Filing Receipt

Received - 2023-03-15 12:28:39 PM
Control Number - 53385
ItemNumber - 1248

PROJECT NO. 53385

PROJECT TO SUBMIT EMERGENCY OPERATIONS PLANS AND RELATED DOCUMENTS UNDER 16 TAC § 25.53	§ § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

SOUTHWESTERN PUBLIC SERVICE COMPANY'S EXECUTIVE SUMMARY OF PUBLIC UTILITY COMMISSION OF TEXAS EMERGENCY OPERATIONS PLAN PURSUANT TO 16 Tex. Admin. Code § 25.53(c)(1)(A)(i)

Table of Contents

I. Executive Summary 3

II. Addressing Requirements of 16 TAC § 25.53 4

III. Implementation of EOP 4

IV. Record of Distribution and Training 5

V. Emergency Contacts 5

GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym/Defined Term	Meaning
Commission	Public Utility Commission of Texas
PURA	Public Utility Regulatory Act
SPS	Southwestern Public Service Company, a New Mexico corporation
TAC	Tex. Admin. Code
Xcel Energy	Xcel Energy Inc.

PROJECT NO. 53385

PROJECT TO SUBMIT EMERGENCY OPERATIONS PLANS AND RELATED DOCUMENTS UNDER 16 TAC § 25.53	§ § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

SOUTHWESTERN PUBLIC SERVICE COMPANY'S EXECUTIVE SUMMARY OF PUBLIC UTILITY COMMISSION OF TEXAS EMERGENCY OPERATIONS PLAN PURSUANT TO 16 Tex. Admin. Code § 25.53(c)(1)(A)(i)

Southwestern Public Service Company ("SPS") files this Executive Summary pursuant to 16 Tex. Admin Code ("TAC") § 25.53(c)(1)(A)(i). This Executive Summary describes the contents and policies in SPS's Public Utility Commission of Texas ("Commission") Emergency Operations Plan ("EOP") and includes references to specific sections and page numbers of SPS's EOP that correspond with the requirements of 16 TAC § 25.53. This Executive Summary also includes the record of distribution of the SPS EOP required under 16 TAC § 25.53(c)(4)(A) and the affidavit required under 16 TAC § 25.53(c)(4)(C).

I. Executive Summary

Southwestern Public Service Company, d/b/a Xcel Energy, is a New Mexico corporation (SPS) and wholly-owned electric utility subsidiary of Xcel Energy Inc. (Xcel Energy) headquartered in Amarillo, Texas. SPS is a vertically integrated generation, transmission, and distribution electric utility that serves approximately 403,400 customers in a 52,000 square-mile area of the Panhandle and the South Plains of Texas, and eastern and southeastern New Mexico. SPS is a member of the Southwest Power Pool Regional Transmission Organization and is synchronously connected to the Eastern Interconnection grid. SPS is also connected to the Western Interconnection grid through three high-voltage direct-current back-to-back converters. Although SPS operates adjacent to the Electric Reliability Council of Texas (ERCOT) grid, it has no direct interconnections with ERCOT transmission owners.

The SPS Emergency Operations Plan (EOP) is a procedure that prescribes methods to respond to unexpected events that are beyond the normal operations of the power system. Causes of these events may be the loss of generation, loss of fuel supplies, severe weather-related

transmission interruption, or other events whereby generation or transmission facilities become limited such that the ability to serve the total system demand is in question.

In compliance with Texas Admin Code ("TAC") 16 § 25.53, SPS's EOP is intended to support and advance planning and event response for SPS leadership teams and business unit responders of Xcel Energy. This EOP describes the transition from normal operations to operations supporting restoration and recovery from significant incidents, events, and emergencies. As such, the EOP contains confidential information. Confidential information within SPS's EOP has been redacted and in accordance with 16 TAC § 25.53(c)(1)(D) will be provided for Commission Staff to review upon request. This EOP reflects the experience and knowledge gained from dealing with past incidents, emergency situations, and all incident types and is intended to be a reference tool outlining strategies and tactics to be used to meet the event response objectives. SPS is a vertically-integrated utility operating outside of ERCOT, therefore, SPS's EOP does not address requirements for retail electric providers, electric coops, or municipally owned electric systems.

II. Addressing Requirements of 16 TAC § 25.53

SPS's EOP addresses the requirements under 16 TAC § 25.53 as follows:

Approval and Implementation	Section I, Pages 6-7
Communication Plan	Section II, Pages 8-10
Plan for Pre-Identified Supplies	Section III, Page 11
Plan for Staffing During Emergency Response	Section IV, Page 12
Weather Related Hazards and Process for Activating the EOP	Section V, Page 13
Transmission and Distribution Related Annexes	Section VI, Pages 14-17
Generation Resources Annexes	Section VII, Page 18-21
Drills	Section VIII, Page 22

III. Implementation of EOP

Responsibility for the approval and implementation of the SPS EOP resides with the President of Xcel Energy, Texas and New Mexico who serves as the President of SPS. Responsibility for the plans and procedures within the SPS EOP reside with the operational areas and business units within SPS. Responsibility for the maintenance, review, and approval of the Incident Response Plans (IRP) included in this EOP resides with the Xcel Energy Enterprise

Preparedness department. Each policy, procedure, or IRP includes documentation regarding employees responsible for review and approval of the documents.

IV. Record of Distribution and Training

The following table demonstrates names and titles of individuals within SPS that have received access to or training on the EOP. The list provided below is not exhaustive as operational groups provide access to and training on elements of the EOP as applicable to their operations.

Name	Title	Date
Adrian Rodriguez	President, Xcel Energy Texas and New Mexico	3/6/2023
Brooke Trammell	Regional Vice President, Rates and Regulatory Affairs	3/6/2023
Jarred Cooley	SPS Director of Strategic Planning	3/6/2023
Kyle Ingham	SPS Policy Specialist	3/6/2023
Erika Kane	Lead Assistant General Counsel	3/6/2023
Kim Cassingham	Director Enterprise Emergency Management	3/6/2023
Deb Watts	Senior Consultant Emergency Management	3/6/2023
Brad Baldridge	Director Customer Service and Economic Development	3/6/2023
Justin Smiley	Director Customer Relations	3/6/2023
Troy Browen	Senior Director Distribution Control Centers	3/6/2023
Joey Zahn	Manager Operations SPS Control Center	3/6/2023
Thomas Maldonado	Manager, Reliability Assurance	3/6/2023
Roger Hargreaves	Senior Director System Operations	3/6/2023
Kyle McMenamin	Senior Manager Transmission Control Center	3/6/2023
David Low	General Manager – Power Generation Texas/New Mexico	3/6/2023
Mark Mechenbier	Principal Consultant Operational Support	3/6/2023

V. Emergency Contacts

SPS's list of primary and backup emergency contacts, including specific individuals who can immediately address urgent requests and questions from the Commission during an emergency, is being filed separately and simultaneously with the filing of this Executive Summary. Consistent with the Commission's statement on page 71 of its *Order Adopting New 16 TAC § 25.53 As Approved at the February 25, 2022 Open Meeting* in Project No. 51841, SPS is filing its list of primary and backup emergency contacts as confidential information.

Respectfully submitted,

/s/ Erika Kane

XCEL ENERGY SERVICES INC.
Erika M. Kane
State Bar No. 24050850
Mark A. Walker
State Bar No. 20717318
XCEL ENERGY SERVICES INC.
919 Congress Ave., Ste. 900
Austin, Texas 78701-2471
Office: (512) 236-6923
Facsimile: (512) 236-6935
email: Erika.m.kane@xcelenergy.com
email: mark.a.walker@xcelenergy.com

ATTORNEYS FOR
SOUTHWESTERN PUBLIC SERVICE COMPANY

AFFIDAVIT

STATE OF TEXAS §
COUNTY OF POTTER §

Before me, the undersigned authority, on this day personally appeared Adrian J. Rodriguez, who is personally known by me, and first being duly sworn, on oath deposed as follows:

"My name is Adrian J. Rodriguez. I am over 17 years of age, of sound mind, and capable of making this affidavit. I am currently employed as President of Xcel Energy, Texas and New Mexico and serve as President of Southwestern Public Service Company ("SPS"). I am the highest-ranking officer with binding authority over SPS. In compliance with Public Utility Commission of Texas ("Commission") Substantive Rule §25.53, SPS has prepared and implemented its Emergency Operations Plan ("EOP") and filed the EOP with the Commission, in redacted format removing confidential information, on March 15, 2023. In accordance with Commission Substantive Rule §25.53(c)(4(C) I hereby affirm the following regarding the EOP:

(i) relevant operating personnel are familiar with and have received training on the applicable contents and execution of the EOP, and such personnel are instructed to follow the applicable portions of the EOP except to the extent deviations are appropriate as a result of specific circumstances during the course of an emergency;
(ii) the EOP has been reviewed and approved by the appropriate executives;
(iii) drills have been conducted to the extent required by Commission Substantive Rule §25.53 (f) of this section;
(iv) the EOP or an appropriate summary has been distributed to local jurisdictions as needed;
(v) the entity maintains a business continuity plan that addresses returning to normal operations after disruptions caused by an incident; and
(vi) the entity's emergency management personnel who are designated to interact with local, state, and federal emergency management officials during emergency events have received or are in the process of receiving the latest IS-100, IS-200, IS-700, and IS-800 National Incident Management System training."

