This page intentionally left blank

U.S. Department of Homeland Security
Cybersecurity & Infrastructure Security Agency
Office of the Director
Washington, DC 20528

March 28, 2020

ADVISORY MEMORANDUM ON IDENTIFICATION OF ESSENTIAL CRITICAL INFRASTRUCTURE WORKERS DURING COVID-19 RESPONSE

FROM: Christopher C. Krebs
Director
Cybersecurity and Infrastructure Security Agency (CISA)

As the Nation comes together to slow the spread of COVID-19, on March 16th the President issued updated Coronavirus Guidance for America that highlighted the importance of the critical infrastructure workforce.

The Cybersecurity and Infrastructure Security Agency (CISA) executes the Secretary of Homeland Security's authorities to secure critical infrastructure. Consistent with these authorities, CISA has developed, in collaboration with other federal agencies, State and local governments, and the private sector, an "Essential Critical Infrastructure Workforce" advisory list. This list is intended to help State, local, tribal and territorial officials as they work to protect their communities, while ensuring continuity of functions critical to public health and safety, as well as economic and national security. Decisions informed by this list should also take into consideration additional public health considerations based on the specific COVID-19-related concerns of particular jurisdictions.

This list is advisory in nature. It is not, nor should it be considered, a federal directive or standard. Additionally, this advisory list is not intended to be the exclusive list of critical infrastructure sectors, workers, and functions that should continue during the COVID-19 response across all jurisdictions. Individual jurisdictions should add or subtract essential workforce categories based on their own requirements and discretion.

The advisory list identifies workers who conduct a range of operations and services that are typically essential to continued critical infrastructure viability, including staffing operations centers, maintaining and repairing critical infrastructure, operating call centers, working construction, and performing operational functions, among others. It also includes workers who support crucial supply chains and enable functions for critical infrastructure. The industries they support represent, but are not limited to, medical and healthcare, telecommunications, information technology systems, defense, food and agriculture, transportation and logistics, energy, water and wastewater, law enforcement,

and public works.

State, local, tribal, and territorial governments are responsible for implementing and executing response activities, including decisions about access and reentry, in their communities, while the Federal Government is in a supporting role. Officials should use their own judgment in issuing implementation directives and guidance. Similarly, while adhering to relevant public health guidance, critical infrastructure owners and operators are expected to use their own judgement on issues of the prioritization of business processes and workforce allocation to best ensure continuity of the essential goods and services they support. All decisions should appropriately balance public safety, the health and safety of the workforce, and the continued delivery of essential critical infrastructure services and functions. While this advisory list is meant to help public officials and employers identify essential work functions, it allows for the reality that some workers engaged in activity determined to be essential may be unable to perform those functions because of health-related concerns.

CISA will continue to work with our partners in the critical infrastructure community to update this advisory list if necessary as the Nation's response to COVID-19 evolves.

Should you have questions about this list, please contact CISA at CISA.CAT@cisa.dhs.gov.

Attachment: "Guidance on the Essential Critical Infrastructure Workforce: Ensuring Community and National Resilience in COVID-19 Response Version 2.0"

Guidance on the Essential Critical Infrastructure Workforce: Ensuring Community and National Resilience in COVID-19 Response

Version 2.0 (March 28, 2020)

THE IMPORTANCE OF ESSENTIAL CRITICAL INFRASTRUCTURE WORKERS

Functioning critical infrastructure is imperative during the response to the COVID-19 emergency for both public health and safety as well as community well-being. Certain critical infrastructure industries have a special responsibility in these times to continue operations.

This advisory guidance and accompanying list are intended to support state, local, tribal, territorial and industry partners in identifying the critical infrastructure sectors and the essential workers needed to maintain the services and functions Americans depend on daily and that need to be able to operate resiliently during the COVID-19 pandemic response.

This document gives advisory guidance on defining essential critical infrastructure workers. Promoting the ability of such workers to continue to work during periods of community restriction, access management, social distancing, or closure orders/directives is crucial to community resilience and continuity of essential functions.

CISA will continually solicit and accept feedback on the list and will evolve the list in response to stakeholder feedback. We will also use our various stakeholder engagement mechanisms to work with partners on how they are using this list and share those lessons learned and best practices broadly. Feedback can be sent to CISA.CAT@CISA.DHS.GOV.

