-ceramic - various voltages and types and associated hardware
- Insulator attachment/line construction hardware
- Pin, crossarm for insulator

Metering items

- Meter socket and hub - various types
- Meter, watthour - various types

Poles, structures, and accessories

- Crossarm, wood - various sizes
- Ground rod
- Ground strap, copper braided - various sizes
- Guy anchor shaft
- Guy anchor, helix - various types
- Hardware, guying - various types
- Lattice tower member, steel - various types
- Pole, steel - various sizes
- Pole, streetlight - various sizes
- Pole, wood - various sizes
- Wire, guy - various sizes

Sectionalizing and protection items

- Arrester, lightning distribution line - various voltages
- Capacitor, high voltage - various voltages and kvar
- Fuse cutout - various voltages
- Fuse holder, cutout - various sizes
- Fuse link, cutout - various ratings
- Fuse, low voltage control - various ratings and types
- Fuse, substation high voltage - various ratings and types
- Switch, overhead gang operated - various voltages and types
- Switch, overhead single phase - various voltages and types

Specialized hardware

- Armor rod line guard - various sizes
- Brackets, overhead equipment - various types
- Clamp, parallel groove - various sizes
- Clevis assembly, various types
- Deadend clamp - various sizes

- Deadend grip, preformed - various sizes
- Fasteners, distribution line - various types
- Fasteners, transmission line - various types
- Tie wire, aac - various sizes
- Tie wire, bare copper - various sizes
- Tie wire, preformed - various sizes
- Conductor splicing hardware – various sizes

Street lighting items

- Streetlight lamp
- Streetlight luminaire
- Streetlight photocell

Transformers and accessories

- Boxpad, fiberglass padmount transformer - various sizes
- Bushing, padmount transformer - various voltages and types
- Transformer and circuit breaker insulating mineral oil
- Transformer, overhead 1ph - various voltages and kva
- Transformer, padmount 1ph - various voltages and kva
- Transformer, padmount 3ph - various voltages and kva

Substation control room and communication equipment

- Storage battery cells

Bulk Chemicals Needed for Power Generation and Delivery List

The purpose of this section is to list bulk chemicals critical to power generation and delivery. These chemicals are consumed at various rates by power production processes, so maintaining continued reliable access is critical to generate electricity. The manufacturing and delivery supply chain of these chemicals must remain functional for continued reliable power generation.

- Additives
    - Coal

  - Coal Additives
  - Fuel Oil Additives
- Bulk Chemicals
  - Activated Carbon
  - Ammonia
  - Boric Acid
  - Glycol
  - Hydrazine
  - Hydrochloric Acid (HCl)
  - Lignosulfonate
  - Lithium Hydroxide
  - Sodium Bisulfate
  - Sodium Carbonate (Soda Ash)
  - Sodium Hydroxide (Caustic Soda)
  - Sodium Hypochlorite (Bleach)
  - Sulfur and Molten Sulfur
  - Sulfuric Acid
  - Urea
- Bulk Gases
  - Argon (AR)
  - Carbon Dioxide
  - Hydrogen (H2)
  - Nitrogen (N2)
  - Oxygen (O2)
  - Trailer or Tank Rentals
- Bulk Powders
- CEMS (Protocol) Gases
- Cylinder (Bottled) Gases
  - Argon (AR) Cylinder
  - Carbon Dioxide (CO2) Cylinder
  - Cylinder Rentals
  - Hydrogen (H2) Cylinder
  - Nitrogen (N2) Cylinder
  - Oxygen (O2) Cylinder

  - Propane
  - Sulfur Hexafluoride (SF6)
- Lime (Hydrated Lime)
- Wastewater Treatment
  - Flocculent
- Water Treatment
  - Demineralizers
  - Mobile Demineralizers Trucks
  - Water Filtration Equipment
  - Water Treatment Systems
- Water Treatment Chemicals
  - Resins
- Water Treatment Services

Natural Gas Delivery Materials List

Reliable natural gas delivery depends, in part, on the availability of several components and parts. The availability of these components depends on two key factors: lead times and chokepoints. Natural gas companies typically do not overstock certain components and parts because they tend to be widely available in the market under normal conditions. If these components and parts become in short supply and there are longer lead times for production, the natural gas delivery system could be challenged. In general, the availability of these components and parts also is subject to transportation constraints that can delay delivery. Therefore, both rail and fleet availability can create chokepoints, which, in turn, can create supply chain difficulties.

Long lead time items

- Large diameter valves and accessories
- Electro-fused fittings
- Prefabricated risers
- Prescriptive-based rebuild or maintenance kits for metering and/or regulating stations

Chokepoint items

- Nitrogen – for purging pipes and pressure testing
- Odorant (Mercaptan) – for odorizing natural gas

Responsible Reentry and Return to the Workplace

Section Summary

This section provides guidance that investor-owned electric and/or natural gas companies, public power utilities, and electric cooperatives may consider when planning a transition from remote work back to the workplace. It includes seven sections:

- Strategic Priorities for Returning to the Workplace
- Engagement with State/Local Governments
- Enterprise-Wide Reentry Planning
- Planning Considerations for COVID-19 Contact Tracing
- Planning Considerations for Reentry to Office Spaces
- Planning Considerations for Field and Construction Work
- Planning Considerations for Technology

The guidance in this document recognizes that the electric power industry has continued to work during the pandemic response. It is based on input from leaders across the industry as they begin planning a transition toward normal operations. The intent is to serve as a general information resource to inform independent, localized decisions and not to set any industry standards. This document is evergreen and will be updated regularly to reflect additional or revised guidance as it is received.

Strategic Priorities for Returning to the Workplace

As the industry prepares to shift from remote operations to return to the workplace, the ESCC has identified four strategic priorities that will help define this next stage in the pandemic response:

- **Industry plans for returning to the workplace should be coordinated with state/local governments and executed in phases.** Organizations will need to partner with their state and local government officials who are responsible for lifting restrictions and re-engaging the economies in their jurisdictions. Understanding what information these officials will use to begin their economic restart activities will help inform localized plans for industry to transition from

remote work back to the workplace. A phased approach to this process will be required, with the understanding that some business units can continue to rely on telework. School closures and a lack of day care services also will impact an organization's planning, as will increased mental health considerations for the workforce during a potentially challenging transition process. As these plans are developed, industry leaders should also consider engaging with regulators and/or oversight bodies.

- **Focus on the health and safety of our workforce and our customers.** Our workforce is the foundation for everything we do. The health and safety of our employees, contractors, and customers is a paramount consideration, shaping every decision we make. Organizations will need to adapt to the "new normal" of social distancing and enhanced hygiene in office settings and in field/construction work. These changes could include physically restructuring office space, schedule rotations, regular health screenings, more frequent cleaning of facilities, and changes in travel policies. In field settings where social distancing is challenging, additional PPE and safety protocols may be required. These requirements currently are stressing, and likely will continue to stress organizations' supply chains, as demand for PPE, COVID-19 tests, thermometers, and cleaning supplies increase. The industry will continue to work collaboratively with other critical sectors and suppliers, but also will need the continued support of federal, state, and local government partners to ensure supply chain requirements are filled. The ability to maintain a healthy and safe workforce as we re-enter the workplace depends greatly on the ability to ensure the electric power industry's supply of these items. The reliability and security of the electric system also depends on industry and government working together to ensure these supply chain needs are fully addressed. Industry mutual assistance needs currently are being met, but with storm season upon us, these supply chain needs will become even more critical for us to keep the lights on.
- **Anticipate and address any technology-related challenges and cyber threats associated with the return the workplace.** Organizations are aware that the transition from telework to the workplace may increase cyber vulnerabilities—in both Informational Technology (IT) and Operational Technology (OT) systems. Recognizing these challenges, we will need to continue our partnership with federal intelligence sources, the Department of Energy, Department of Homeland Security, and other relevant agencies to receive timely and actionable communications during the transition process.
- **Clear and consistent internal and external messaging will be critical for all aspects of a reentry plan.** Organizations already are developing comprehensive messaging plans to engage with the workforce, customers, and stakeholders on the reentry process. Messaging should be transparent, easy to understand, consistent, timely, and coordinated with government partners.
- **Organizations should consider taking a collaborative approach when examining whether a vaccination policy is appropriate.** This includes coordinating with labor unions (if applicable), state and local health departments, employment counsel, and their workforce, which could include contractors, where appropriate.
- Among the issues to consider:
  - Surveys can help organizations understand how much of their critical workforce (first responders and control center operators) would want to be vaccinated (phase one of distribution). This could include contractors, where appropriate.
  - If an organization develops a vaccination policy, has a contractor administer the vaccine, or has workforce members obtain the vaccine from a preferred health care provider, they should have a communications and education plan to answer key questions about who, what, where, and when.

  - Staggering the timing of vaccination may minimize impacts related to potential side effects if such scheduling does not negatively impact operations.

- There are, of course, other factors and risks to consider when deciding if a vaccination policy is appropriate for your organization, and, if so, what that policy entails. Some other potential factors and risks include, but are not limited to, infection rates; vaccine availability; choice of vaccine; labor and employment laws at the federal, state, and local levels; worker safety laws; collective bargaining agreements (if applicable); and worker compensation schemes. Of course, some factors and risks can change over time and may need to be revisited.

Engagement with State and Local Governments

The decision to re-engage a local economy will be made by individual state and local governments and will be informed by federal guidelines. While these decisions likely will impact an organization's reentry planning, industry leaders should consider internal objectives and criteria before beginning the transition from remote work back to the workplace.

Organizations should consider taking the following steps when engaging with state and local governments on reentry planning:

- Develop a regular line of communication with government decision makers either directly or through the applicable statewide organization. As appropriate, encourage executive-level participation in state/local work groups on economic restart activities.
- Identify and attempt to address inconsistent guidance on economic restart between state and local levels of government. To be effective, guidance needs to be aligned across all levels of government and must be clearly communicated.
- Engage, either directly or through appropriate statewide or regional organizations, with the state department of emergency management and state/local emergency operations centers to discuss preparations for potential major incidents (e.g., hurricanes, wildfires, etc.) and how organizations will mitigate COVID-19 exposure during response operations.