Signature of Authorized Representative

Adrian J. Rodriguez
Printed Name

Southwestern Public Service Company

Sworn and subscribed before me this 15 day of March 2023 by Adrian J. Rodriguez

Mary C Johnson
Notary Public, State of Texas
My Commission Expires: 8-28-2024

MARY C. JOHNSON
Notary Public, State of Texas
Comm. Expires 08-28-2024
Notary ID 12084834

Xcel Energy®

Southwestern Public Service Company

Emergency Operations Plan (Revision 1 - 2023)

16 TAC § 25.53

March 15, 2023

Project No. 53385

Xcel Energy®

Table of Contents

I. Approval and Implementation 6

1. Scope 6

2. SPS Personnel Responsible for Maintaining and Implementing the EOP 7

3. Revision Control Summary 7

4. Approval of Current EOP 7

II. Communication Plan 8

1. Communicating with the Public and Handling Complaints 8

2. Communicating with the Media 8

3. Communications with the Commission 9

4. Communications with Office of Public Utility Counsel (OPUC) 9

5. Communications with Local and State Governmental Entities, Officials, and Emergency Operations Centers 9

6. Communications with Reliability Coordinator 9

7. Communications with Critical Load Customers 10

III. Plan for Pre-Identified Supplies 11

IV. Staffing During Emergency Response 12

V. Weather Related Hazards and Process for Activating the EOP 13

VI. Transmission and Distribution Annexes 14

1. Operational Plans for Responding to Cold Weather Emergency 14

A. Checklist for Use by Personnel Responding to Cold Weather Emergency 14

B. Staffing and Supplies for Responding to Cold Weather Emergency 14

2. Operational Plans for Responding to Hot Weather Emergency 14

A. Checklist for Use by Personnel Responding to Hot Weather Emergency 14

B. Staffing and Supplies for Responding to Hot Weather Emergency 14

3. Load Shed Annex 15

4. Pandemic and Epidemic Annex 15

5. Wildfire Annex 15

6. Hurricane Annex 15

7. Cyber Security Annex 15

8. **Physical Security Annex** 16

9. **Leases or Operating Facilities under PURA § 39.918(b)(1) or Procures, Owns, Operates Facilities under PURA § 39.918(b)(2)** 16

VII. Generation Resources Annexes 18

1. Operational Plans for Responding to Cold Weather Emergency 18

A. Adequacy and operability of fuel switching equipment 18

B. Checklist for Use by Personnel Responding to Cold Weather Emergency 18

C. Staffing and Supplies for Responding to Cold Weather Emergency 18

2. Operational Plans for Responding to Hot Weather Emergency 18

A. Adequacy and operability of fuel switching equipment. 19

B. Checklist for Use by Personnel Responding to Hot Weather Emergency 19

C. Staffing and Supplies for Responding to Hot Weather Emergency 19

3. Water Shortage Annex 20

4. Restoration of Service Annex 20

5. Pandemic and Epidemic Annex 20

6. Hurricane Annex 20

7. Cyber Security Annex 20

8. Physical Security Annex 21

VIII. Drills 22

List of Attachments	
Attachment A (CONF)	Xcel Energy Jurisdictional Incident Response Plan, Version 1.0, Approval Date September 3, 2021
Attachment B(CONF)	SPS Outage/Event Communications Playbook, Last Updated February 3, 2021
Attachment C(CONF)	Southwestern Public Service Company – Emergency Operating Procedures Overview, Version 10.2, Approval Date February 28, 2022
Attachment D(CONF)	Xcel Energy Productivity Through Technology Inventory Management and Material Flow Optimization – Inventory Stocking / Restocking Procedures, Version 1.3, Effective Date April 3, 2017
Attachment E(CONF)	Xcel Energy Distribution Incident Response Plan, Version 2.0, Effective Date March 17, 2021
Attachment F(CONF)	Xcel Energy Transmission Incident Response Plan, Version 1.0, Effective Date November 1, 2019
Attachment G(CONF)	Xcel Energy Enterprise Command Center - Enterprise Event Management Framework, Version 3.0, Effective Date April 14, 2021
Attachment H(CONF)	Xcel Energy – Energy Supply Operations, Operation Standard Operating Procedures, Policy ESO 6.100, Revision 9.0, Approval Date November 22, 2020
Attachment I	Electricity Subsector Coordinating Council COVID-19 Resource Guide: Assessing and Mitigating the Novel Coronavirus, Version 11, Last Updated July 7, 2021
Attachment J(CONF)	Energy Supply Operations – Seasonal Readiness – Winter Preparation Policy, Version 4.1, Effective Date September 13, 2021
Attachment K(CONF)	Xcel Energy Commercial Operations: Generation Plant Reliability – Fuel Oil Testing, EFS Policy 2.803, Version 3.2, Approval Date June 1, 2020
Attachment L(CONF)	Energy Supply Operations – Seasonal Readiness – Summer Preparation, ESO 6.610, Version 1.0, Approval Date May 22, 2021
Attachment M(CONF)	Energy Supply Policy System – System Operating Code Response Procedure, XES Policy 6.400P01, Version 8.0, Approval Date May 18, 2021

GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym/Defined Term	Meaning
CSIRT	Cyber Security Incident Response Team
ECC	Enterprise Command Center
EEA	Emergency Energy Alert
EMT	Emergency Management Team
EOP	Emergency Operations Plan
ERCOT	Electric Reliability Council of Texas
ESO	Energy Supply Operations
IRP	Incident Response Plan
OPUC	Office of Public Utility Counsel
PURA	Public Utility Regulatory Act
SPS	Southwestern Public Service Company
SPS Regulatory	Southwestern Public Service Company Rates and Regulatory Affairs Department
TAC	Texas Administrative Code
XES	Xcel Energy Services
Xcel Energy	Xcel Energy Inc.

Xcel Energy®

SOUTHWESTERN PUBLIC SERVICE COMPANY'S

EMERGENCY OPERATIONS PLAN

April 15, 2022

I. Approval and Implementation

1. Scope

Southwestern Public Service Company, d/b/a Xcel Energy, is a New Mexico corporation (SPS) and wholly-owned electric utility subsidiary of Xcel Energy Inc. (Xcel Energy) headquartered in Amarillo, Texas. SPS is a vertically integrated generation, transmission, and distribution electric utility that serves approximately 403,400 customers in a 52,000 square-mile area of the Panhandle and the South Plains of Texas, and eastern and southeastern New Mexico. SPS is a member of the Southwest Power Pool Regional Transmission Organization and is synchronously connected to the Eastern Interconnection grid. SPS is also connected to the Western Interconnection grid through three high-voltage direct-current back-to-back converters. Although SPS operates adjacent to the Electric Reliability Council of Texas (ERCOT) grid, it has no direct interconnections with ERCOT transmission owners.

The SPS Emergency Operations Plan (EOP) is a procedure that prescribes methods to respond to unexpected events that are beyond the normal operations of the power system. Causes of these events may be the loss of generation, loss of fuel supplies, severe weather-related transmission interruption, or other events whereby generation or transmission facilities become limited such that the ability to serve the total system demand is in question.

In compliance with Texas Admin Code ("TAC") 16 § 25.53, SPS's EOP is intended to support and advance planning and event response for SPS leadership teams and business area responders of Xcel Energy. This EOP describes the transition from normal operations to operations supporting restoration and recovery from significant incidents, events, and emergencies. This EOP reflects the experience and knowledge gained from dealing with past incidents, emergency situations, and all incident types and is intended to be a reference tool outlining strategies and tactics to be used to meet the event response objectives. SPS is a vertically-integrated utility operating outside of ERCOT, therefore,

SPS's EOP does not address requirements for retail electric providers, electric coops, or municipally owned electric systems.

2. SPS Personnel Responsible for Maintaining and Implementing the EOP

Responsibility for the approval and implementation of the SPS EOP resides with the President of Xcel Energy, Texas and New Mexico who serves as the President of SPS. Responsibility for the plans and procedures within the SPS EOP reside with the operational areas and business units within SPS. Responsibility for the governance and oversight concerning the maintenance, review, and approval of the Incident Response Plans (IRP) included in this EOP reside with the Xcel Energy Enterprise and Security Branch. Each policy, procedure, or IRP includes documentation regarding employees responsible for review and approval of the documents.

3. Revision Control Summary

Revision Number	Approved Date	Description of Changes	Approval
1	3/14/23	Updated Wildfire Annex	Approved by: Adrian J. Rodriguez
0	4/14/2022	Original	Approved by: David T. Hudson

4. Approval of Current EOP

SPS's EOP-Revision 1 was approved by SPS President Adrian Rodriguez on March 14, 2023.