CONSIDERATIONS FOR GOVERNMENT AND BUSINESS

This list was developed in consultation with federal agency partners, industry experts, and State and local officials, and is based on several key principles:

1. Response efforts to the COVID-19 pandemic are locally executed, state managed, and federally supported.
2. Everyone should follow guidance from the CDC, as well as State and local government officials, regarding strategies to limit disease spread.
3. Workers should be encouraged to work remotely when possible and focus on core business activities. In-person, non-mandatory activities should be delayed until the resumption of normal operations.
4. When continuous remote work is not possible, businesses should enlist strategies to reduce the likelihood of spreading the disease. This includes, but is not necessarily limited to, separating staff by off-setting shift hours or days and/or social distancing. These steps can preserve the workforce and allow operations to continue.
5. All organizations should implement their business continuity and pandemic plans or put plans in place if they do not exist. Delaying implementation is not advised and puts at risk the viability of the business and the

health and safety of the employees.

6. Reliance on technology and just-in-time supply chains means that certain workers must be able to access certain sites, facilities, and assets to ensure continuity of functions.

7. Government employees, such as emergency managers, and the business community need to establish and maintain lines of communication.

8. When government and businesses engage in discussions about essential critical infrastructure workers, they need to consider the implications of business operations beyond the jurisdiction where the asset or facility is located. Businesses can have sizeable economic and societal impacts as well as supply chain dependencies that are geographically distributed.

9. Whenever possible, jurisdictions should align access and movement control policies related to critical infrastructure workers to lower the burden of workers crossing jurisdictional boundaries.

IDENTIFYING ESSENTIAL CRITICAL INFRASTRUCTURE WORKERS

The following list of identified essential critical infrastructure workers is intended to be overly inclusive reflecting the diversity of industries across the United States.

HEALTHCARE / PUBLIC HEALTH

- Workers who perform critical clinical research, development, and testing needed for COVID-19 response.
- Healthcare providers and Caregivers including physicians, dentists, psychologists, mid-level practitioners, nurses and assistants, infection control and quality assurance personnel, pharmacists, physical and occupational therapists and assistants, social workers, optometrists, speech pathologists, chiropractors, and diagnostic and therapeutic technicians and technologists.
- Hospital and laboratory personnel (including accounting, administrative, admitting and discharge, engineering, epidemiological, source plasma and blood donation, food service, housekeeping, medical records, information technology and operational technology, nutritionists, sanitarians, respiratory therapists, etc.).
- Workers in other medical and biomedical facilities (including Ambulatory Health and Surgical, Blood Banks, Clinics, Community Mental Health, Comprehensive Outpatient rehabilitation, End Stage Renal Disease, Health Departments, Home Health care, Hospices, Hospitals, Long Term Care, Nursing Care Facilities, Organ Pharmacies, Procurement Organizations, Psychiatric Residential, Rural Health Clinics and Federally Qualified Health Centers, and retail facilities specializing in medical good and supplies).
- Manufacturer workers for health manufacturing (including biotechnology companies), materials and parts suppliers, logistics and warehouse operators, distributors of medical equipment (including those who test and repair), personal protective equipment (PPE), isolation barriers, medical gases, pharmaceuticals (including materials used in radioactive drugs), dietary supplements, blood and blood products, vaccines, testing materials, laboratory supplies, cleaning, sanitizing, disinfecting or sterilization supplies, and tissue and paper towel products.
- Public health / community health workers, including those who compile, model, analyze and communicate public health information.
- Blood and plasma donors and the employees of the organizations that operate and manage related activities.
- Workers who manage health plans, billing, and health information, who cannot practically work remotely.
- Workers who conduct community-based public health functions, conducting epidemiologic surveillance, compiling, analyzing and communicating public health information, who cannot practically work remotely.
- Workers performing information technology and cybersecurity functions at healthcare and public health facilities, who cannot practically work remotely.
- Workers performing security, incident management, and emergency operations functions at or on behalf of healthcare entities including healthcare coalitions, who cannot practically work remotely.
- Pharmacy employees necessary to maintain uninterrupted prescription filling.
- Workers performing mortuary funeral, cremation, burial, cemetery, and related services, including funeral homes, crematoriums, cemetery workers, and coffin makers.
- Workers who coordinate with other organizations to ensure the proper recovery, handling, identification, transportation, tracking, storage, and disposal of human remains and personal effects; certify cause of death; and facilitate access to mental/behavioral health services to the family members, responders, and survivors of an incident.