In addition to outreach to state and local governments, organizations also should consider engaging with regulators, as appropriate. It is important to communicate with local government leaders and regulators about plans to transition employees who are working remotely back to the workplace. Organizational leaders also should consider outreach to their congressional delegation, either directly or in coordination with statewide and national organizations, to outline their reentry plans. In addition, organizations should ensure consistent messaging to all government stakeholders.

Enterprise-Wide Reentry Planning

Because of the critical nature of our sector, the electric power industry has continued to work – albeit in different configurations – during this pandemic response. As we enter a new phase in this response, organizations across the sector are encouraged to be responsible, measured, and flexible when transitioning employees who are working remotely back to the workplace.

Be Responsible

- Maintain the safety of employees and the public as the number one priority.
- Expect employees to actively participate in ensuring a healthy workplace.
- Remain focused on critical onsite operations to meet the needs of customers.

Be Measured

- Continue to effectively work remotely where appropriate.
- Develop a phased/staged workplace reentry approach based on external and internal criteria.
- Closely track, reassess, and reevaluate criteria/triggers between each stage.

Be Flexible

- Establish enterprise-wide guidelines/approaches but implement them locally.
- Consider federal, state, and local guidance.
- Incorporate lessons learned and respond to changing circumstances.
- Be responsive to employees' needs.

Phases/Stages for Workplace Reentry

Organizations should consider developing reentry plans that include a gradual, phased de-escalation of heightened health/safety protocols in stages that are based on an evaluation of internal and external criteria.

- **Internal and External Criteria/Triggers for Stages:** Organizations should identify internal and external criteria that can be tracked and evaluated to determine whether and when to move between stages.
  - **Examples of External Criteria**
    - Federal,[5] state, and local government guidance support the movement toward normal operations.
    - Available local data indicate a declining trend in new COVID-19 cases and deaths.
    - Local health care systems (facilities, equipment, and personnel) can treat all patients requiring care safely without any capability or capacity issues.
    - Coordinated economic restart planning with governments and other businesses in the area is completed.
  - **Examples of Internal Criteria**
    - Initial deep cleaning of all company facilities is completed.

[5] The White House has proposed "gating criteria" for states and regions to consider before beginning a phased effort to re-engage economies. That criteria can be found here: Opening Up America Again - The White House

- Procedures are in place for scalable daily facilities cleaning.
- Established guidelines are in place for occupancy, workplace access, employee screening.
- Physical distancing measures are in place by location.
- Adequate and appropriate PPE is available.
- There is adequate access to COVID-19 testing for employees.
- Health and safety reminders and signage are placed strategically in common areas, elevators, and conference rooms.
- Employee/manager training and a communications/messaging plan are implemented.
- Survey results indicate employees can return to the workplace due to family situations (school closures, lack of daycare, etc.).

- **Phased/Staged Plan Example:** Below is an example of an outline for a phased/staged reentry plan that identifies specific actions based on an evaluation of internal and external criteria. As those criteria are evaluated, it is important to note that the time to move between stages could be shortened or extended depending on the situation, and different business units within the organization may have separate timelines for each stage. In general, organizations should allow 21-28 days before transitioning between stages to account for COVID-19's incubation period. Organizations also should consider that the criteria may indicate a need to move back a stage, rather than moving forward.

  Organizations should designate the appropriate level of senior leadership to evaluate these criteria/triggers before transitioning through a stage – considering the impacts that these actions will have on employees currently performing their jobs onsite and how each business function will impact others as they transition back to the workplace.

  - **Stage 1: Full Restrictions**
    - Stay-at-home orders in place.
    - Restricted access to facilities for employees, contractors, and visitors.
    - Extensive remote work/work from home.
    - Suspended/deferred non-essential or emergency field work.
    - Restricted business travel.
    - Contact tracing for employees that report symptoms, a positive COVID-19 test result, or contact with a confirmed COVID-19 case.
    - Clear, consistent messaging to employees and contractors on restrictions in place.
  - **Stage 2: Limited Reentry**
    - Limited facility reentry for employees and contractors with health screenings. Organizations should consider maintaining restrictions for visitors.
    - Strict social distancing, increased hygiene measures, and appropriate PPE at facilities.
    - Limited employee return to the workplace based on analysis of business units.
    - Alternate days for initial return to acclimate employees back into the workplace (e.g., T, TH or M, W, F).
    - Resumption of some suspended or deferred field work based on priority/criticality/risk.

- Restricted business travel, with approval; consider requiring employees to self-quarantine, per CDC guidance, after they return from personal travel.
- Contact tracing for employees that report symptoms, a positive COVID-19 test result, or contact with a confirmed COVID-19 case.
- Clear, consistent messaging to employees and contractors on reentry process.

— **Stage 3: Expanded Reentry**

- Expanded facility reentry for employees, contractors, and visitors with health and medical screenings.
- Maintain social distancing, increased hygiene measures, and appropriate PPE at re-opened facilities.
- Continue to alternate days and expand as appropriate based on need and if space constraints are not a concern.
- Most suspended field work and projects reinstated based on priority/criticality/risk.
- Limited business critical travel permitted, with approval; consider requiring employees to self-quarantine, per CDC guidance, after they return from personal travel.
- Contact tracing for employees that report symptoms, a positive COVID-19 test result, or contact with a confirmed COVID-19 case.
- Clear, consistent messaging to employees and contractors on reentry process.

— **Stage 4: Unrestricted**

- Reliable vaccine widely available.
- All pandemic-related facility restrictions lifted.
- All suspended field work and projects resume.
- Business travel permitted, with approval.
- Establish a “new” normal business model with consideration for allowing greater flexibility and work from home.
- Clear, consistent messaging to employees and contractors.

Evaluating the Return to the Workplace by Business Unit

Organizations should evaluate which business units and/or roles (such as those that require system monitoring, emergency response, or technology within the office) that should be prioritized to return to the workplace first. Many organizations are exploring whether remote work/telework can be institutionalized, which will impact a reentry plan. School closures and a lack of daycare services for some employees also may impact a reentry plan and require flexibility for returning to the workplace in stages.

- **Remote Work Considerations:** Organizations should consider the following when evaluating the use of telework.
  - Among the benefits of telework, it:
    - Helps meet social distancing guidelines.
    - Can be a good retention/recruitment tool.
    - Allows quick reaction if there is a resurgence in infections.
    - Reduces strain on mass transit.
    - May reduce some long-term capital construction expenditures for office space.
  - Organizations should review the impact to existing company policies, such as those addressing employee benefits and healthcare, and agreements with organized labor prior to considering and establishing guidance for long-term teleworking.
- **Employee Feedback on Returning to the Workplace:** Organizations should consider using survey tools to gauge the ability of employees to return to the workplace based on their family situations (school closures, lack of daycare, etc.). Employees with high-risk health factors or with close family members with such risks also should be able to indicate their preferences relating to telework.
- **Employee Role in Maintaining a Healthy Workforce:** Organizations should communicate that employees play an important role in maintaining a healthy workforce. For instance, employees should not come to work if they have flu-like symptoms. They also should perform self-temperature checks prior to coming to work, especially if they have been near anyone who is sick or who has tested positive.

ICS Structure to Support Reentry Transition Process

Organizations should consider implementing an Incident Command System (ICS) structure to support the staged transition from remote work back to the workplace. This structure would pull employees from across the enterprise to monitor, track, and report on each stage of the transition, which may vary by business unit. As part of its oversight, the structure could track resources used during the COVID-19 mitigation period (such as PPE and cleaning supplies) to maintain adequate supplies and to ensure that all business units fully are coordinated during the transition. The structure also could be integrated into an organization's existing incident planning efforts to ensure an all-hazards approach to enterprise-wide risk.

In addition, organizations should consider changes in their emergency operations centers (EOCs) to mitigate possible virus exposure. These mitigation efforts may include:

- Adjusting the workplace, for example using every other cubicle or workstation in a checker-board pattern to increase space between employees.

- Exploring whether portions of the EOC can operate remotely with expanded use of emergency management collaboration software, such as WebEOC. (Additional information on "Virtual EOCs" can be found online at: A Brand New World – Virtual Emergency Operations Centers (VEOC) - Risk and Resilience Hub.)
- Identifying alternate/remote locations where smaller teams of EOC staff could deploy separately.
- Designating alternating teams to staff the EOC on rotations.
- Designating narrow hallways or doors as one-way only.
- Installing plexiglass or other physical barriers in areas where social distancing is not possible.

For additional mitigation options, see the "Office Cleaning and Upgrades to Meet COVID-19 Requirements" in this Resource Guide.

Planning Considerations for COVID-19 Contact Tracing

As organizations begin to consider when and how to transition employees from working remotely to reentering the workplace, they also should consider contact tracing programs as a tool to identify and to assist employees who potentially are exposed to COVID-19. These programs are designed to protect workers, their families, and their communities by slowing or stopping the transmission of the virus.

In general, contact tracing includes the following steps:

- **Report**: An employee reports that he/she has symptoms of COVID-19, has tested positive for the virus, or has had contact with a person who has a confirmed COVID-19 case to the organization's HR staff or to an appropriate person (e.g., his/her supervisor) who alerts the HR staff.
- **Mitigate**: The employee is sent home and asked to self-quarantine. All affected workplace areas and vehicles are cleaned and disinfected.
- **Investigate**: HR staff interviews the employee to identify close contacts in the workplace and to provide guidance on seeking medical attention.
- **Inform**: HR staff informs the employee's close contacts of their exposure and provides guidance on mitigation steps.
- **Track and Follow-Up**: HR staff conducts follow-up interviews with the employee and close workplace contacts to track symptoms and to indicate when/if he/she can return to the workplace.

Any contact tracing effort should be developed in coordination with organized labor (if applicable), HR professionals, and legal counsel, and should be communicated clearly to the workforce and to other stakeholders. In addition, the process should emphasize and value employee confidentiality and adhere to applicable local, state, and federal privacy laws.