II. Communication Plan

SPS is a vertically integrated generation, transmission, and distribution electric utility. The Communication plan detailed below applies to generation, transmission, and distribution operations.

In the event the EOP is activated, during escalation and activation, constant and effective communication between the SPS leadership team, the Strategic Communications team, and the Emergency Management Team (EMT) is vital.

Details regarding SPS's communications plan, with a focus on staffing and scalability is provided in Attachment A(CONF) to this EOP. Attachment A(CONF) is SPS's Incident Response Plan (IRP), with Section 8.0 specifically addressing communications.

SPS's communication plans when the EOP is activated are further guided, including roles and responsibilities, by Attachment B(CONF) which is SPS's Outage/Event Communications Playbook. This document identifies strategic communications and partners, outage communication goals, key groups and responsibilities, detailed on-call roles and responsibilities, and communications processes.

The need for contact with customers, the media, regulators, and public partners is of utmost importance to SPS. The Strategic Communications department partners with the appropriate Xcel Energy business areas during an event to ensure information is disseminated and that messaging is accurate and appropriate.

1. Communicating with the Public and Handling Complaints

Attachment A(CONF) and Attachment B(CONF) to this EOP detail the SPS communication plans when the EOP is activated, including communications with the public and the handling of complaints. In particular, the SPS Communications Leadership is responsible for local coordination between SPS personnel, SPS Key Account Managers, and Community Relations leadership.

Furthermore, SPS publishes 800 numbers for customers to call the Xcel Energy call center. Customer care representatives, Account Managers, and Key Account Managers will communicate with customers by telephone. Staffing levels and personnel activation will be determined by the Response Level specified in Attachment A(CONF).

2. Communicating with the Media

Attachment A(CONF) and Attachment B(CONF) to this EOP detail the SPS communication plans when the EOP is activated, including responsibility for communicating with the media. In particular, the SPS Media Relations and Social Media personnel are responsible for attending

operations and stakeholder communication calls, communicating with the local media regarding nature of event and response, and organizing media events for large scale distribution of information when necessary.

3. Communications with the Commission

Attachment A(CONF) and Attachment B(CONF) to this EOP detail the SPS communication plans when the EOP is activated, including communications with the Public Utility Commission of Texas (Commission). It is the primary responsibility of the SPS Rates and Regulatory Affairs department ("SPS Regulatory") to coordinate between the SPS Communications Leadership, Operations, and Key Accounts and provide this information to the Commission.

For transmission and distribution operations, additional protocols are in place for communication to SPS Regulatory and with the Commission. Those documents are provided as Attachment C(CONF) to this EOP.

4. Communications with Office of Public Utility Counsel (OPUC)

Please refer to Section II, Subpart 3 – Communications with the Commission, as SPS Regulatory follows the same guidelines in reporting activations of the EOP to the Office of Public Utility Counsel.

5. Communications with Local and State Governmental Entities, Officials, and Emergency Operations Centers

Attachment A(CONF) and Attachment B(CONF) to this EOP detail the SPS communication plans when the EOP is activated, including communicating with local and state governments and Emergency Operations Centers.

It is the responsibility of the SPS Communications Leadership team to manage communications between SPS personnel, local governments, and Emergency Operations Centers.

6. Communications with Reliability Coordinator

The SPS Transmission Control Center is in constant contact with the Southwest Power Pool Reliability Coordinator. In preparation for emergency operations, the Reliability Coordinator

Review performed by the Southwest Power Pool is the responsibility of the Manager of the SPS Transmission Control Center.

SPS is required to submit emergency planning documents to the Southwest Power Pool Reliability Coordinator. These documents are detailed in Attachment C(CONF), which is the SPS *Emergency Operating Procedures Overview*.

Communications with the Southwest Power Pool Reliability Coordinator when the SPS EOP is activated are coordinated by the SPS Transmission Control Center and follow the guidelines provided.

7. Communications with Critical Load Customers

Attachment A(CONF) and Attachment B(CONF) to this EOP detail the SPS communication plans when the EOP is activated, including communications with critical load customers. In the event of an activation of the SPS EOP which would affect a critical load customer, the SPS Key Account Managers and Community Relations departments would communicate directly with impacted critical load customers.

In instances when an Emergency Energy Alert (EEA) has been issued by the Southwest Power Pool and load shed is needed, the SPS Transmission Control Center receives the notification and disseminates that information to Key Accounts, Community Relations, Media Relations, and SPS Regulatory.

Xcel Energy®

III. Plan for Pre-Identified Supplies

SPS's plan for maintaining pre-identified supplies for emergency response is detailed in Attachment D(CONF). Attachment D(CONF) is Xcel Energy's Supply Chain *Inventory Management and Material Flow Optimization,* Revision 1.3.

Attachment D(CONF), pages 2-3 discuss Xcel Energy's critical spare parts philosophy.

In addition, Xcel Energy has created unique designations for materials in coordination with its supply Chain partners. The designations are as follows:

MPI1 – Mission Critical; Stock always available barring a significant unplanned spike in consumption.

MPI2 – Regularly Used Item; Stock always available barring a significant unplanned spike in consumption.

MPI3 – Occasionally Used Item; Use of item is not consistent enough to justify stocking as pre-identified supply.

MPI4 – Assigned material number but not stocked due to little consumption.

IV. Staffing During Emergency Response

SPS's plan for staffing scalability can be found in the Distribution Incident Response Plan (IRP) provided as Attachment E(CONF) and the Transmission IRP provided as Attachment F(CONF). Xcel Energy will expand to support SPS using the Emergency Management Framework provided as Attachment G(CONF). This process supports the event expansion and common operating picture of event response. The process engages all the disciplines up the chain of command to support escalated operations.

For distribution staff plans for emergency response, specifically refer to Section 4.3, page 7 of Attachment E(CONF). For Transmission staffing plans for emergency response, specifically refer to Section 4.3, page 7 of Attachment F(CONF).

Within the SPS Energy Supply Operations (ESO) each generating site is required to have and maintain Standard Operating Procedures for normal and abnormal operations which include checklist, staffing, and communications protocols. Please refer to Attachment H(CONF) for the *Energy Supply Operations, Operation Standard Operating Procedures* policy.

V. Weather Related Hazards and Process for Activating the EOP

Maintaining weather awareness is the responsibility of all operational disciplines within SPS. Daily weather reports are circulated to the operational areas from the Xcel Energy meteorological department to allow for advanced planning. Weather related potential hazards are also distributed in the daily company-wide Enterprise Command Center update. Red Flag warnings, which indicate the need for wildfire and situational awareness, are also part of the daily weather communication.

Documents governing pre-planning for anticipated weather-related events can be found in the individual operational areas IRPs. For distribution, please refer to Section 4.1, pages 6-7 of Attachment E(CONF). For Transmission, please refer to Section 4.1, pages 5-7 of Attachment F(CONF). For Energy Supply, please refer to Attachment H(CONF).

VI. Transmission and Distribution Annexes

1. Operational Plans for Responding to Cold Weather Emergency

A. Checklist for Use by Personnel Responding to Cold Weather Emergency

A Continuous improvement cycle is imbedded in the Transmission and Distribution IRPs. Sections 12 and 13 of the Transmission IRP (Page 22), provided as Attachment F(CONF) and the Distribution IRP (Page 22), provided as Attachment E (CONF), govern the maintenance of the IRP and the continuous improvement cycle (or Hot Wash process) used. These sections require the Hot Wash process to follow any drill or actual event and require a lessons learned process. The lessons learned must be incorporated in the annual review of the IRP.

Furthermore, the SPS transmission and distribution operations hold annual season readiness meetings in which all processes and procedures are reviewed, lessons learned are incorporated, and plans are updated for the upcoming operating conditions.

B. Staffing and Supplies for Responding to Cold Weather Emergency

Please refer to Sections III and IV of this EOP for policies regarding staffing and supplies for responding to emergency events.

2. Operational Plans for Responding to Hot Weather Emergency

A. Checklist for Use by Personnel Responding to Hot Weather Emergency

A Continuous improvement cycle is imbedded in the Transmission and Distribution IRPs. Sections 12 and 13 of the Transmission IRP (Page 22), provided as Attachment F(CONF) and the Distribution IRP (Page 22), provided as Attachment E (CONF), govern the maintenance of the IRP and the continuous improvement cycle (or Hot Wash process) used. These sections require the Hot Wash process to follow any drill or actual event and require a lessons learned process. The lessons learned must be incorporated in the annual review of the IRP.

B. Staffing and Supplies for Responding to Hot Weather Emergency

Please refer to Sections III and IV of this EOP for policies regarding staffing and supplies for responding to emergency events.

3. Load Shed Annex

Please refer to Attachment C(CONF), section 3.4, starting on page 2 for the SPS load shed plan.