LAW ENFORCEMENT, PUBLIC SAFETY, AND OTHER FIRST RESPONDERS

- Public, private, and voluntary personnel (front line and management) in emergency management, law enforcement, fire and rescue services, emergency medical services, and private security, to include public and private hazardous material responders, air medical service providers (pilots and supporting technicians), corrections, and search and rescue personnel.
- 911 call center employees and Public Safety Answering Points who can't perform their duties remotely.
- Fusion Center employees.
- Workers – including contracted vendors -- who maintain, manufacture, or supply equipment and services supporting law enforcement emergency service and response operations (to include electronic security and life safety security personnel).
- Workers supporting the manufacturing of safety equipment and uniforms for law enforcement, public safety personnel, and first responder.
- Workers supporting the operation of firearm or ammunition product manufacturers, retailers, importers, distributors, and shooting ranges.
- Public agency workers responding to abuse and neglect of children, elders, and dependent adults.
- Workers who support weather disaster / natural hazard mitigation and prevention activities.
- Security staff to maintain building access control and physical security measures.

FOOD AND AGRICULTURE

- Workers supporting groceries, pharmacies, convenience stores, and other retail (including unattended and vending) that sells human food, animal/pet food and pet supply, and beverage products, including retail customer support service and information technology support staff necessary for online orders, pickup and delivery.
- Restaurant carry-out and quick serve food operations, including dark kitchen and food prep centers, and carry-out and delivery food employees.
- Food manufacturer employees and their supplier employees—to include those employed in food ingredient production and processing facilities; livestock, poultry, seafood slaughter facilities; pet and animal feed processing facilities; human food facilities producing by-products for animal food; beverage production facilities; and the production of food packaging.
- Farmers, farm workers, and agribusiness support services to include those employed in auction and sales: grain and oilseed handling, processing and distribution; animal food, feed, and ingredient production, packaging, and distribution; manufacturing, packaging, and distribution of veterinary drugs; truck delivery and transport; farm and fishery labor needed to produce our food supply domestically and for export.
- Farmers, farm workers, support service workers, and their supplier employees to include those engaged in producing and harvesting field crops; commodity inspection; fuel ethanol facilities; biodiesel and renewable diesel facilities; storage facilities; and other agricultural inputs.
- Employees and firms supporting the distribution of food, feed, and beverage and ingredients used in these products, including warehouse workers, vendor- managed inventory controllers and blockchain managers.
- Workers supporting the sanitation and pest control of all food manufacturing processes and operations from wholesale to retail.
- Employees in cafeterias used to feed employees, particularly employee populations sheltered against COVID-19.
- Workers in animal diagnostic and food testing laboratories in private industries and in institutions of higher education.

- Government, private, and non-governmental organizations' workers essential for food assistance programs (including school lunch programs) and government payments.
- Employees of companies engaged in the production, storage, transport, and distribution of chemicals, medicines, vaccines, and other substances used by the food and agriculture industry, including seeds, pesticides, herbicides, fertilizers, minerals, enrichments, and other agricultural production aids.
- Animal agriculture workers to include those employed in veterinary health (including those involved in supporting emergency veterinary or livestock services); raising of animals for food; animal production operations; livestock markets; slaughter and packing plants, manufacturers, renderers, and associated regulatory and government workforce.
- Transportation supporting animal agricultural industries, including movement of animal medical and reproductive supplies and materials, animal vaccines, animal drugs, feed ingredients, feed, and bedding, live animals, animal by-products, and deceased animals for disposal.
- Workers who support sawmills and the manufacture and distribution of fiber and forest products, including, but not limited to timber, paper, and other wood and fiber products.
- Employees engaged in the manufacture and maintenance of equipment and other infrastructure necessary for agricultural production and distribution.