Approaches for Contact Tracing

- **Starting the Contact Tracing Process**: Contact tracing should begin after an employee tells HR staff or an appropriate person (e.g., his/her supervisor) that he/she has symptoms of COVID-19, has tested positive for the virus, or has had contact with a person who has a confirmed COVID-19 case. The organization should ensure that the employee is sent home immediately and that affected workplace areas and vehicles are cleaned. Further, the supervisor should alert the organization's HR team to begin identifying and tracing the employee's close contacts.
- **Defining "Close Contacts"**: The CDC defines a close contact as "someone who was within 6 feet of an infected person for at least 15 minutes starting from 48 hours before illness onset until the time the patient is isolated." Contacts can include, but are not limited to, family members, co-workers, customers, vendors, or contractors.
- **Engaging with the Potentially Infected Employee and Exposed Contacts**: An organization's HR staff should interview the employee and then should conduct tracing interviews with his/her close contacts. As part of the interview process, organizations should:
  - Develop a standard set of questions and talking points for interviews with the potentially infected employee to identify close contacts; determine when/where the exposure with the contacts occurred; and provide guidance on seeking medical attention.
  - Conduct interviews with the employee and close contacts by phone. Interviews should be considered confidential and should not include the employee's manager(s) since sensitive medical and personal information will be discussed.
  - Maintain confidentiality by not identifying the individual who reported symptoms. Contacts only should be informed that they may have been exposed to an individual who has COVID-19 or who has been in close contact with someone who has COVID-19. They should not be told the identity of the person. Organizations also may consider using an authorization form for an employee to sign giving his/her approval to release his/her identity voluntarily.
  - Provide clear guidance on steps a contact should take and indicate when he/she can return to the workplace. The CDC recommends that contacts stay home and maintain social distancing (at least 6 feet) until 14 days after their last exposure in case they also become ill or until a negative test result is received for the employee with whom they were in contact. The CDC also recommends that the contacts monitor themselves by checking their temperature twice daily and watching for a cough or shortness of breath.
  - Consider whether to inform close contacts who are not employees or work with local health authorities to provide that information for their contact tracing efforts.
  - Conduct follow-up interviews to determine whether contacts develop symptoms. If so, the organization should suggest they reach out to their medical providers for further health guidance.
- **Tracking and Follow-Up Protocols:** Organizations should consider using an encrypted database system to track information collected during the contact tracing interviews. Tracked information may include: the date of an employee's onset of symptoms and/or positive test result; a list of all close contacts; and the dates/locations of the contacts' exposure. Organizations should consider using employee ID numbers in the database, instead of names, to help ensure confidentiality. The database system can facilitate follow-up interviews with infected employees and their contacts. All close contacts should be informed if an employee who reported symptoms receives a negative test result. Contacts who are also employees may

return to the workplace after verifying that they are still asymptomatic. Access to the database system should be limited to those necessary to conduct the tracking and follow-up protocols.

- **Use of Technology:** The Tiger Team worked with the sector to identify technologies that could facilitate or automate the contact tracing process. One organization indicated that it is using an app-based system to capture data from a variety of IT systems (such as fleet information and badging systems) to reduce the time required in a manual tracing process. The information then is made available to the HR team via a database and dashboard. Meanwhile, the tech industry is developing other tools, such as case management and proximity tracking systems, that primarily are designed for public health organizations. For instance, Apple and Google partnered on a platform that helps public health organizations develop apps that use Bluetooth technology to automate contact tracing. While only public health authorities will have access to this platform, organizations in the sector eventually may be able to use some of the approaches and tactics to assist in their contact tracing efforts.
- **Engagement with State/Local Governments and External Tracing Programs:** Public health authorities established contact tracing programs for tracking exposure within communities. Organizations should consider engaging with those health authorities and state/local governments to establish protocols for being notified about potential employee exposure points outside of work facilities.

The CDC has developed contact tracing guidance for state/local/tribal/territory public health offices that can be found online at:

Contact Tracing Resources for Health Departments - CDC

Planning Considerations for Reentry to Office Spaces

Returning to the office is an important step in an organization's return to pre-pandemic type operations. Because the health and safety of employees is the highest priority, reentry into office spaces will require significant planning and foresight and will include changes, either temporary or permanent, to the ways in which business is conducted going forward. This section provides guidance about mitigation efforts that could be considered as organizations develop and implement reentry plans.

Approaches to Returning Employees to the Office

This section addresses the high-level decisions that organizations need to make and communicate to employees to develop a functional process for return to the office. This includes determining who will return to the office and when; ensuring that those employees are prepared to return to the office; implementing organizational strategies to protect returning employees; and accommodating employees who will continue to work at home.

Decide on a Phasing Approach

- Most Likely Approach: Returning Employees in Stages
  - Returning to the office in stages can accommodate social distancing requirements.
  - Returning to the office in stages can accommodate employees' personal needs, like child or elder care.

  - *Example of How to Implement:* Bring employees back into the office starting with 25 percent of the workforce, then 50 percent, then 75 percent, and finally 100 percent.
  - *Example of How to Implement:* Promote the message that employees are **permitted** to return to the office but are **not mandated** to return to the office to encourage a gradual return.

- Possible Approach: Returning Only Those Employees that Need to Operate in the Workplace
  - Identifying and returning only those employees that need to work in an office setting, while allowing others to continue to work remotely, can help accommodate social distancing requirements and help protect mission-essential workers[6] who must be in certain workspaces.
  - This approach may not be significantly different than the office arrangements made during the initial response to the pandemic since many employees who could not operate remotely either have continued to work in the office throughout or already have returned.
- Unlikely Approach: Returning All Employees at Once
  - This approach presents challenges in the office for ensuring social distancing, proper cleaning of facilities, and other safety requirements for the office.
  - This approach presents challenges for employees with personal circumstances that prohibit them from safely or easily returning to the office.

Develop and Implement Corporate and Site-Specific Return to the Office Space Guidance

- Ensure that corporate guidance can accommodate the site-specific needs and limitations of a wide variety of buildings and facilities and can be implemented effectively in every office.
- Consider developing a strategic corporate plan with separate site-specific implementation plans for each individual office space.

Divide Returning Employees into Separate "Teams" or "Zones"

- Designate teams/zones to reduce the number of interactions among employees.
- Designate teams/zones to provide additional protection for mission-essential workers since they are less likely to encounter others.
- Teams/zones can be structured in several ways depending on the organization's needs:
  - Divide teams or zones by function to ensure that workers who need to interact with each other can do so.
  - Structure teams or zones to ensure that a "replacement crew" will be available for particular functions if one team or zone becomes compromised.
  - Assign employees from each department to "Team A" or "Team B," and alternate work weeks between the teams to reduce the number of people present in each department at one time.

[6] "Mission-essential workers" are defined in the ESCC Mission- Essential Workforce document that is available on the ESCC website at https://www.electricitysubsector.org.

- Assign groups of employees to a color-coded area of the office, such that "green" employees must stay in the "green" area and "yellow" employees must stay in the "yellow" area to reduce the number of unnecessary interactions and shared spaces.

Conduct Pre-Return Training for Employees

- Conduct virtual training for employees prior to their return to the office so that they are aware of strategies and expectations to protect themselves and others while in the office.

Communicate Frequently with Employees Prior to Return

- Survey employees about their willingness and ability to return to the office, listening for any unanticipated concerns that can be mitigated or factors that can help inform decisions about stages and continued work from home.
- Establish a dedicated communication channel (SharePoint, Microsoft Teams, weekly conference calls, etc.) to ensure employees know where to find and how to receive accurate and timely information on plans to return to the office.
  - Ensure that communication channels are bi-directional, so that employees can ask questions and express concerns.
- Communicate experiences that employees may have that differ from usual office activities.
  - Explain in detail any screening or testing requirements and processes, including the use of face coverings, and provide appropriate resources for medical information on testing.
  - Ensure that "stages" and "teams" are communicated clearly and transparently.
  - Explain any new procedures for office entry (e.g., security badging or elevator use).
  - Provide explanations and maps if the office is divided into new "zones."
  - Explain any new procedures for using restrooms, kitchen areas, conference rooms, gyms, cafeterias, common spaces, etc.
- Consider how much advance notice should be given to employees before expecting them to return to the office, taking child and elder care into consideration.
- Communicate a plan for full/partial closure of the office in the event of a second wave of the virus.

Implement Additional Protections for Mission-Essential Workers

- Maintain heightened restrictions on access to any areas of the office where there are mission-essential workers.
- If possible, establish a dedicated "zone" for mission-essential workers, including separate restrooms, kitchen areas, and conference rooms.

Consider Extending Work at Home for Some Employees

- Positive experiences with working remotely during the pandemic have led some organizations to see remote work as a viable option, leading to the development of more flexible corporate work-at-home policies that may remain in effect.

- Evaluate whether the benefits of continued remote work for some or all employees that can operate remotely could outweigh the benefits of returning to the office in the near-term, based on your organization's experiences working remotely.
- Extended pandemic-related remote work may be a permanent or open-ended change, may be determined on a case-by-case basis for each employee, or may have a designated end point such as:
  - Specific timeframe.
  - Target reduction in number of cases in a region.
  - Opening of local schools/daycare/elder care facilities.
  - Opening of other businesses.
  - Development and availability of a vaccine.

  Additional criteria that may inform remote work decisions can be found in the "Internal and External Criteria/Triggers for Stages" section of this Resource Guide.
- Develop long-term remote work policies to accommodate employees who have special circumstances that make it more challenging or unsafe for them to return to the office, which may include:
  - Older employees or employees who live with older relatives.
  - Employees who have underlying health conditions or who live with someone who has underlying health conditions.
  - Employees who rely on public transit or carpool.
  - Employees with child or elder care responsibilities.
- Ensure that work-at-home policies accommodate state or local protections for vulnerable communities, which might prohibit employees from returning to the office.
  - *Example*: New York enacted Matilda's Law, which provides additional protections for workers over 70, those with compromised immune systems, and those with underlying conditions.