4. Pandemic and Epidemic Annex

Xcel Energy/SPS implemented many steps during the COVID-19 pandemic to improve the company's response. Xcel Energy participated in the development of the Electric Subsector Coordinating Counsel (ESCC) COVID-19 Resource Guide which is provided as Attachment I. Best Practices from this guide were implemented throughout Xcel Energy and provided coordination with utility partners.

During the COVID-19 pandemic Xcel Energy/SPS has implemented best practices for continuity of operations, prioritizing employees based on grid reliability, and for navigating the national supply chain restrictions.

As the pandemic impacts and lessons learned linger into 2023, Xcel Energy continues to utilize industry best practices found in the Electric Subsector Coordinating Counsel COVID-19 Resource Guide as our foundational plan.

5. Wildfire Annex

Wildfire monitoring occurs through the Control Centers. When necessary, Xcel Energy escalates operations based on the operational area IRP or generating plant EOP.

For Generation, Distribution, and Transmission Operations related to Wildfires, please refer to Attachment E(CONF), which includes an updated wildfire response plan specific to SPS effective January 2023 starting on page 136.

All SPS ESO facilities are required to staff and train Emergency Response Teams. The members of these teams are trained to safely and effectively respond to five areas of discipline, including but not limited to: Medical, Fire Fighting, Rope Rescue, Hazardous Waste, and Confined Space. The Emergency Response Team firefighting is limited to Xcel Energy property and rights-of-way.

6. Hurricane Annex

Please refer to Section V, Subpart 2.

7. Cyber Security Annex

Xcel Energy's enterprise-wide preparedness, monitoring, and response to cyber security threats is guided by Cyber Security Incident Response Team (CSIRT) plan. Due to the highly sensitive nature of the CSIRT plan it is not available for distribution or inclusion in SPS's EOP. If requested by Commission Staff or other authorized parties, Xcel Energy's Cyber Security team can bring a copy of the plan to Austin, Texas for review.

Xcel Energy's CSIRT plan supports cyber threat posture across the enterprise. Xcel Energy has a team dedicated to 24/7 Cyber threat awareness and response team in the ECC.

Xcel Energy's CSIRT plan is utilized to mitigate the risk of cyber-attacks against Xcel Energy, which could impact Information Technology, and or Operational Technology computing environments. The CSIRT plan documents Xcel Energy's incident response plan for all "Severity 1" cybersecurity related incidents including activities involving Bulk Electric System assets and some "Severity 2" cybersecurity related incidents. The plan encompasses cybersecurity monitoring/detection, containment, mitigation, and remediation. Also included in Xcel Energy's CSIRT are definitions of severity level classifications, communication plans, coordination plans, and roles and responsibilities in cybersecurity incident response. The Xcel Energy CSIRT includes general testing procedures and a review process for the plan.

8. **Physical Security Annex**

Xcel Energy's enterprise-wide preparedness, monitoring, and response to physical security threats is guided by the Protection Services IRP. Due to the highly sensitive nature of the Protection Services IRP, it is not available for distribution or inclusion in SPS's EOP. If requested by Commission Staff or other authorized parties, Xcel Energy's Physical Security team can bring a copy of the plan to Austin, Texas for review.

Physical security situational monitoring and escalation is supported by the Xcel Energy ECC, which operates 24/7 and works to notify and escalate incidents to the Xcel Energy physical security team.

Protection Services in conjunction with Systems Security is responsible for developing and maintaining physical security standards for Xcel Energy facilities to protect Xcel Energy personnel, assets, and meet regulatory requirements. Examples of measures include but are not limited to: perimeter fencing, card access, video surveillance, key control, and alarm monitoring.

The Protection Services IRP is a reflection of the experience and knowledge gained managing past incidents, emergency situations, and outages. The IRP is intended to be a reference tool for resource management, outlining strategies and tactics to be used by management and supervision to meet event response objectives.

9. **Leases or Operating Facilities under PURA § 39.918(b)(1) or Procures, Owns, Operates Facilities under PURA § 39.918(b)(2)**

SPS does not lease or operate facilities under PURA § 39.918(b)(1) nor does it procure, own, or operate facilities under PURA § 39.918(b)(2).

VII. Generation Resources Annexes

1. Operational Plans for Responding to Cold Weather Emergency

SPS follows the Xcel Energy policies for summer and winter preparedness for the Energy Supply Operations (ESO) organization. Please refer to Attachment J(CONF) for the *ESO 6.605 Seasonal Readiness – Winter Preparation Policy*. The seasonal readiness policies implemented by Xcel Energy for ESO include preparation checklists for fleetwide and plant specific items as well as a lessons learned protocol for updating those checklist.

A. Adequacy and operability of fuel switching equipment

SPS follows the Xcel Energy policy regarding fuel oil testing. Please refer to Attachment K(CONF) for the *EFS-2.803 Fuel Oil Testing Policy* document. This policy document includes requirements for testing, cold weather testing, and outages for maintenance.

B. Checklist for Use by Personnel Responding to Cold Weather Emergency

Please refer to sections 4.10 and 4.11 (Page 4) of Attachment J(CONF) which include employee action checklists for preparation and response to severe winter weather events.

C. Staffing and Supplies for Responding to Cold Weather Emergency

Please refer to sections 4.1.9, 4.1.13, and 4.1.16 (Page 3) of Attachment J(CONF) which include plans for supplies and personnel for responding to a severe winter weather event.

2. Operational Plans for Responding to Hot Weather Emergency

SPS follows the Xcel Energy policies for summer and winter preparedness. Please refer to Attachment L(CONF) for the *ESO 6.610 Seasonal Readiness – Summer Preparation Policy*. The seasonal readiness policies implemented by Xcel Energy for ESO include preparation checklists for fleetwide and plant specific items as well as a lessons learned protocol for updating those checklist.

SPS follows Xcel Energy procedure *System Operating Code Response Procedure (XES 6.400P01)*, provided in this EOP as Attachment M(CONF). This procedure communicates the protocols for Commercial Operations, Gas Operations, or Transmission Operations to convey the current or forecasted operating condition for each Xcel Energy Operating Company system. This protocol directs a predetermined response for plant operations

personnel. During strained market conditions, capacity shortages or other transmission conditions, it is essential that Commercial Operations, Transmission Operations, and the Plant Control Room Operators (Plants) can communicate with a minimum expenditure of time and effectively relay what actions are to be taken given certain conditions.

A. Adequacy and operability of fuel switching equipment.

SPS follows the Xcel Energy policy regarding fuel oil testing. Please refer to Attachment K(CONF) for the *EFS-2.803 Fuel Oil Testing Policy* document. This policy document includes requirements for testing, cold weather testing, and outages for maintenance.

B. Checklist for Use by Personnel Responding to Hot Weather Emergency

SPS follows the Xcel Energy policies for summer and winter preparedness. Please refer to Attachment L(CONF) for the ESO 6.610 Seasonal Readiness – Summer Preparation Policy, Appendix A, page 6. The seasonal readiness policies implemented by Xcel Energy for ESO include preparation checklists for fleetwide and plant specific items as well as a lessons learned protocol for updating those checklist.

SPS follows Xcel System Operating Code Response Procedure (XES 6.400P01), Attachment M(CONF). This procedure communicates the protocols for Commercial Operations, Gas Operations, or Transmission Operations to convey the current or forecasted operating condition for each Xcel Energy Operating Company system. This protocol directs a predetermined response for plant operations personnel. During strained market conditions, capacity shortages or other transmission conditions, it is essential that Commercial Operations, Transmission Operations, and the Plant Control Room Operators (Plants) can communicate with a minimum expenditure of time and effectively relay what actions are to be taken given certain conditions.

C. Staffing and Supplies for Responding to Hot Weather Emergency

During a hot weather emergency, the plant maintains the same staffing requirements as during a normal shift. If the situation warrants additional personnel, the plant management can hang over personnel or call-out individuals to address issues.

The plants maintain an inventory on site to address many issues. During hot weather emergency, the supplies would focus on PPE (Personal Protective Equipment) such as hydrating liquids such as bottled water and electrolyte powders, ice vests, sunscreen, and neck cooling bands.

3. Water Shortage Annex

Condensate (Boiler Water)

Conservation measures are put in place when conserving condensate such as reducing unit generation load and limiting potable water use at the plant. Water could be trucked (Malark Logistics) in from another source thus requiring the plant to run at reduced loads.

Cooling Tower Make-Up

Conservation measure would include reducing cooling tower blowdown and to monitor water chemistry (ex. chlorides) to prevent equipment issues but compliant within the plant's environmental permits.

4. Restoration of Service Annex

Generation facilities will evaluate the status of the unit from a safety aspect regarding personnel and equipment. Once it has been determined to be safe, plant personnel along with support groups within Xcel Energy will evaluate the equipment for operation. Plants will coordinate start-up efforts with Commercial Operations in bringing the units back online.