ENERGY

- Workers supporting the energy sector, regardless of the energy source (including but not limited to nuclear, fossil, hydroelectric, or renewable), segment of the system, or infrastructure the worker is involved in, or who are needed to monitor, operate, engineer, and maintain the reliability, safety, environmental health, and physical and cyber security of the energy system.
- Energy/commodity trading/scheduling/marketing functions, who can't perform their duties remotely.
- IT and OT technology for essential energy sector operations including support workers, customer service operations; energy management systems, control systems, and Supervisory Control and Data Acquisition SCADA systems, and energy sector entity data centers; cybersecurity engineers; and cybersecurity risk management.
- Workers supporting the energy sector through renewable energy infrastructure (including, but not limited to wind, solar, biomass, hydrogen, ocean, geothermal, and/or hydroelectric), including those supporting construction, manufacturing, transportation, permitting, operation/maintenance, monitoring, and logistics.
- Workers and security staff involved in nuclear re-fueling operations.
- Providing services related to energy sector fuels (including, but not limited, petroleum (crude oil), natural gas, propane, natural gas liquids, other liquid fuels, nuclear, and coal), supporting the mining, processing, manufacturing, construction, logistics, transportation, permitting, operation/maintenance, security, waste disposal and storage, and monitoring of support for resources.
- Environmental remediation/monitoring, limited to immediate critical needs technicians.
- Manufacturing and distribution of equipment, supplies, and parts necessary to maintain production, maintenance, restoration, and service at energy sector facilities (across all energy sector segments).

Electricity industry:

- Workers who maintain, ensure, or restore, or are involved in the development, transportation, fuel procurement, expansion, or operation of the generation, transmission, and distribution of electric power, including call centers, utility workers, engineers, retail electricity, constraint maintenance, and fleet maintenance technicians-who cannot perform their duties remotely.
- Workers at coal mines, production facilities, and those involved in manufacturing, transportation, permitting, operation/maintenance and monitoring at coal sites which is critical to ensuring the reliability of the electrical system.

- Workers who produce, process, ship and handle coal used for power generation and manufacturing.
- Workers needed for safe and secure operations at nuclear generation to include but not limited to, the broader nuclear supply chain, parts to maintain nuclear equipment, fuel manufacturers and fuel components used in the manufacturing of fuel.
- Workers at renewable energy infrastructure (including, but not limited to wind, solar, biomass, hydrogen, geothermal, and/or hydroelectric), including those supporting construction, manufacturing, transportation, permitting, operation/maintenance, monitoring, and logistics.
- Workers at generation, transmission, and electric black start facilities.
- Workers at Reliability Coordinator, Balancing Authorities, and primary and backup Control Centers, including but not limited to independent system operators, regional transmission organizations, and local distribution control centers.
- Mutual assistance personnel which may include workers from outside of the state or local jurisdiction.
- Vegetation management and traffic control for supporting those crews.
- Environmental remediation/monitoring workers limited to immediate critical needs technicians.
- Instrumentation, protection, and control technicians.
- Essential support personnel for electricity operations.
- Generator set support workers such as diesel engineers used in power generation including those providing fuel.

Petroleum industry:

- Workers for onshore and offshore petroleum drilling operations; platform and drilling construction and maintenance; transportation (including helicopter operations), maritime transportation, supply, and dredging operations; maritime navigation; well stimulation, intervention, monitoring, automation and control, extraction, production; processing; waste disposal, and maintenance, construction, and operations.
- Workers for crude oil, petroleum and petroleum product storage and transportation, including pipeline, marine transport, terminals, rail transport, storage facilities and racks and road transport for use as end-use fuels such as gasoline, diesel fuel, jet fuel, and heating fuels or feedstocks for chemical manufacturing.
- Petroleum and petroleum product security operations center employees and workers who support maintenance and emergency response services.
- Petroleum and petroleum product operations control rooms/centers and refinery facilities.
- Retail fuel centers such as gas stations and truck stops, and the distribution systems that support them.
- Supporting new and existing construction projects, including, but not limited to, pipeline construction.