Change or Stagger Office Hours

- Stagger start and end times to reduce the number of employees in the office at any one time and reduce the risk of overcrowding in elevators, stairwells, and other common spaces.
- In areas where employees use public transit, consider changing the office's opening and closing times to allow employees to avoid commuting during the most crowded times.

Health Screening and Testing Practices

This section outlines planning considerations for implementing practices related to health screening and testing in the office, including working onsite with healthcare professionals and using healthcare information to make informed choices about office activities.

Conduct Employee Health Screenings

- Identify and clearly communicate to employees when, how often, where, and by whom health screenings will be conducted.

- Health screenings can include quantitative assessments, like temperature checks, as well as qualitative assessments, like asking employees whether they have felt ill, had a sore throat, are experiencing shortness of breath or other symptoms, or believe they have been exposed.
- For health screenings conducted at home:
  - If possible, provide thermometers to employees and ask them to take their own temperature at home prior to arriving at their work location.
  - Establish and clearly communicate a process to self-report fevers or other symptoms, which could include a dedicated phone number, website, or email address.
- For health screenings conducted onsite:
  - Conduct screenings as employees arrive at the office in the morning to ensure potentially sick employees do not enter the rest of the office.
  - Establish a "waiting room" outside of the screening area that follows social distancing guidelines for employees who are waiting to be screened, to ensure that only one employee is in the "screening room" at a time.
  - Consider site-specific and schedule-specific solutions to alleviate bottlenecking and overcrowding of waiting rooms.
- For all health screenings, develop a standard protocol that follows CDC guidelines and state/local regulations to address employees who have or report having a fever or other symptoms or those who indicate that they may have been exposed.
- Develop a process for storing and managing any health information, taking relevant privacy and other legal issues into consideration.

Develop Diagnostic Testing Requirements for Access to the Office

- Requirements should consider the availability of diagnostic testing (including antibody tests or swab tests uses to detect the coronavirus) in a specific region and the potential use cases for different types of tests as they relate to office access.
- Determine who will be required to undergo diagnostic testing before entering the office:
  - No one
  - Mission-essential workers only
  - All employees or all employees returning to the office
  - Consultants and contingent workers in the office
  - Visitors
- Determine if testing is required for entry into all parts of the office or only required to enter a specific access-restricted zone in the office.

Develop and Communicate a Protocol for Employees Who Experience Symptoms of COVID-19 in the Office

- How does an employee report that he/she is beginning to experience symptoms of COVID-19 while at the office?
- If an employee begins to experience symptoms of COVID-19, should he/she leave immediately?

- If an employee reports flu-like symptoms, will he/she be tested for COVID-19, if possible?
- Will employees with flu-like or COVID-19 symptoms be required to quarantine for 14 days?
- Will other employees who may have been in contact with a sick employee be notified or asked to take any additional precautions?
- How will employees be cleared to return to the office after recovery?

Monitor the Regional Infection Rate

- Regional infection rates may provide a useful indication of how likely employees are to be symptomatic or asymptomatic carriers of the virus.
- Establish a threshold for regional infection rates to inform the decision to begin returning employees to the office or to move to the next stage of returning employees to the office, and for full or partial reclosure of the office in the event of a second wave or unexpected spike.

Consider Employee Mental Health Concerns

- Mental health concerns about returning to the office may stem from many different experiences, including anxiety about the potential to get sick upon return, stress from additional family and caretaking responsibilities, stress from economic impacts, grief, or discomfort during an extended period of isolation, among other things.
- If an Employee Assistance Program or other resources are available to employees, communicate to employees about the relevant services that are provided.

Office Cleaning and Upgrades to Meet COVID-19 Requirements

This section highlights the physical changes that could be made to an office space to reduce the risk of infection and to enable employees to work safely and comfortably.

Clean Offices, Cubicles, and Common Areas Regularly

- Determine when and how often all areas in the office should be cleaned, taking into consideration any high-traffic areas and frequently touched surfaces.
- Supplement daily cleaning routines with weekly or occasional deep-cleaning methods, like electrostatic fogging, as necessary.
- Consider shifting office hours so that extended periods of time are available for regular deep cleaning.
- Provide appropriate cleaning supplies in restrooms, kitchens, and other common areas:
  - Anti-bacterial soap should be provided in all restrooms and kitchens.
  - Hand sanitizer should be provided in offices/cubicles, conference rooms, elevator lobbies, reception areas, kitchens, and other common areas.
  - Surface wipes should be provided for offices/cubicles, conference rooms, kitchens, and any other areas with shared or frequently touched surfaces.
- Consider asking employees to wipe down common area surfaces before and after use to ensure that they are clean for themselves and the next user.

- Determine if any changes need to be made to routines for collecting trash or recycling.
- Clean shared refrigerators, microwaves, and coffee machines before employees return to the office and regularly after employees return.

Enable Social Distancing at Workstations

- Adjust cubicle spacing and spacing of desks in shared or open offices to provide 6 feet of space around each workstation.
- Use every other cubicle or workstation in a checker-board pattern to increase space between employees.
- Discontinue use of cubicles or workstations in high-traffic hallways or on busy corners.
- Install Plexi-glass or other physical barriers in areas where social distancing is not possible or effective, like at a reception desk.

Enable Social Distancing in Common Areas

- Examine each floor to ensure that employees can move throughout the office and conduct necessary business (printing, etc.) while maintaining social distancing requirements.
- Post signage in common areas with the maximum number of people who safely can be accommodated at once.
- Designate certain common areas (kitchens, restrooms, elevators, printers, etc.) for specific employees to use, if possible.
- Post signage in common areas explaining any requirements or recommendations for wearing masks or other protective equipment.
- Post signage near tight or enclosed shared spaces, like supply closets and coffee pantries, informing employees to wait outside the space until the person in front of them has finished.
- Designate narrow hallways or doorways as one-way only.
- Designate elevators for one floor or one organization, if possible.
- Designate stairwells to travel in only one direction, if possible.
- Designate points of entry into the building and points of exit out of the building.
- Reduce the number of parking spots in use in a garage or parking lot, using only every other parking spot in a checker-board pattern, to increase the space between vehicles and allow for safer movement. Alternatively, secure additional parking spaces at nearby locations to allow for social distancing in all garages/lots.
- If your office is in a building with other tenants, coordinate with the building management staff to communicate physical safety practices and expectations.

Restock Office Supplies and Equipment

- Employees may have taken home computers and computer accessories, monitors, small printers, desk chairs, and other office equipment and supplies that will need to be returned, replaced, or replenished.

- Ensure that all offices, cubicles, and conference rooms have the equipment and supplies they need to resume business.
- Sanitize all supplies that are returned from an employee's home, especially if they may be used by others.

HVAC System Upgrades May Reduce the Likelihood of Transmission in the Office

- Examples of upgrades include UV treatment systems and anti-microbial filters.

New Ways of Working and Office Etiquette

This section explores changes to office culture and interpersonal interactions that will aid in the transition to the "new normal."

Promote Standards for Personal Hygiene

- Promote thorough hand washing, use of hand sanitizer, and use of surface wipes or other disinfectants in personal offices/cubicles.
- Consider requiring or recommending the use of face coverings in the office.
  - If face coverings are required or recommended in all or some areas of the office, provide guidance on how to use them safely and effectively.
  - Face coverings may be required by law in some states and localities.
- Provide resources for hygiene practices outside of the office, including at home and during commutes, to reduce the risk of infection in the office.

Promote and Enable Safe Face-to-Face Meetings

- Continue to encourage virtual or partially virtual meetings when possible to reduce the number of unnecessary face-to-face encounters, even when meeting participants are in the office.
- Reduce the number of chairs in each conference room or meeting space to allow for 6 feet of space between each person.
- Provide surface wipes and hand sanitizer in all conference rooms and meeting spaces.
- Eliminate the need to use frequently touched surfaces when possible:
  - Leave doors open to reduce door handle use.
  - Encourage personal cell phone use instead of shared telephone use when appropriate.
- Discourage handshaking and similar gestures during all meetings.
- During a face-to-face meeting, be aware of potential overcrowding in areas other than the designated conference room, including restrooms, lobbies, elevators, and stairwells.

Reduce Crowding in Kitchens and Break Rooms

- Stagger designated lunch hours to reduce unnecessary interactions between employees in common areas.

- Ask employees to eat lunch at their own desks rather than in common areas to reduce crowding.
- Be cautious of overcrowding around shared appliances.
- Post clear instructions to employees and to delivery drivers for receiving and handling deliveries of food, supplies, and other packages.

Update Business Travel Policies

- Develop plans for resuming essential and non-essential business travel that consider the following:
  - Stages for essential vs. non-essential travel.
  - Mode of transportation (i.e., air travel, train, personal car).
  - Regions where the employee is travelling to/from.
  - Anticipated interpersonal interaction (i.e., large conferences vs. one-on-one or small group meetings).
  - Availability of virtual attendance options.
  - Protection of mission-essential workers and coverage of essential functions in the event of infection.
- Determine whether to allow limited business critical travel, with approval; consider requiring employees to self-quarantine, per CDC guidance, after they return from personal travel.
- Communicate plans to employees with enough advance notice for them to make appropriate arrangements.
  - Consider making decisions on a monthly or bi-weekly basis to determine whether to resume some or all non-essential business travel.
- Communicate plans to internal and external travel coordinators.
- Consider the probable business travel plans of other organizations when planning to host an onsite meeting.
- Provide additional guidance to employees for essential overnight travel.
  - Promote high standards for cleaning and hygiene while staying at hotels.
  - Consider the use of personal RVs or other sleeper vehicles as an alternative to hotels when appropriate.
- Update policies related to the use of fleet vehicles onsite and offsite.
  - Limit the number of people permitted in a vehicle at one time.
  - Ensure that shared fleet vehicles are disinfected after each use.
- Expand the use of personal vehicles while traveling on business.
  - Consider using company signage on personal vehicles to identify employees.