5. Pandemic and Epidemic Annex

The Pandemic and Epidemic response is a corporate responsibility. Please refer to the pandemic and epidemic annex for transmission and distribution operations, Section VI, Subpart 4.

6. Hurricane Annex

Please refer to Section V, Subpart 2.

7. Cyber Security Annex

Matters regarding cyber security are a corporate responsibility at Xcel Energy. Please refer to the Cyber Security Annex as provided for transmission and distribution operations, Section VI, Subpart 7.

8. Physical Security Annex

Matters regarding physical security are a corporate responsibility at Xcel Energy. Please refer to the Physical Security Annex as provided for transmission and distribution operations, Section VI, Subpart 8.

VIII. Drills

The SPS IRPs, provided as attachments to this document, establish policies and procedures for conducting drills to test the preparedness of operations. The IRPs further provide for a hot wash process (lessons learned) to be conducting following a drill or event which activates SPS's emergency response.

The drills conducted for transmission and distribution are owned by the operational areas. The policies and procedures which guide the process to conduct drills are set forth in Attachment E(CONF), Section 13.3, page 22 for distribution and Attachment F(CONF), Section 13.1, page 22 for Transmission.

The drills conducted annually by ESO are owned by the individual plants and are conducted to ensure safe operations and employee well-being. The policies and procedures which guide the process to conduct drills are contained in the SOPs for each plant. The SOPs for the plants are governed by Attachment H(CONF).

With the approval and implementation of SPS's EOP; annually drills will be mandated for all aspects of the EOP when an actual emergency event does not activate the EOP. Furthermore, SPS will notify Commission Staff at least 30 days prior to the drill and include documentation of the hot wash process conducted at the conclusion of the drill.

JURISDICTIONS INCIDENT RESPONSE PLAN

Xcel Energy®	Enterprise Preparedness/OpCo Jurisdictions	<Approval Date>
ER-JURS-IRP-01	Jurisdictional Leadership Incident Response Plan (IRP)	Version: 1.0
Owner:	OpCo Jurisdictional Leaders	Page 2 of 38

Effective Date	Version/ Revision	Author	Revision Summary
9/3/21	1.0	Lisa Kuehl	Initial issuance based on ER-EP-PR-02, "Enterprise Incident Response Plan Program." This initial issuance establishes a standard template for all business area incident response plans and includes required content for business area incident response plans. This template and incorporates the NIMS principles including the NIMS Incident Command System (ICS).

Current Version Approvals		
Enterprise Preparedness Manager	Jody Nemcek	<Insert Date>
President PSCo	Alice Jackson	<Insert Date>
President NSPM	Chris Clark	<Insert Date>
President SPS	David Hudson	<Insert Date>
President NSPW	Mark Stoering	<Insert Date>

Xcel Energy®	Enterprise Preparedness/OpCo Jurisdictions	<Approval Date>
ER-JURS-IRP-01	Jurisdictional Leadership Incident Response Plan (IRP)	Version: 1.0
Owner:	OpCo Jurisdictional Leaders	Page 3 of 38

TABLE OF CONTENTS

1.0 Purpose 4
2.0 Scope 4
3.0 Readiness 4
4.0 Activation of the Incident Response Plan (IRP) 5
5.0 Event Severity 6
6.0 Organizational Structure 6
7.0 Organizational Roles 9
8.0 Communications 11
9.0 Logistics Support or Mutual Aid 12
10.0 Event Recovery 13
11.0 Incident Response Plan Training, Exercises and Maintenance 14
12.0 Regulatory Compliance Related Items 14
13.0 References 14
14.0 Revision Summary 14

LIST OF ATTACHMENTS

Checklist 1 - Pre-Event Actions 15
Checklist 2 – Activation Actions 17
Checklist 3 – Transfer of Command Actions 19
Checklist 4 – Resource Actions 20
Checklist 5 – Deactivation Actions 22
Attachment 1 - Planning Call Agenda Example 23
Attachment 2 – Activated/Escalated Operations Call Agenda Example 25
Attachment 3 – Threat Ownership by Area 29
Attachment 4 – External Relationship Responsibilities 31
Attachment 5 – Issues/Actions to Return to Normal Operation 32
Attachment 6 – On Call Incident Response Contracts 33
Attachment 7 - Annual IRP Review Checklist 34
Attachment 8 - Operations Escalation Trigger Matrix 35

Attachment A(CONF)

Page 4 through 38
Xcel Energy Jurisdictional Incident Response Plan,
Version 1.0, Approval Date September 3, 2021

REDACTED CONFIDENTIAL MATERIAL

Strategic Communications and partners

Outage/Event Communications Playbook

Updated Feb 3, 2021

TABLE OF CONTENTS:

Page 2: Outage communications goals

Page 2: Key groups and responsibilities

Page 3: Detailed on-call roles and responsibilities

Page 5: Communication process

Attachment B(CONF)

Page 2 through 7
SPS Outage/Event Communications Playbook,
Last Updated February 3, 2021

REDACTED CONFIDENTIAL MATERIAL

Attachment C(CONF)

Page 1 through 9
Southwestern Public Service Company -
Emergency Operating Procedures Overview,
Version 10.2, Approval Date February 28, 2022

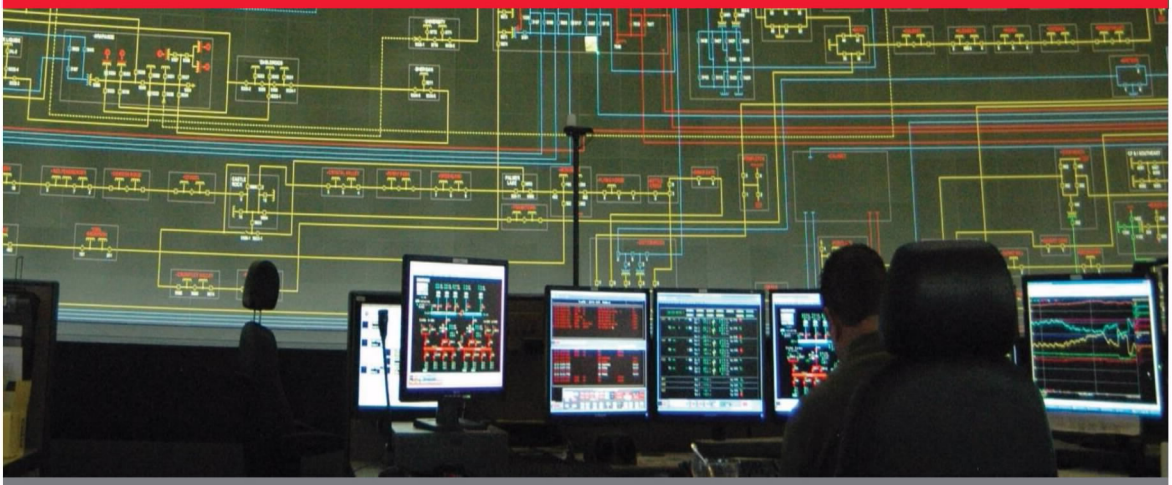
REDACTED CONFIDENTIAL MATERIAL

Attachment D(CONF)

Page 1 through 9
Xcel Energy Productivity Through Technology
Inventory Management and Material Flow
Optimization - Inventory Stocking / Restocking
Procedures, Version 1.3, Effective Date April 3, 2017

REDACTED CONFIDENTIAL MATERIAL

DISTRIBUTION INCIDENT RESPONSE PLAN



Planning. Execution. Communication.

Return to Normal Operations

Note: This document is Company CONFIDENTIAL

Effective Date	Version/ Revision	Author	Revision Summary
08/22/19	1.0	J Nemcek/Troy Browen	This issuance includes standardization to Enterprise Resilience Incident Response Plans and incorporates the NIMS Incident Command System.
03/17/21	2.0	J Nemcek/Troy Browen	Annual maintenance revision that incorporates corrections, one GridEx after action item, and a new wildfire annex.