Natural Gas, Natural Gas Liquids (NGL), Propane, and other liquid fuels

- Workers who support onshore and offshore drilling operations, platform and drilling construction and maintenance; transportation (including helicopter operations); maritime transportation, supply, and dredging operations; maritime navigation; natural gas and natural gas liquid production, processing, extraction, storage and transportation; well intervention, monitoring, automation and control; waste disposal, and maintenance, construction, and operations.
- Transmission and distribution pipeline workers, including compressor stations and any other required, operations maintenance, construction, and support for natural gas, natural gas liquid, propane, and other liquid fuels.
- Natural gas, propane, natural gas liquids, and other liquid fuel processing plants, including construction, maintenance, and support operations.
- Natural gas processing plants workers, and those that deal with natural gas liquids.
- Workers who staff natural gas, propane, natural gas liquids, and other liquid fuel security operations centers, operations dispatch and control rooms/centers, and emergency response and customer emergencies (including leak calls) operations.
- Drilling, production, processing, refining, and transporting natural gas for use as end-use fuels, feedstocks for

chemical manufacturing, or use in electricity generation.

- Dispatch and control rooms and emergency response and customer emergencies, including propane leak calls.
- Propane gas service maintenance and restoration, including call centers.
- Propane, natural gas liquids, and other liquid fuel distribution centers.
- Propane gas storage, transmission, and distribution centers.
- Supporting new and existing construction projects, including, but not limited to, pipeline construction.
- Ethanol and biofuel production, refining, and distribution.
- Workers in fuel sectors (including, but not limited to nuclear, coal, and gas types and liquid fuels) supporting the mining, manufacturing, logistics, transportation, permitting, operation/maintenance, and monitoring of support for resources.

WATER AND WASTEWATER

Employees needed to operate and maintain drinking water and wastewater/drainage infrastructure, including:

- Operational staff at water authorities.
- Operational staff at community water systems.
- Operational staff at wastewater treatment facilities.
- Workers repairing water and wastewater conveyances and performing required sampling or monitoring, including field staff.
- Operational staff for water distribution and testing.
- Operational staff at wastewater collection facilities.
- Operational staff and technical support for SCADA Control systems.
- Chemical and equipment suppliers to water and wastewater systems and personnel protection.
- Workers who maintain digital systems infrastructure supporting water and wastewater operations.

TRANSPORTATION AND LOGISTICS

- Employees supporting or enabling transportation functions, including truck drivers, bus drivers, dispatchers, maintenance and repair technicians, warehouse workers, truck stop and rest area workers, Department of Motor Vehicle (DMV) employees, towing/recovery services, roadside assistance workers, intermodal transportation personnel, and workers who maintain and inspect infrastructure (including those that require cross-jurisdiction travel).
- Workers supporting the distribution of food, pharmaceuticals (including materials used in radioactive drugs) and other medical materials, fuels, chemicals needed for water or water treatment and energy Maintenance and operation of essential highway infrastructure, including roads, bridges, and tunnels (e.g., traffic operations centers and moveable bridge operators).
- Employees of firms providing services, supplies, and equipment that enable warehouse and operations, including cooling, storing, packaging, and distributing products for wholesale or retail sale or use. Includes cold- and frozen-chain logistics for food and critical biologic products.
- Mass transit workers and providing critical transit services and/or performing critical or routine maintenance to mass transit infrastructure or equipment.
- Employees supporting personal and commercial transportation services – including taxis, delivery services, vehicle rental services, bicycle maintenance and car-sharing services, and transportation network providers.
- Workers responsible for operating and dispatching passenger, commuter and freight trains and maintaining rail infrastructure and equipment.
- Maritime transportation workers, including dredgers, port workers, mariners, ship crewmembers, ship pilots and tug boat operators, equipment operators (to include maintenance and repair, and maritime-specific medical

providers), ship supply, chandler, and repair companies.