Establish Policies for Non-Employees Who Need to Enter the Office

- Develop a plan for catered and delivery foods to be delivered, handled, and served safely.

- Develop a protocol for hosting non-employee workers who may need to be onsite for an extended period, like building and facilities maintenance or construction crews.
  - Consider applying the pandemic guidelines for hosting mutual assistance crews onsite to other non-employee workers who need to be hosted onsite.

Promote and Enable Safe Interactions in Public and Customer-Facing Offices

- Ensure that public and customer-facing spaces, like customer service centers and public lobbies, meet all state and local requirements and recommendations for safe interactions, which may include:
  - Enhancing daily and supplemental cleaning practices.
  - Providing hand sanitizer and surface wipes for customer and employee use.
  - Installing physical barriers, like Plexi-glass dividers, between employees and customers where appropriate.
  - Requiring or encouraging the use of face coverings for customers and customer-facing employees.
  - Limiting the number of customers permitted in a space at one time to maintain social distancing, including offices, lobbies, elevators, and waiting areas.
  - Using floor markers to indicate safe distances between customers, particularly in-service lines and waiting areas.
  - Removing additional seating in waiting areas to ensure that customers can maintain social distancing while waiting.
- Expand and encourage the use of online and telephone customer service options when possible.

Planning Considerations for Field and Construction Work

The energy sector has not stopped working during the response to the COVID-19 pandemic. However, to keep field personnel safe, organizations may have paused some projects that did not focus on the safe operations, reliability, or the resiliency of the energy grid during the height of the pandemic in certain geographical areas. Projects that could not be completed without appropriate social distancing, PPE, or required planned outages to customers also may have been paused. This section provides guidance for organizations to consider for restarting field work and maintaining a safe work environment for workers and customers.

Planning Considerations for Restarting or Expanding Field Work

Recognizing circumstances vary across different service territories and different communities, organizations may consider the following when restarting or expanding field work:

- Focus on safety and health of employees and customers and provide appropriate PPE.
- Request health and safety plans from contractors to ensure adherence to the organization's COVID-19-related health and safety protocols.

- Create a phased or tiered approach to restarting paused field work based on the status of the COVID-19 outbreak in the region or local geographic area that follows the most up-to-date government and health official guidance. The transition and timing to get back to more normal operations also may depend on any material/equipment supply chain issues and availability of required PPE. (See "Internal and External Criteria/Triggers for Stages" section above.)
- Keep field personnel isolated by having them not enter office spaces within operations or service centers.
- Continue to keep personnel to one person per vehicle.
- Ensure that no more than two people are in a job trailer at a time if one is used onsite.
- If personnel leave work vehicles at an operations/service center or warehouse, have warehouse personnel load materials onto work vehicles overnight to keep field personnel from entering the warehouse and to maintain social distancing.
- If personnel report directly to a field location from home, schedule any material to be delivered or stagger pickup times.
- If materials can be secured appropriately, consider storing materials at field locations using locked CONEX boxes or shipping containers.
- When field personnel have work that requires overnight travel requiring accommodations, any requirements such as cleaning expectations should be communicated with the lodging facility ahead of time. While there may not be any method to enforce adherence to cleaning requirements, this may add a level of comfort for personnel who are required to travel.
    - Enforce single occupancy only in hotel/motel rooms, cottages, efficiency units, etc.
    - Provide traveling employees with "go-bags" that have cleaning supplies and instructions.
    - Seek accommodations where employees can cook their own meals to avoid going out to restaurants, take outs, etc.
    - Allow employees to use personal recreational vehicles instead of other lodging accommodations if they have access to them.

Working in Potentially Contaminated Areas

To support the workforce, organizations should consider the following practices to identify a potentially contaminated home and to mitigate exposure to field personnel:

- Conduct daily safety briefings prior to field workers going on service calls and develop an internal website with Frequently Asked Questions that are updated with the most current PPE guidance and other mitigation requirements.
- Develop a process workflow for customer calls for service. The service consultant should ask questions related to COVID-19 precautions. Consider the work ticket saying: COVID-19 related questions asked: YES. Any indicators of COVID-19: YES/NO.
- Develop a process workflow for field workers to verify what has been reported on a work order with questions and talking points to use at the customer's door to identify potential COVID-19 concerns. The workflow will give employees the flexibility to gauge the situation and to social distance voluntarily when service may require entering a home/building. If a customer reports that he/she has symptoms, the workflow document should include direction for the employee to

call a supervisor to decide if the work is needed for safety, reliability, or resiliency reasons or not. If the work must be carried out, the employee may follow the workflow document using upgraded PPE. (See example of COVID-19 Workflow & Biohazard Assessment.)

- Questions/directions to consider for a workflow document include:
  - Employees ask three pre-entry questions to attempt to determine the status of COVID-19 at the location:
    - Has anyone in the residence, location, or establishment self-quarantined or self-monitored for COVID-19 within the past 14 days?
    - Has anyone in the residence, location, or establishment had a possible exposure to COVID-19 within the past 14 days?
    - Has anyone in the residence, location, or establishment tested positive for and had a confirmed case of COVID-19 within the past 14 days?
    - Is anyone in the residence, location, or establishment sick with a respiratory illness, cough, fever, congestion, or experiencing shortness of breath?
  - Employees who enter a customer location with an active case of COVID-19 should consider the following protective measures:
    - Don the appropriate PPE to protect themselves from any possible contact with the virus.
    - Ask that the sick person go to another room.
    - Practice social distancing (at least 6 feet) from healthy people in the location.
    - Avoid touching surfaces whenever possible.
    - Avoid touching your face, nose, mouth, or eyes.
- Allow field personnel to call a "safety stop" when they are reluctant to enter a dwelling. A field worker should call his/her supervisor and discuss essential vs. non-essential work and proper precautions to take.
- Refer to CDC and OSHA guidance on the use and handling of PPE. OSHA issued specific guidance on COVID-19, which can be found online at:

  Enforcement Memos - OSHA
- Ensure employees are aware of the COVID-19 symptoms and provide a mechanism (e.g., confidential hotline) for personnel to contact an organization's internal/external medical provider.

Exposure Mitigation Considerations in the Field Work Environment

- Regardless of whether a work zone or job site is in a COVID-19-restricted area or containment zone, organizations should consider social distancing steps to minimize exposure in the work environment. Jobs should be planned to:
  - Minimize the need for personnel to work within 6 feet of one another and to avoid person-to-person contact and the sharing of tools and equipment.
  - Use appropriate PPE (i.e., Flame Resistant or surgical masks) when employees must work within 6 feet of each other for extended periods of time.
  - Split critical employees into teams or groups with different shifts and/or different field locations to limit exposure if any employees become infected.

  - Minimize interaction between employees and different work groups/pods.
  - Increase the frequency and level of cleaning and disinfection of any temporary field offices, job trailers, shared vehicles, tools, and equipment.

- For field workers who are required to travel and to stay overnight, consider:
  - Offering alternate lodging, such as mobile homes and RVs equipped with washer/dryers, showers, and kitchens.
  - Dividing workers into small teams or pods and keeping those teams separated with assigned vehicles and different base camp/staging area locations. Consider rental options to keep the number of workers in a single vehicle low.
  - Instituting triple wellness checks with mandatory temperature readings and/or viral testing at arrival, at mid-shift, and when going off-duty, with a health survey.

- If an employee tests positive for COVID-19, consider:
  - Tracing the individual's steps to determine who that individual worked with in close proximity, as defined by the CDC:

    How COVID-19 Spreads - CDC
  - Notifying other employees who came in contact with the individual.
  - Cleaning and disinfecting the area where the individual works and consider options for notifying, monitoring, and potentially quarantining workers who had been in close contact as each situation dictates using CDC guidance:

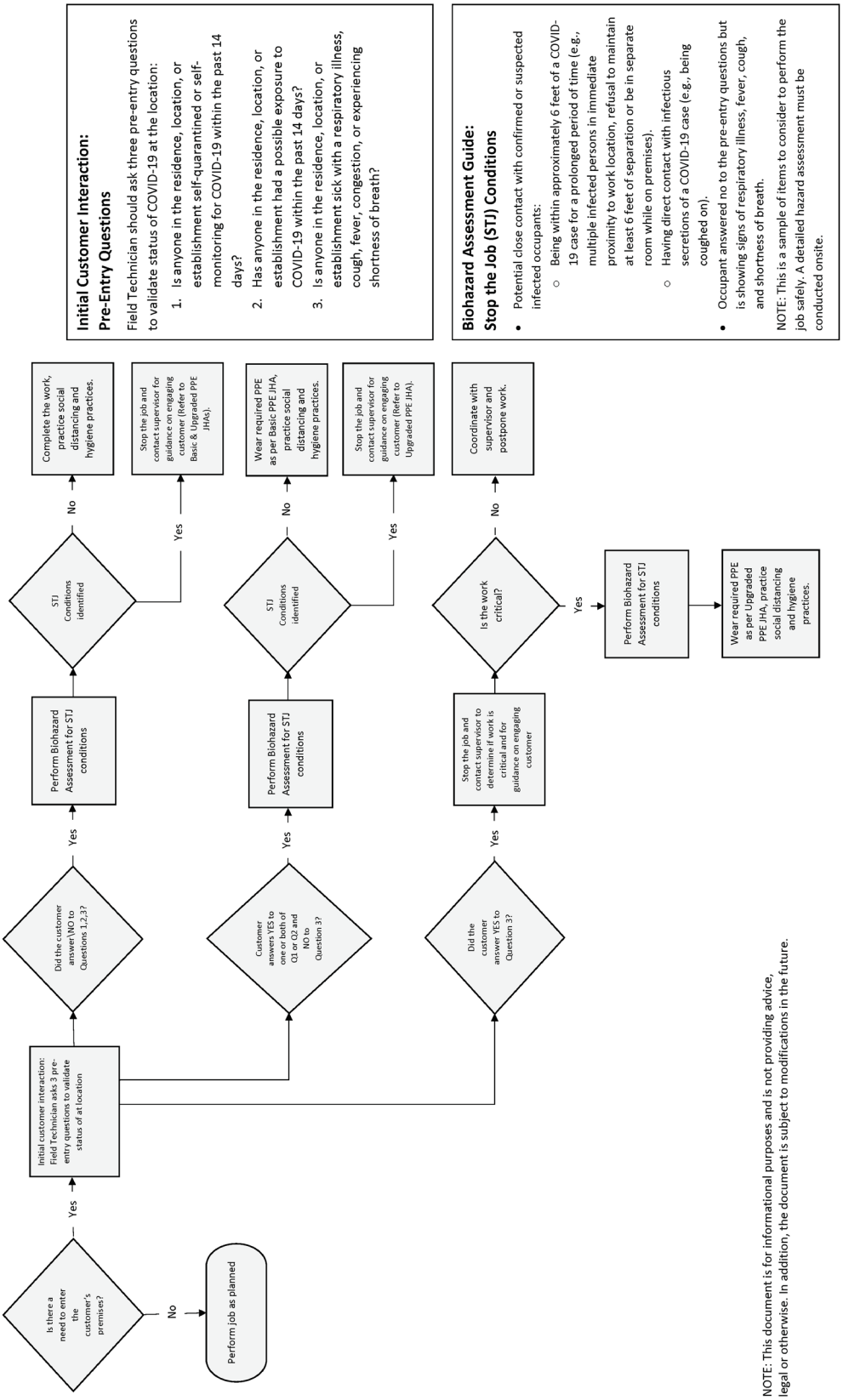
    Cleaning and Disinfecting Your Facility - CDC