Current Version Approvals		
Enterprise Preparedness Manager:	Jody Nemcek	
Distribution Control Center Director:	Troy Browen	

Table of Contents

1. Purpose 5
2. Scope 5
3. Activation of the Incident Response plan 5
4. Readiness 5
4.1 Readiness Monitoring 5
4.2 Readiness Communication 6
4.3 Readiness Staffing 6
4.4 Communication for Escalated Response 6
4.5 Pre-Planning for Major Public Events 6
5. Event Severity and Activation 7
5.1 Classification of Event 8
5.2 Scalable Response 8
5.3 Logistics Response 9
5.4 Vegetation Management 9
5.5 Activation Communication 9
5.6 Manual Outage Restoration Process 9
6. Response Facilities 10
6.1 DCC Facilities 10
6.2 Back up facilities 10
6.3 Evacuation Plans 10
7. Incident Command Organizational Structure 10
8. Organizational Roles 13
9. Communication 18
9.1 DCC Internal Communication 18
9.2 Leadership and Organizational Communication 18
9.3 Strategic Public Communication 18
10. Communication Tools 19
11. Logistics Support 20
11.1 Logistics Role 20

11.2 Mutual Aid 20
12 Recovery.....20
12.1 Return to Normal Operation.....20
12.2 Closure of the event.....20
12.3 Hot Wash and Gap Identification 21
12.4 After Action Report 21
13. Incident Response Plan Training and Maintenance.....21
14. Regulatory Compliance Related Items 22
14.1 Requirements 22
14.2 Documentation related to regulatory requirements 22

Table of Checklists

Checklist 4.1 Incident Monitoring and Preparation
Checklist 4.2 - Pre Event Communications
Checklist 4.3 - Pre Event Logistics
Checklist 4.4 - ERT Projection Tool Guidance
Checklist 4.5 - Operations Planning Calls
Checklist 4.5.1 – NSP Restoration Logistics
Checklist 4.5.2 – PSCo Restoration Logistics
Checklist 4.5.3 – SPS Restoration Logistics
Checklist 5.1 - Response Activation
Checklist 5.2 - Scalable Response and Adding Teams
Checklist 5.3 - Decentralized Dispatch
Checklist 5.4 - Logistics Activation
Checklist 5.5 - Damage Assessment and Vegetation Removal
Checklist 5.6 - Activation and Post Impact Communication
Checklist 5.7 - Distribution Ops Meeting Template
Checklist 5.8 - Distribution EMT Call Guidance
Checklist 12.1 - Return To Normal Operation
Checklist 12.2 - Hot Wash Template
Checklist 13.1 - Incident Response Plan Maintenance

Instructional Attachments

Attachment A - Alternate Facilities and Evacuation Plans
Attachment A1 - Chestnut Control Center Evacuation Plan
Attachment A2 - Rice Street Control Center Evacuation Plan
Attachment A3 - Sky Park Control Center Evacuation Plan
Attachment A4 - LDC Control Center Evacuation Plan
Attachment A5 - Lubbock Control Center Evacuation Plan
Attachment B - Bird Dog Process

Attachment C - Wire Down Process
Attachment D - Facilities Communication Links
Attachment E - DCC Escalation Matrix
Attachment F – Work Order Planning and Accounting Practice
Attachment G – Safety Guide
Attachment H - Communication tools & Helpful hints
Attachment I - Transmission Down Before Substation
Attachment J - Acronym List
Attachment K1 - Inbound Mutual Aid Process and Checklist
Attachment K2 - Outbound Mutual Aid Process and Checklist
Attachment K3 – EEI Mutual Aid Response Process
Attachment L – Manual Outage Restoration Process
Attachment M - Guidance and Templates for Escalated or Elevated Operations
Attachment N - Serious Incident Internal Notification Process Summary & Checklist

Specific Hazard Annexes

Annex A – Wildfire Mitigation
Annex B – Cyber Event

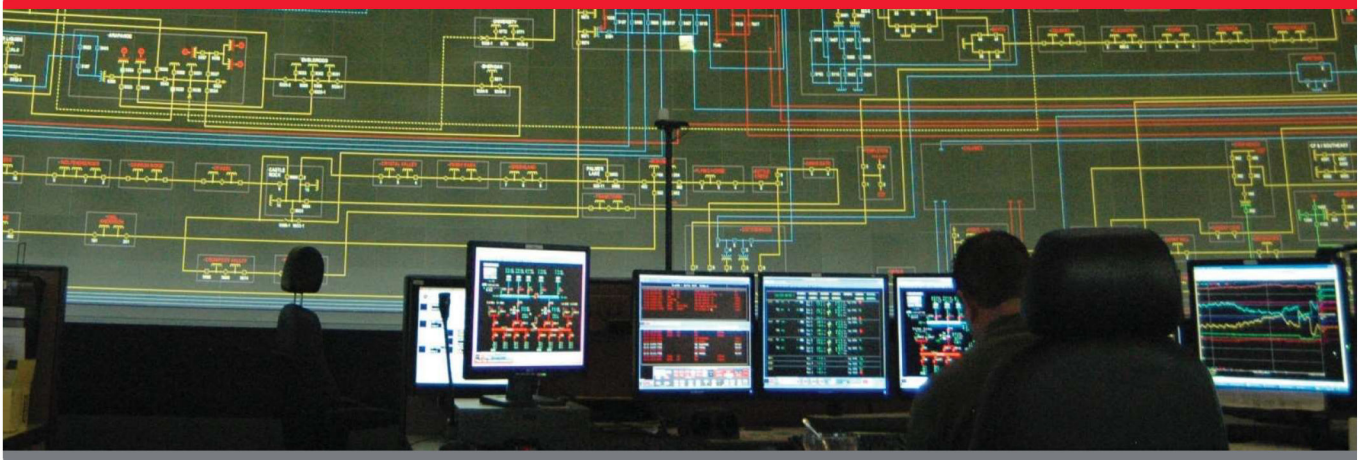
Attachment E(CONF)

Page 6 through 173
Xcel Energy Distribution Incident Response Plan,
Version 2.0, Effective Date March 17, 2021

REDACTED CONFIDENTIAL MATERIAL

Xcel Energy®

TRANSMISSION INCIDENT RESPONSE PLAN



Planning. Execution. Communication.

Note: This document is CONFIDENTIAL

APPROVERS

Name	Title
Roger Hargreaves	Senior Director, System Operations
Dave Berklund	Senior Director, Transmission Field Operations
Jody Nemcek	Manager, Enterprise Preparedness

VERSION HISTORY

Date	Version Number	Editor	Change
11/01/2019	1.0	R Hargreaves	Initial Version. Standardization to Enterprise Resilience Incident Response Plans. Incorporates the NIMS Incident Command System.

Table of Contents

1. Purpose 5
2. Scope 5
3. Activation of the Incident Response plan 5
4. Readiness 5
4.1 Incident Monitoring and Preparation 5
4.2 Pre Event Communications 7
4.3 Readiness Staffing 7
4.4 Operations Planning Calls 7
4.5 Pre-Planning for Major Public Events 7
5. Event Identification and Response Activation 8
5.1 Event Identification 8
5.2 Extreme Weather Impact Assessment 8
5.3 Classification of Event 9
5.4 Event Communication 9
5.5 Response Activation 10
5.6 Situation Rooms 10
5.7 Activation of Enterprise Management Team 11
5.8 Notification Distribution Lists and Everbridge Template “Contacts” 11
5.9 Transmission Event Categories and Communications Requirements 12
5.10 Ongoing Communication 14
5.11 Logistics Response for Equipment Damage 14
6. Response Facilities 14
6.1 TCC Facilities 14
6.2 Back up Facilities 14
6.3 Evacuation Plans 15
7. Incident Command Organizational Structure 15
8. Incident Response Organizational Roles 16

9. Communication 17
9.1 Transmission Internal Communication 17
9.2 Leadership and Organizational Communication 17
9.3 Strategic Public Communication 17
10. Communication Tools 17
11. Transmission Emergency Procedures and Plans 18
11.1 Summary of NSP Transmission Control Center "Emergency" Procedures/Plans 18
11.2 Summary of PSCo Transmission Control Center "Emergency" Procedures/Plans 19
11.3 Summary of SPS Transmission Control Center "Emergency" Procedures/Plans 20
11.4 Summary of Xcel Energy Transmission Control Center "Emergency" Procedures/Plans 21
11.5 Summary of Transmission Construction and Line Operations (TCLO) and Substation O&M (Subs O&M) Emergency Procedures/Plans 21
12. Recovery 22
12.1 Return to Normal Operation 22
12.2 Hot Wash and Gap Identification 22
13. Incident Response Plan Training and Maintenance 22
Table of Checklists 23

Table of Checklists

Checklist 4.1 - Incident Monitoring and Preparation
Checklist 4.4 - Operations Planning Calls
Checklist 5.2 – Extreme Weather Impact Assessment
Checklist 5.4 – Event Communication
Checklist 5.6 – Situation Rooms
Checklist 5.7 – Activation of the EMT
Checklist 12.1 - Return To Normal Operation
Checklist 12.2 - Hot Wash Template
Checklist 13.1 - Incident Response Plan Maintenance

Attachments

Attachment E - Transmission Escalation Matrix
Attachment F – Wildfire Mitigation (To be developed)
Attachment I - Transmission Down Before Substation (Distribution Procedure)
Attachment N - Serious Incident Internal Notification Process Summary & Checklist

Attachment F(CONF)

Page 5 through 48
Xcel Energy Transmission Incident Response Plan,
Version 1.0, Effective Date November 1, 2019

REDACTED CONFIDENTIAL MATERIAL

Xcel Energy®	Enterprise Command Center	04/14/2021
ESEM-ECC-BP-02	EEMF (Enterprise Event Management Framework)	Version: 3.0
Owner:	Jeff Imsdahl Deputy, Chief Security Officer	Page 1 of 27