- Workers including truck drivers, railroad employees and contractors, maintenance crew, and cleaners supporting transportation of chemicals, hazardous, medical, and waste materials to support critical infrastructure, capabilities, functions, and services, including specialized carriers, crane and rigging industryworkers.
- Bus drivers and workers who provide or support intercity, commuter and charter bus service in support of other essential services or functions.
- Automotive repair, maintenance, and transportation equipment manufacturing and distribution facilities (including those who repair and maintain electric vehicle charging stations).
- Transportation safety inspectors, including hazardous material inspectors and accident investigator inspectors.
- Manufacturers and distributors (to include service centers and related operations) of packaging materials, pallets, crates, containers, and other supplies needed to support manufacturing, packaging staging and distributionoperations.
- Postal, parcel, courier, last-mile delivery, and shipping and related workers, to include privatecompanies.
- Employees who repair and maintain vehicles, aircraft, rail equipment, marine vessels, bicycles, and the equipmentand infrastructure that enables operations that encompass movement of cargo and passengers.
- Air transportation employees, including air traffic controllers and maintenance personnel, ramp workers, aviation and aerospace safety, security, and operations personnel and accident investigations.
- Workers who support the operation, distribution, maintenance, and sanitation, of air transportation for cargo and passengers, including flight crews, maintenance, airport operations, those responsible for cleaning and disinfection, and other on- and off- airport facilitiesworkers.
- Workers supporting transportation via inland waterways such as barge crew, dredging, river port workers for essential goods.
- Workers critical to rental and leasing of vehicles and equipment that facilitate continuity of operations for essential workforces and other essential travel.
- Warehouse operators, including vendors and support personnel critical for business continuity (including HVAC & electrical engineers; security personnel; and janitorial staff) and customer service for essential functions.

PUBLIC WORKS AND INFRASTRUCTURE SUPPORT SERVICES

- Workers who support the operation, inspection, and maintenance of essential public works facilities and operations, including bridges, water and sewer main breaks, fleet maintenance personnel, construction of critical or strategic infrastructure, traffic signal maintenance, emergency location services for buried utilities, maintenance of digital systems infrastructure supporting public works operations, and other emergent issues.
- Workers such as plumbers, electricians, exterminators, builders, contractors, HVAC Technicians, landscapers, and other service providers who provide services that are necessary to maintaining the safety, sanitation, and essential operation of residences, businesses and buildings such as hospitals, senior living facilities, any temporary construction required to support COVID-19 response.
- Workers who support, such as road and line clearing, to ensure the availability of and access to needed facilities, transportation, energy and communications.
- Support to ensure the effective removal, storage, and disposal of residential and commercial solid waste and hazardous waste, including landfilloperations.
- Workers who support the operation, inspection, and maintenance of essential dams, locks and levees.
- Workers who support the inspection and maintenance of aids to navigation, and other government provided services that ensure continued maritime commerce.

COMMUNICATIONS AND INFORMATION TECHNOLOGY

Communications:

- Maintenance of communications infrastructure- including privately owned and maintained communication systems- supported by technicians, operators, call -centers, wireline and wireless providers, cable service providers, satellite operations, Internet Exchange Points, Points of Presence, Network Access Points, back haul and front haul facilities, and manufacturers and distributors of communications equipment.
- Government and private sector employees (including government contractors) with work related to undersea cable infrastructure and support facilities, including cable landing sites, beach manhole vaults and covers, submarine cable depots and submarine cable ship facilities.
- Government and private sector employees (including government contractors) supporting Departmentof Defense internet and communications facilities.
- Workers who support radio, television, and media service, including, but not limited to front-line news reporters, studio, and technicians for newsgathering, and reporting, and publishing news.
- Network Operations staff, engineers and/or technicians to include IT managers and staff, HVAC & electrical engineers, security personnel, software and hardware engineers, and database administrators that manage the network or operate facilities.
- Engineers, technicians and associated personnel responsible for infrastructure construction and restoration, including contractors for construction and engineering of fiber optic cables, buried conduit, small cells, other wireless facilities, and other communications sector-related infrastructure. This includes construction of new facilities and deployment of new technology as these are required to address congestion or customer usage due to unprecedented use of remote services.
- Installation, maintenance and repair technicians that establish, support or repair service as needed.
- Central office personnel to maintain and operate central office, data centers, and other network office facilities, critical support personnel assisting front line employees.
- Customer service and support staff, including managed and professional services as well as remote providers of support to transitioning employees to set up and maintain home offices, who interface with customers to manage or support service environments and security issues, including payroll, billing, fraud, logistics, and troubleshooting.
- Workers providing electronic security, fire, monitoring and life safety services, and to ensure physical security, cleanliness and safety of facilities and personnel, including temporary licensing waivers for security personnel to work in other States of Municipalities.
- Dispatchers involved with service repair and restoration.
- Retail customer service personnel at critical service center locations for onboarding customers, distributing and repairing equipment and addressing customer issues in order to support individuals' remote emergency communications needs, supply chain and logistics personnel to ensure goods and products are on-boarded to provision these front-line employees.
- External Affairs personnel to assist in coordinating with local, state and federal officials to address communications needs supporting COVID-19 response, public safety, and nationalsecurity.