Communicating Policy/Process Changes for Field Work

- Consider how changes to policies and processes for field workers are communicated to improve adherence.
  - Communicate changes with local, state, or federal government decision makers either directly or through the applicable statewide organization.
  - Use an Incident Command Structure and Incident Management Team to flow communications down to field workers.
  - Use a variety of communications methods that may include but are not limited to:
    - Phone conversations.
    - Organization-issued mobile devices, including tablets, computers, or other electronic devices.
    - Organization-approved communication applications such as Slack, Microsoft Teams, etc.
  - Hold virtual in-person daily and monthly safety briefings/meetings.
    - Consider holding meetings with senior managers 1-3 times per week to ensure a unified message, given rapidly shifting conditions.
  - Use SharePoint or similar tools for Frequently Asked Questions that everyone can access via computers or mobile devices.

Additional Resources

Example of COVID-19 Workflow & Biohazard Assessment



Planning Considerations for Technology

This section builds off the energy sector's strong cybersecurity foundation and practices to meet the unique technology challenges presented by resuming in-person operations following the COVID-19 pandemic. Organizations should consider these perspectives in conjunction with existing practices when employees are returning to in-person field or office settings and are adapting to a "new normal" in the workplace due to COVID-19. It includes two parts:

- General technology guidance for a workforce that is returning to an in-person setting following extended remote work or a mission-essential work only situation.
- Guidance for information technology (IT) management and staff as the workforce adopts a new posture of working, whether remote or in person, following a prolonged period of remote work or a mission-essential work only situation.

A future version of this section will include guidance for the operational technology (OT) environment as new connectivity options are considered in the face of sequestration, remote work, or limited staffing due to COVID-19.

Planning Considerations for a "New Normal"

As organizations plan for the return to some in-person work at field or office sites, they need to consider that some of the workforce may not return to in-person settings for several months or, if they do, it will be at a much-reduced regularity. This may be the new normal.

Prior to the COVID-19 pandemic, IT and cybersecurity staff protected what was on internal networks and systems via limited access. With more employees working remotely on a more regular basis, vigilance in protecting the network is an even greater priority. This will extend through the breadth of technology usage, including endpoint, DLP, cloud, and VPN. Focusing on how endpoint security is controlled and from where, as well as how, will be essential in maintaining the security of networks. A good analogy for this shift in posture could be the advent of Cloud adoption that many organizations experienced over recent years.

Recognizing circumstances vary across different networks, investor-owned electric and/or natural gas companies, public power utilities, independent power producers, and electric cooperatives may weigh the following technology considerations as they adapt to a new normal:

- Organizations should update service catalogs of mission-essential vs. non-essential activities specific to some of the workforce returning to in-person field or office settings, while supporting a larger remote population than previously, to inform prioritization of work orders/requests.
- Organizations should identify which employees and contractors will return to their field sites and offices to perform their duties and what their technology and application/access needs will be.
- Organizations also should consider whether these employees and contractors will return to an in-person setting on a full-time basis or will retain some ability to work remotely.
- Organizations should identify which employees and contractors will not return to field sites or office settings, but will continue to work remotely permanently, and what their technology and application/access needs will be.
    - For organizations considering a "bring your own device" policy, use additional tools like a zero trust VPN or telecommuter gateway that can monitor MAC addresses.

- Management and enterprise security staff should update existing technology policies to ensure they address the changing workplace and that policies align with new remote work considerations. Technology should be considered in all HR, finance, and legal policies.
- Organizations should involve their IT, finance, HR, legal, and union officials in the development of any reentry plan to develop the appropriate gating/phases, scheduling, and training for the workforce.
  - The recent Office of Personnel Management (OPM) federal guidance suggested that, following assessment and planning activities, workplace return followed three broad gated phases: (1) lift mandatory telework, (2) lift maximum telework, (3) implement optimized operations and new work arrangements, while ensuring the health and safety of the workforce in each gated phase.[7]
  - IT should comment on any "Gating Period" or "Transition Framework" to ensure appropriate testing of equipment for vulnerabilities, which is (covered in the next section).
- Organizations should consider the implications of a greater proportion of its workforce working remotely following COVID-19 and should decide how policies and procedures could be adapted when they do not have as much equipment onsite. Preventing data loss and implementing protections may be more difficult.
- Security staff and the workforce should have heightened awareness regarding emerging cyber threats, including 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. Building employee awareness of available capabilities and individual technology fluency will become a key driver of success for remote work.
- In light of increased remote work, security staffs should consider whether to share information more broadly regarding threats and other malicious activities with the E-ISAC, the Downstream Natural Gas ISAC, the Multi-State ISAC, and law enforcement so it can be communicated broadly with other sector participants and government partners to maintain situational awareness.

Supporting the Workforce Operating in a Mixed In-Person and Remote Situation

Investor-owned electric and/or natural gas companies, public power utilities, independent power producers, and electric cooperatives should consider the following practices to support networks and systems that combine in-person work with remote work.

Return to In-Person Work Considerations

For those who return to their field or office setting, IT staff should review system status and architecture prior to arrival of the workforce. Considerations include:

- End-user or enterprise-level hygiene and best practices are now more critical than ever. While some of the technical procedures may have changed temporarily or permanently, disciplined execution of the basic "blocking and tackling" tactics and techniques of cybersecurity will continue to be the major determinant in security outcomes.

[7] Memorandum for Heads of Executive Departments and Agencies - OPM

- Given that employees took a large amount of IT equipment home to support their remote operations, organizations will have to consider how to return this equipment carefully to the field/office as the workforce returns to in-person operations. Each piece of this equipment should go through some type of testing or verification to ensure that necessary controls were observed during remote work and that appropriate patches and software upgrades were applied. A "cyber lab" may have to be set up to test equipment before it is allowed on the network.
- Organizations should survey all the changes and additions made to the IT environment in response to COVID-19, continuing to execute good change management. They should decide which changes are no longer necessary and which will become part of doing business going forward. Particular attention should be paid to device inventories, accounts, and application permissions. (This list is indicative not exhaustive and highlights some of the most common issues to address for newly remote workers.)
  - While a full inventory of equipment is a labor-intensive effort, the need to do so depends on the changes that were initiated to support remote work.
  - IT staff also should look not only at the physical MAC address of devices, but also at permission/provisioning. Automated systems can be set up to help this process.
  - Patching is important for servers as well as clients and endpoints. If employees did not have the ability to patch devices given lack of access to VPN during remote work, organizations may consider setting up a downstream public server outside the firewall to push out updates to ensure patches are up to date before any return to work or the network.
  - Organizations should develop a policy for what should be done if an employee or contractor downloaded organizational or proprietary data (surveys, one-line diagrams, etc.) to a private machine. Determine the steps to clean the data and return it to the corporate network.
  - As more of the workforce returns to an in-person setting with equipment that was used outside the internal network, organizations should consider implementing bandwidth conservation filters on edge devices, especially if they are unable to verify or test returning equipment fully. Keep outgoing filters stringent and possibly add additional filters during the transition period.
  - If organizations are concerned about bandwidth issues when there are both in-person workers and a greater remote workforce, they should consider web-based RDP to help split load and set up web-based RDP sessions to facilitate use and security.
- For organizations that used "hoteling," "kiosking," or other shared workplace layouts prior to the pandemic, develop stringent cleaning procedures to "protect station transfer." Similarly, organizations also could adopt time-based transition standards based on CDC and state guidance for cleaning surfaces and could disallow use of stations for a certain time.
  - Organizations may continue assigning specific keyboards and mice, as may have been done for sequestered control operators, for more staff.
  - If possible, a leading practice used in Asia is to provide personal silicon or plastic keyboard and mouse covers for shared equipment.
  - At a minimum, organizations should discourage equipment sharing unless there are thorough cleaning procedures and the workforce feels comfortable.

- Organizations should involve the workforce and union leadership in the development of these policies and procedures to ensure buy-in and comfort with new cybersecurity measures.
- Kiosks used for visitor "sign-in" and badges also should have cleaning procedures.

- Evaluate IT access to organizational data centers, especially if data centers are co-located with control rooms or other sequestered areas. If those areas are isolated or require COVID-19 testing, IT staff may be unable to access the data centers without triggering cleaning and other health and safety requirements.
  - As organizations plan for future post-pandemic operating configurations, they should consider procedures to ensure that IT staff who may be designated as mission-essential can access these data centers in isolated areas that will prevent infection of mission essential control room operators. Similarly, organizations should consider if data centers should be in an isolated area that might undergo sequestration in a future pandemic scenario.