Note: This document is CONFIDENTIAL

Effective Date	Version/ Revision	Author	Revision Summary
07/31/19	1.0	Tanea Thompson	Document and revisions approved
07/29/20	2.0	Tanea Thompson	Annual updates and revisions
04/14/21	3.0	Tanea Thompson	Annual updates and revisions

Current Version Approvals		
Deputy, Chief Security Officer:	Jeff Imsdahl – Approved via email	04/18/2021

TABLE OF CONTENTS

1.0 SIGNATURES & APPROVAL 4

Image 1-1 ECC Manager Signature 4

2.0 RECORD OF CHANGES & GOVERNANCE POLICY 5

Table 2-1 Record of Changes 5

3.0 CERTIFICATION OF REVIEW & REVIEW PROCESS 5

4.0 TERMS AND ACRONYMS 6

Table 4-1 Terms and Acronyms 6

5.0 PURPOSE 7

6.0 SCOPE 7

7.0 ROLES AND RESPONSIBILITIES 7

7.1 Enterprise Management Team (EMT) 7

7.2 Enterprise Command Center On-Call (ECC On-Call) 7

7.3 Incident/Event Leader 8

7.4 Enterprise Command Center 8

7.5 Enterprise Management Support Teams 8

7.6 The On-Call Executive 9

7.7 Business Area Executive 9

7.8 Executive Staff 9

7.9 Xcel Energy Board of Directors 9

7.10 Xcel Energy External Engagement Process 9

8.0 CONCEPT OF OPERATIONS 10

8.1 Enterprise Event Management Framework Diagram 11

8.2 Event Escalation 11

8.3 Enterprise Event Declaration 11

8.4 Enterprise Management Team Activation 12

8.5 Activation Communication 12

8.6 EMT Conference Call 12

8.7 Xcel Energy External Engagement Process 13

8.8 Post Activation Processes 13

9.0 TRAINING 13

9.1 Enterprise Event Management Framework Overview Training 13

9.2 Event Leader Training 13

9.3 ECC On-Call Training 13

9.4 Enterprise Management Team (EMT) Training 14
9.5 Executive Staff Training 14
9.6 Enterprise Event Drills 14
10.0 ESCALATION CRITERIA 15
Table 10-2 Incident Severity Levels 15
Image 10-3 ECC Tier 2 Escalation Flowchart 19
10.4 Post-Incident After Action 16
Image 8-2 Flowchart for Incidents/Events with Prior Notice 16
11.0 ORGANIZATION 17
Image 11-1 Enterprise Security & Emergency Mangement (ESEM) Organization Chart 17
Image 11-2 EMT Representatives 18
EMT Representatives 18
12.0 DECISION MAKING 19
12.1 Activating/Deactivating the EMT 19
12.2 Determining Severity Levels 19
12.3 Incident/Event-Related Decisions 19
12.4 Providing ECC Support 19
12.5 Sharing Incident and Event Information 19
13.0 COORDINATION 20
Image 13-1 External Agency Coordination 20
14.0 INFORMATION MANAGEMENT 21
Table 14-1 Information Management Summary 21
15.0 COMMUNICATIONS 17
16.0 CONTINUOUS IMPROVEMENT 18

Attachment G(CONF)

Page 4 through 28
Xcel Energy Enterprise Command Center -
Enterprise Event Management Framework,
Version 3.0, Effective Date April 14, 2021

REDACTED CONFIDENTIAL MATERIAL

Attachment H(CONF)

Page 1 through 9
Xcel Energy - Energy Supply Operations, Operation Standard Operating Procedures, Policy ESO 6.100, Revision 9.0, Approval Date November 22, 2020

REDACTED CONFIDENTIAL MATERIAL

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.

Disclaimer

This document does not constitute legal advice. All examples and anecdotes are offered for illustrative purposes only. Recognizing circumstances differ across the industry, the intent of the document is to serve as a general resource of information and not an industry standard or establishing industry wide best practices. ESCC members are independent entities and affected by different member, financial, legal, political, policy, operational, and other considerations. Users of this document should consult with their own legal and operational experts when making any and all decisions about responses to COVID-19 and its corollary effects.

Table of Contents

Introduction from the ESCC Leadership....1
ESCC COVID-19 Tiger Team Members....2
Stages of COVID-19 Mitigation and Response....10
General Planning Considerations....12
Additional Resources....15
Example of a COVID-19 Risk Evaluation Index....15

COVID-19 Access Considerations....17
Access to Contaminated Homes/Buildings....17
Access/Operations in Restricted Areas....19
Access to Military and Federal Government Facilities....22
Additional Resources....23
Example of COVID-19 Workflow & Biohazard Assessment....23

Control Center Continuity....25
Regulatory Relief and Governmental Support Needs....25
Identifying Critical Control Center Personnel....26
Control Rooms....27
Staffing Flexibility....28
Managing the Workload....28
Scenario Development....29
Possible Mitigation Strategies for Scenarios....29
Social Distancing for Control Center Personnel....34
Sequestration Guidelines and Considerations....36
Mutual Assistance for Control Center Operators....41
Additional Resources....44
FERC and NERC Provide Industry Guidance to Ensure Grid Reliability Amid Potential Coronavirus Impacts....44
FERC Acts to Prioritize Reliability, Provide Regulatory Relief....44

Mutual Assistance Considerations (Updated)....45
Pandemic Mutual Assistance Checklist (Updated)....45
CDC Recommendations (Updated)....49
COVID-19 Mutual Assistance Questionnaire....51
Lessons Learned: 2020 Response Efforts....53
Planning Considerations for COVID-19 Contact Tracing During Mutual Assistance....55

Generation Operational Continuity....57
Governmental Support Needs....57

Identifying Essential and Critical Generation Personnel....58
Scenario Development....60
Possible Mitigation Strategies for Scenarios....60
Case Studies and Lessons Learned from COVID-19....63
Sequestration for Generation Considerations....64
Mutual Assistance for Generation Considerations....68
COVID-19 Interim Cleaning and Disinfection Protocol for Generation Control Rooms....70
Additional Resources....73
Nuclear Generation: NRC Issues Instructions for Obtaining Relief from Work Hours Rules....73

Supply Chain Considerations....75
Supply Chain Considerations for Industry-Critical PPE....75
Power Delivery Materials List....79
Bulk Chemicals Needed for Power Generation and Delivery List....83
Natural Gas Delivery Materials List....85

Responsible Reentry and Return to the Workplace....87
Strategic Priorities for Returning to the Workplace....87
Engagement with State and Local Governments....89
Enterprise-Wide Reentry Planning....89
Planning Considerations for COVID-19 Contact Tracing....94
Planning Considerations for Reentry to Office Spaces....96
Planning Considerations for Field and Construction Work....105
Additional Resources....109
Example of COVID-19 Workflow & Biohazard Assessment....109
Planning Considerations for Technology....110

Internal and External Communications....117
Internal Communications....117
External Communications....120
Industry Communications....123
Storms & Other Events During a Pandemic....124
Additional Considerations....124
Industry Contacts....125

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
Dan	Lee	American Electric Power
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

First Name	Last Name	Company
Kevin	Hall	AES - Ohio
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
Troy	Bowen	Xcel Energy

Public & Internal Messaging

First Name	Last Name	Company
Tobias	*Sellier*	*American Public Power Association*
Julia	Miggeridge	Canadian Electricity Association
Sarah	Robinson	Canadian Electricity Association
Frances	Resheske	*Consolidated Edison*
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
Jon	Wentzel	Nuclear Energy Institute
Susan	Buehler	PJM Interconnection
Erin	Frye	Roseville Electric Utility

Telecom and IT Issues

First Name	Last Name	Company
Corry	Marshall	American Public Power Association
Sam	*Rozenberg*	*American Public Power Association*
Tobias	Sellier	American Public Power Association
Anna	Ballance	Edison Electric Institute
David	Batz	Edison Electric Institute
Patrick	Hart	Edison Electric Institute
Laura	*Schepis*	*Edison Electric Institute*
Channing	*Spencer*	*Edison Electric Institute*
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
Kevin	Carlson	Salt River Project
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
Tom	Moran	All Hazards Consortium
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