Upgrade Your Long-Term Remote Work Posture

- Though most organizations are planning for return to in-person operations, for planning purposes, they should consider a future return to full remote work should an additional COVID-19 wave occur.
  - Organizations should identify the true need the workforce has for in-person equipment and whether staff would be able to work on a laptop versus a desktop full time. Issuing laptops could provide the maximum flexibility (and security) for a workforce that transitions seamlessly between remote and in-person work. The downside to this approach is cost and management of mobile resources.
  - For organizations that decide not to issue laptops, either issuing additional home hardware or desktops or the ability to establish a VPN or other privileged remote access capabilities into a specific desktop inside the internal network may be options.
  - Organizations already may have developed products for third-party vendors that provide privileged remote access. It may be appropriate to extend these to the broader workforce who do not have organization-issued laptops. Assuming the appropriate controls are in place (strong passwords, multi-factor authentication, principles of least privilege, and monitoring), this could be an option for resource-constrained entities.
  - For remote access approaches, organizations should set up each user individually and set up profiles in the PRA appliance that the individual employee or contractor only can access their own PC. IT staff could record those remote sessions into an employee PC to ensure there is no anomalous behavior.

- For the workforce that will continue remote work, organizations should consider "at-home" mitigation efforts to take pressure off home routers that likely are overloaded with additional use by a range of additional uses.
  - To alleviate this pressure, several organizations issued staff 25 ft. ethernet cables to plug into a router to take pressure off the wireless network.
  - Ensure automatic locking on "home" machines to ensure no inappropriate access of the corporate network by family members.

- Call centers are another important element of operations. For call center operators who may continue to work remotely, consider engaging local telecom companies to understand potential capacity issues that may impact call center operations.
  - Understanding the call center posture may enable organizations to send appropriate call center equipment home or to provide the workforce with mobile equipment to ensure continuity of service.
  - To facilitate remote work during the COVID-19 pandemic, some organizations utilized diverse telecommunications carriers. This may be a worthwhile long-term strategy to increase communications resilience.
- From a remote work perspective, the workforce should continue to take steps to mitigate cybersecurity risks while working from home, such as following existing organizational policies and those identified in the SANS Working from Home Factsheet.[8]
  - Organizations should continue existing cybersecurity practices and should continue to provide employees and contractors with updates and training about cyber threats via credential harvesting. Attackers will reference the pandemic in social engineering campaigns as they try to gain legitimate credentials to access the network. Some common indicators are:
    - Someone creating a tremendous sense of urgency, often through fear, intimidation, a crisis, or an important deadline.
    - Pressure to bypass or ignore security policies or procedures or an offer too good to be true.
    - A message from a friend or co-worker in which the signature, tone of voice, or wording does not sound like them.
- Organizations should ensure that remote workers secure their home or remote site, especially their wireless (often called Wi-Fi) network that enables devices to connect to the Internet. Most home wireless networks are controlled by the Internet router or a separate, dedicated wireless access point. Both work in the same way: by broadcasting wireless signals to connected home devices. Securing the remote wireless network is a key part of protecting not only the employee's site or home, but the entire organization.

  Key steps include:
  - Ensure the default administrator password is changed: The administrator account is what allows you to configure the settings for your wireless network. An attacker easily can discover the default password that the manufacturer has provided.
  - Ensure only trusted individuals of the workforce can use this network. Do this by enabling strong security so that only people you trust can connect to the home wireless network. Strong security will require a password for anyone to connect to your wireless network and will encrypt their activity once they are connected.
  - Require remote workers to follow organizational cybersecurity guidelines and policies.
- When a site asks users to create a password, create a strong password: the more characters it has, the stronger it is. Using a passphrase is one of the simplest ways to ensure that you have a strong password. A passphrase is nothing more than a password made up of multiple words, such as "bee honey bourbon." Using a unique passphrase means using a different one for each

[8] Top 5 Steps to Securely Work From Home - SANS

device or online account. This way if one passphrase is compromised, all your other accounts and devices are still safe.

- Ensure computers, devices, programs, and apps are running the latest version of software. By ensuring that computers and mobile devices install these updates promptly, it is much harder for someone to hack them. To stay current, simply enable automatic updating whenever possible. This rule applies to almost any technology connected to a network, including work devices as well as Internet-connected TV's, baby monitors, security cameras, home routers, gaming consoles, or even cars.
- Ensure children and guests are not using work devices. Children, guests, or other family members accidentally erase or modify information, or, perhaps even worse, accidentally infect the device. Please ensure that only authorized personnel continue to use work devices and computers.

The Microsoft Guidance on Remote Work Considerations also provides several helpful considerations.[9]

[9] Work Remotely, Stay Secure—Guidance for CISOs - Microsoft

Internal and External Communications

Section Summary

This section provides guidance that investor-owned electric and/or natural gas companies, public power utilities, electric cooperatives, and independent power producers can consider in the development of internal and external communications during a pandemic.

While external communications and stakeholder engagement remain important, internal communications are critical in the lead-up and throughout a health emergency. To that end, it is imperative that organizations regularly update and maintain current contact information for employees, customers, and other key stakeholders.

It is important to identify a team member who will lead both internal and external communication efforts and ensure that he/she has easy access to information and decision makers. Communications executives should provide input on the organization's response to the crisis given the potential impact decisions may have on public perception and the long-term reputation of the organization.

The guidance in this document was collected from organizations across the industry. The intent is to serve as a general information resource and not to set any industry standards. This document is evergreen and will be updated regularly to reflect additional or revised guidance as it is received.

Internal Communications

Maintaining frequent and transparent communications with employees and contractors is imperative throughout a pandemic. Among the considerations for organizations:

- Identify existing and new communications channels that can be used to reach employees and contractors who are working in an office environment, working at critical facilities, working from home, or working in the field. Updates may need to be packaged and pushed out to different groups of employees based on their access to communications throughout the workday. Providing specific communications and guidance to managers and supervisors, in advance of wider employee and contractor communications, can help supervisory staff better manage their teams.

- Distribute an email that was sent to office workers to crews in the field using a push-notification tool, or incorporate the key messages into safety and planning meetings that take place prior to crews heading out to work in the field, where their access to communications may be limited for safety reasons. The timing of messaging should account for shift workers.
- Use a variety of internal communications channels, including:
  - Email
  - Company intranet with a special section dedicated to the pandemic
  - Employee information website (non-firewalled) for unobstructed access by field employees
  - Push-notification tools (e.g., EverBridge, MailChimp, CivicPlus, Onsolve, Jetty, etc.)
  - Monitors and displays
  - Video conferencing tools (e.g., Teams, GoToMeetings, WebEx, Zoom, etc.)
  - Conference calls
  - In-person briefings that are done in accordance with all applicable safety and health guidelines
  - Print materials (e.g., direct letters to employees, posters, etc.)
  - Videos
  - Pre-recorded phone messages
- Identify the types of situational updates that may be provided to employees. Consideration should be given to whether any of these updates should be extended to contractors and/or members of the public who are physically onsite at the organization's facilities. Organizations should consider using an online intranet repository or reference site that maintains updated information.
- Identify who will provide updates to employees and in what circumstances. For example:
  - HR or HR official
  - CEO/president/chairman
  - Other executives
  - Health and safety staff
  - Facilities management staff
  - Team leads or other direct managers
  - Organized labor/union business leaders
  - Federal, state, or local authorities
- Identify the frequency with which each type of update will be provided to employees. For example:
  - Daily general updates
  - Weekly updates from chief executives or organizational leadership
  - As-needed updates

- Changing circumstances
- Fatalities resulting from the health emergency

- Provide employees with a means to ask questions before or during updates. Pulse surveys are an effective tool to help assess whether employees feel they are receiving enough (or too few/too many) communications.
- Create templates and messages as starting points before a pandemic, given that pandemics have the potential to move much faster than anticipated. Organizations should strive to be fast, transparent, and consistent with messaging. If decisions are still up for discussion, it is important to let employees know what is being considered, that deliberations are ongoing, and when a decision may be expected.

Examples of materials organizations should consider developing in advance include:

- Templates and key messages for each business continuity phase being activated.
  - Best practices for good hygiene
  - Travel guidelines
  - Social distancing and restricted access guidelines
  - Enhanced health screenings and other health guidelines
  - Self-quarantining and return-to-work guidelines
  - Moving to a remote work-posture for those who can work from home and identifying roles/employees who will remain onsite or in the field for mission-essential work
  - Returning from a remote work posture and facility reentry
  - IT and security considerations
- Templates for providing updates on employees and/or contractors impacted by the health emergency.
  - For transparency, organizations should consider developing a template to use and should determine a frequency for announcing when employees or contractors are impacted (i.e., testing positive).
  - For suspected and confirmed cases, contact tracing guidelines may require organizations to send targeted notifications to other employees who may have been exposed.
  - These communications require close coordination with HR and legal to ensure all laws—particularly as they relate to privacy—are followed.
  - Templates for announcing fatalities related to the health emergency. This may change depending on the frequency of fatalities. A single initial announcement may come directly from a chief executive or other senior executive and may be very personalized about the employee. If the pandemic causes a high number of fatalities, organizations may consider the impact to employees of receiving a deluge of fatality announcements and may instead announce and memorialize multiple employees at once to limit the frequency.

- Identify additional experts and resources that employees can access to answer their questions.
  - Many healthcare providers will develop materials specific to the health crisis that can be shared with employees. Some health plans also may establish options for virtual visits

with doctors. It is important to keep employees updated as these resources become available.

  - Federal, state, and local health officials will be a tremendous resource for up-to-date news and analysis during an ongoing health emergency. Employees should be made aware of these resources, and website links should be included in employee communications (email, intranet, etc.).

- Provide specific information related to the facility reentry process, which likely will be a concern for employees who have been working remotely, including:
  - Updates on new processes and procedures being put into place
  - Updates on business continuity plans and any potential impacts to how and where employees should expect to work during a health emergency
  - Updates on facility reentry planning
  - Updates on the status and any impacts of the health emergency on employees
  - Updates aimed at the physical and mental health and well-being of employees, including employee assistance programs
  - Updates and reminders for health and safety best practices
  - Updates on availability of personal protective equipment (PPE) and sanitization supplies
  - Updates on cyber hygiene and other IT and security considerations
  - Updates and words of encouragement directly from chief executives and other business group leaders
  - Updates on existing community risks and recommendations from local health authorities
  - Safety reminders and best practices

External Communications

Maintaining frequent and transparent communications with customers/consumers, media, community leaders and policy makers, and other stakeholders also is important throughout a pandemic. Organizations should consider the following based on the audience:

- Customers/Consumers
  - Prepare to communicate about the steps the organization is taking to ensure continuity of operations and energy delivery.
  - Prepare to communicate about mission-essential work that will continue during the crisis and the health and safety steps being taken by employees in the field to keep both them and customers safe.
  - Assess which materials (e.g., mailings, emails, etc.) already are scheduled and consider whether to postpone any planned communications that are not critical or related to the health emergency.
  - Assess all active and planned advertisement buys to see whether it may make sense to pause, postpone, or refocus the content of ads.

  - Prepare to communicate any restrictions or closures for in-person customer service or payment offices.
  - Prepare to communicate about programs that may be suspended temporarily (i.e., home energy audits, smart meter replacements, in-person meter reading, etc.).
  - Prepare to communicate about payment support programs available to customers.
  - Assess all communications for timeliness. Do not send updates that are obsolete by the time they are sent.

- Media/Reporters
  - Organizations should develop a template or strategy for how (or if) statistics and updates on employees being impacted by the health emergency will be provided. If this information is being provided to employees, it likely will reach reporters.
  - Organizations should engage with media and explain to reporters what steps are being taken to ensure the continuity of operations to help keep electricity on and natural gas flowing. Communicate steps being taken to provide any extraordinary support to local communities.
  - Organizations should communicate how they and the industry are working to keep employees and communities safe and healthy and to limit the potential spread of disease.
  - Reporters likely will be interested in any extraordinary steps being taken as part of the business continuity plan (i.e., sequestering employees, stopping non-essential work, etc.).
  - If stay-at-home orders have been issued, it may be important to engage with reporters to explain how mission-essential employees are exempt and that essential work will continue.

- Federal/State/Local Government Partners
  - These key stakeholders may need to be educated on an ongoing basis about steps organizations are taking to keep employees safe and to provide continuity of operations.
  - Public officials may be facing pressure to act, so it is critical that communications teams coordinate closely with government and regulatory affairs teams to help these government stakeholders understand the steps the organization is taking to protect the health of employees and to help keep the lights on and the natural gas flowing.
  - During a national crisis, organizations should anticipate a government response that is federally supported, state managed, and locally executed. At each level, there will be stakeholders to help support asks and needs for regulatory relief, financial considerations, access to materials (e.g., PPE and testing), supply chain challenges, and essential worker designations that enable mission-essential employees to move despite any potential stay-at-home orders, among other issues.
  - Employees should be reminded that communications to government employees or contractors may be a matter of public record and subject to FOIA requests.

- State and Local Health Officials
  - During a health emergency, the local impact of the emergency will inform localized decision making. Therefore, it is critical for organizations to stay connected with, and to

receive regular updates from, state and local health officials to account for local circumstances when making decisions.

- Organizations should consider designating one company representative to be the point of contact with local health officials. In a health emergency, these officials may be the gatekeepers for testing, PPE, and other critical supplies.

- Community/Charitable Organizations
  - During a local health emergency, many local nonprofit organizations likely will see a spike in demand for services from impacted individuals and households. Organizations should consider ways to work with these organizations to identify what local needs are not being met. Depending on the circumstances, there may be a need for financial or food donations to local food banks and community kitchens; donations to groups that manage programs that offer financial assistance grants to help people pay their bills; donations to shelters that may see an influx of people seeking help or that may need to stand up temporary shelters to accommodate social distancing guidelines; or donations of surplus supplies and materials that may be in high demand.
  - If schools are closed, organizations may consider developing fun educational materials aimed at school children. Both customers and employees may appreciate this.
  - Organizations should consider allowing their idle resources (e.g., parking lots, equipment, etc.) to be used to help the community; communicators should include legal in any discussions.

- Vendors/Suppliers
  - Vendors and suppliers should be kept updated about any potential changes in operations to ensure that they can continue to provide the products and services that will be needed to maintain continuity of operations. While this likely will be the responsibility of the procurement or legal departments, communicators may be asked to help with messaging and outreach.
    - Additional needs may arise, and potential supply chain disruptions should be expected.
    - A vendor or supplier temporarily may close due to a health emergency, so it is important for organizations to maintain communications with their internal teams to be prepared to answer any questions related to a supply chain disruption for critical materials or services.

- Investors and the Financial Sector
  - Financial institutions and analysts will be watching closely for any impacts that the health emergency has on the electric power industry and on individual organizations, so it is important to coordinate closely with financial relations teams to ensure unity of message. It is important for organizations to convey that they are continuously assessing risks and developing reasonable strategies to address potential impacts.
  - Some events, such as annual shareholder or member meetings, may need to become video conference calls or virtual meetings instead of in-person meetings due to social distancing and travel restrictions. It is important to coordinate with legal counsel on organizational bylaws/requirements, etc.

The following guidance is specific to social media and web-based communications:

- Social Media—Organizations should consider using a dedicated social media hashtag (#) in all pandemic-related posts and using their social media channels to:
  - Reassure customers and community members that business continuity plans have been activated to help keep the lights on and the natural gas flowing.
  - Encourage customers and community members to adhere to social distancing guidelines.
  - Educate customers about available payment assistance programs.
  - Educate customers and community members about essential work and about keeping a safe distance from mission-essential crews working in the field. Incorporate photos demonstrating new guidelines and protection (i.e., workers in masks).
  - Thank and show mission-essential workers in the field and at critical facilities (avoid having sensitive information and equipment in the background), as well as other employees and their remote work setups (consider any privacy concerns or permissions that may be needed).
  - Highlight community engagement activities.

  All previously planned social media content should be assessed for appropriateness during the pandemic.
- Website—Organizations should consider the following:
  - Anyone going to an organization's website during a health emergency should be able to find information quickly about any steps the organization is taking to protect the health of its employees and to provide continuity of operations.
  - A message could be added to the homepage and a dedicated page created that provides information and resources for residential customers.
  - For small business customers, as well as larger customers from the commercial and industrial sectors, organizations could develop resources and make customer support staff available to help these customers navigate and apply for financial relief in the event that government programs are established to help businesses impacted by the health emergency.

Industry Communications

- In a health emergency, the ESCC's public affairs team will develop key messages that cover the industry's coordination efforts and response activities that are underway.
- Industry trade associations will cascade the ESCC messaging to their membership and government partners and will facilitate message development and coordination among their members.
- Industry trade associations will coordinate with member organizations to educate government stakeholders and the national organizations representing state and local government leaders.
- Industry trade associations also will coordinate with national organized labor groups.

Storms & Other Events During a Pandemic

Given that a health emergency could extend for many months, it is possible—and in some parts of the country even likely—that weather- and natural disaster-related or other types of outages could occur during the same time period.

- Organizations may consider developing a staffing plan that identifies who cycles off normal and pandemic work to focus on storm- or other natural disaster-related communications. Organizations also may consider identifying and training additional staff who can support customer engagement on social media, especially if outages are anticipated while a stay-at-home order is in effect.
- During non-health emergencies, such as severe storms, investor-owned electric companies, public power utilities, electric cooperatives, and independent power producers and suppliers often can speed power restoration by bringing in additional skilled workers from other organizations and contractors from outside the area affected by the emergency. This practice is known as mutual assistance or mutual aid, and it is a hallmark of the electric power industry. However, during a pandemic, mutual assistance either may not be available or may be severely limited. Organizations may need to adjust messaging to reflect that restoration times may be delayed as a result.
- The electric power industry also considers the availability of equipment and materials for restoration during its planning process. The electric power industry depends on many types of businesses to supply equipment and materials used in maintaining and restoring its infrastructure. A pandemic could affect all types of businesses, including the manufacturing and transportation industries, and restoration times may be impacted.
- The Resource Guide features comprehensive mutual assistance considerations for the COVID-19 pandemic. See the “Mutual Assistance Considerations” section.

Additional Considerations

- Develop and execute messaging consistently, including notifications for all levels of government, during conference calls, media outreach, and engagements with other stakeholders.
- Take advantage of existing business continuity structures or operational processes to track, summarize, and report operational activities.
- Build an organizational structure and process to track, summarize, and report operational activities.
- Identify a single media spokesperson and points of contact for stakeholder groups.
- Monitor news reporting and social media. Immediately address inaccuracies or rumors that could create panic or heightened public anxiety over the availability of electricity and natural gas services.
- Adjust external distribution lists for messaging and stakeholder contacts as needed.

- Develop a logistical plan for safely moving the videographers, photographers, and writers who will be capturing content. Ensure that those who will be traveling during stay-at-home orders have necessary letters of transit on company letterhead. Determine whether social distancing and/or PPE are needed for these content gathering teams and/or the subjects they are interviewing and filming.
- Hold daily communications leadership calls to share information, coordinate communications to ensure appropriate alignment, surface ideas for input, and address time-sensitive hot topics.
- Maintain a library of "off-the-shelf" messaging that has been pre-approved by company leadership (including legal and human resources).
- Distribute updated messages and summaries of key media or stakeholder interactions with company leadership.
- Identify subject matter experts as needed as the situation evolves; review media training, etc., as needed.
- Anticipate the need for additional IT or communications platforms to help reach employees and other stakeholders.
- Anticipate the need for backup staffing, use of contractors, or mutual assistance resources for communications.
- Network with peers to share ideas and resources.

Industry Contacts

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