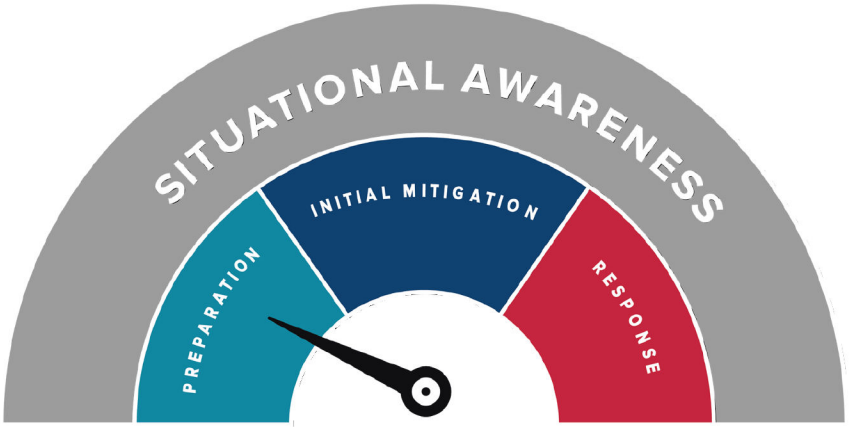
Sam	*Rozenberg*	*American Public Power Association*
Robert	McClanahan	Arkansas Electric Cooperative Corporation
Bill	Kelly	Austin Energy
George	Perez	Austin Energy
Thomas	Pierpoint	Austin Energy
Shana	Kuhn	Bonneville Power Administration
Scott	Smith	Bryan Texas Utilities
Robin	Yee	Canadian Electricity 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

First Name	Last Name	Company
Phil	Smithers	Arizona Public Service
Simon	Hodges	Dominion Energy
Sheldon	Retchin	Dominion Energy
Ralph	LaRossa	PSEG
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

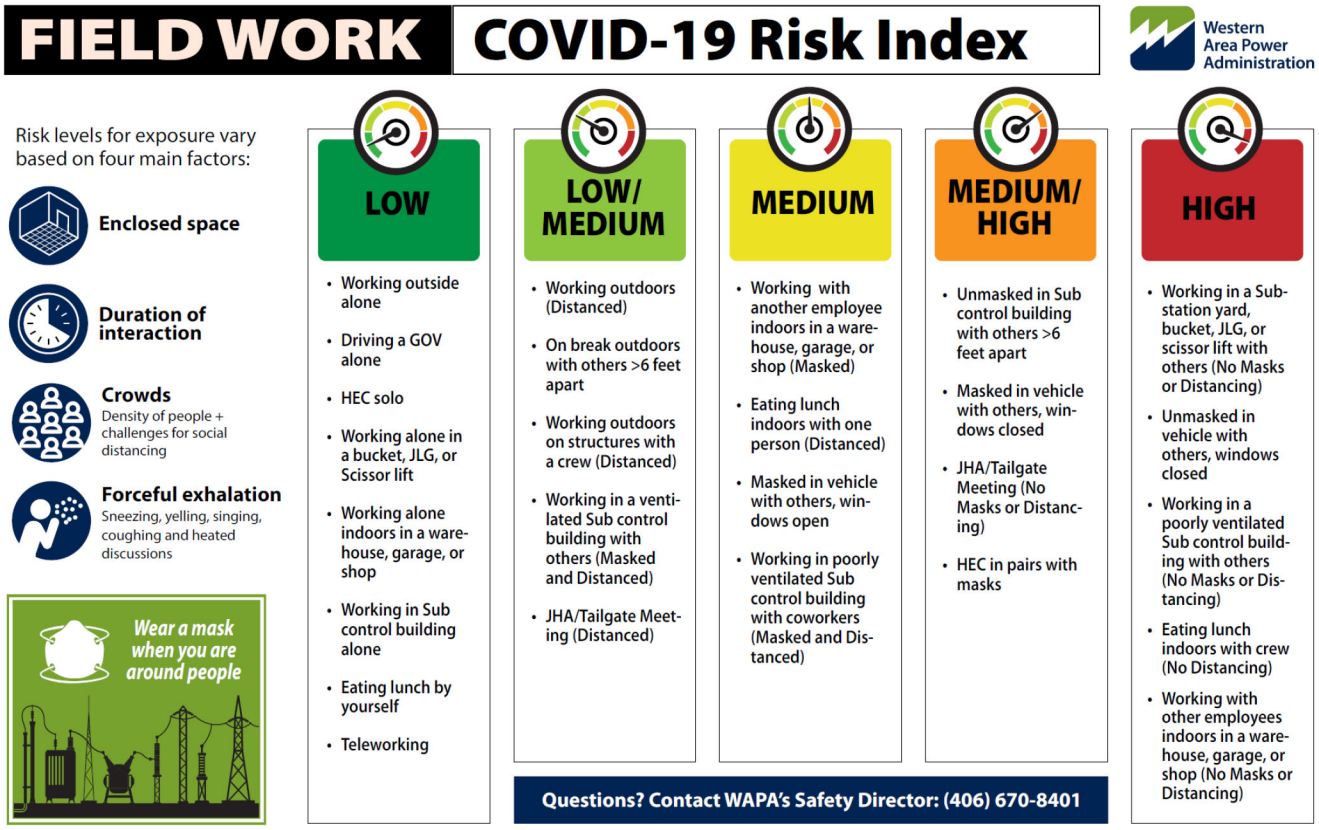
- Determining what messaging would be provided to:
  - General employees/managers/supervisors
  - Affected employee(s)
  - Managers/supervisors of affected employee(s)
  - Co-workers of affected employee(s)
  - Others at work location of affected employee(s)
  - Externally affected/exposed stakeholders
  - 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

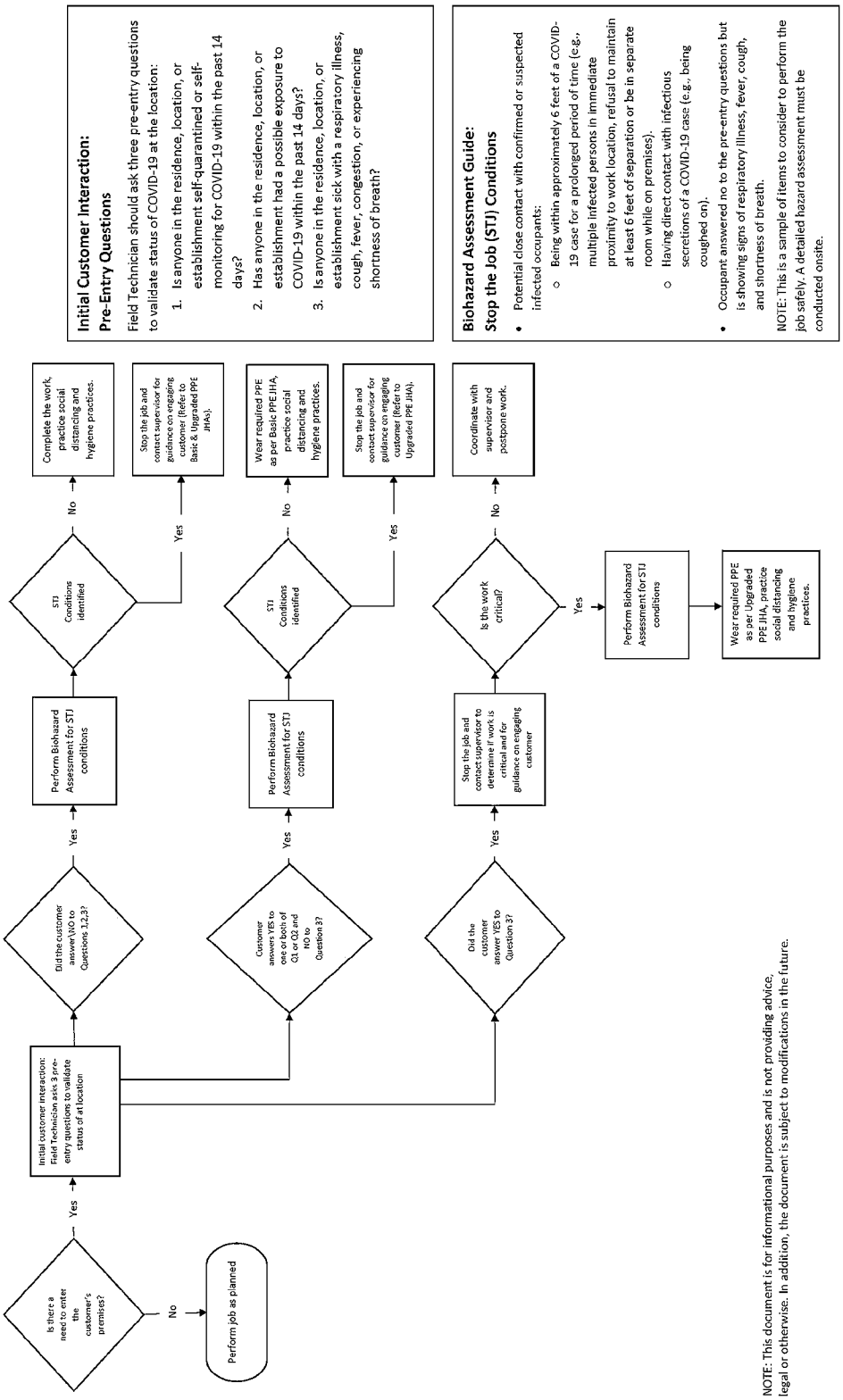
Access to Military and Federal Government Facilities

- 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



NOTE: This document is for informational purposes and is not providing advice, legal or otherwise. In addition, the document is subject to modifications in the future.

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.