Information Technology:

- Workers who support command centers, including, but not limited to Network Operations Command Centers, Broadcast Operations Control Centers and Security Operations Command Centers.
- Data center operators, including system administrators, HVAC & electrical engineers, security personnel, IT managers and purchasers, data transfer solutions engineers, software and hardware engineers, and database administrators, for all industries (including financial services).

- Workers who support client service centers, field engineers, and other technicians and workers supporting critical infrastructure, as well as manufacturers and supply chain vendors that provide hardware and software, support services, research and development, and information technology equipment (to include microelectronics and semiconductors), and HVAC and electrical equipment for critical infrastructure, and test labs and certification agencies that qualify such equipment(to include microelectronics, optoelectronics, and semiconductors) for critical infrastructure, including data centers.
- Workers needed to preempt and respond to cyber incidents involving critical infrastructure, including medical facilities, SLTT governments and federal facilities, energy and utilities, and banks and financial institutions, securities/other exchanges, other entities that support the functioning of capital markets, public works, critical manufacturing, food & agricultural production, transportation, and other critical infrastructure categories and personnel, in addition to all cyber defense workers (who can't perform their duties remotely).
- Suppliers, designers, transporters and other workers supporting the manufacture, distribution and provision and construction of essential global, national and local infrastructure for computing services (including cloud computing services and telework capabilities), business infrastructure, financial transactions/services, web-based services, and critical manufacturing.
- Workers supporting communications systems and information technology- and work from home solutions- used by law enforcement, public safety, medical, energy, public works, critical manufacturing, food & agricultural production, financial services, education, and other critical industries and businesses.
- Employees required in person to support Software as a Service businesses that enable remote working, performance of business operations, distance learning, media services, and digital health offerings, or required for technical support crucial for business continuity and connectivity.

OTHER COMMUNITY- OR GOVERNMENT-BASED OPERATIONS AND ESSENTIAL FUNCTIONS

- Workers to ensure continuity of building functions, including but not limited to security and environmental controls (e.g., HVAC), the manufacturing and distribution of the products required for these functions, and the permits and inspections for construction supporting essential infrastructure.
- Elections personnel to include both public and private sector elections support.
- Workers supporting the operations of the judicial system.
- Federal, State, and Local, Tribal, and Territorial employees who support Mission Essential Functions and communications networks.
- Trade Officials (FTA negotiators; international data flow administrators).
- Employees necessary to maintain news and media operations across various media.
- Employees supporting Census 2020.
- Weather forecasters.
- Clergy for essential support.
- Workers who maintain digital systems infrastructure supporting other critical government operations.
- Workers who support necessary credentialing, vetting and licensing operations for critical infrastructure workers.
- Customs and immigration workers who are critical to facilitating trade in support of the national emergency response supply chain.
- Educators supporting public and private K-12 schools, colleges, and universities for purposes of facilitating distance learning or performing other essential functions.
- Staff at government offices who perform title search, notary, and recording services in support of mortgage and real estate services and transactions.

- Residential and commercial real estate services, including settlement services.
- Workers supporting essential maintenance, manufacturing, design, operation, inspection, security, and construction for essential products, services, and supply chain and COVID 19 relief efforts.

CRITICAL MANUFACTURING

- Workers necessary for the manufacturing of metals (including steel and aluminum), industrial minerals, semiconductors, materials and products needed for medical supply chains, and for supply chains associated with transportation, energy, communications, information technology, food and agriculture, chemical manufacturing, nuclear facilities, wood products, commodities used as fuel for power generation facilities, the operation of dams, water and wastewater treatment, processing and reprocessing of solid waste, emergency services, and the defense industrial base. Additionally, workers needed to maintain the continuity of these manufacturing functions and associated supply chains, and workers necessary to maintain a manufacturing operation in warm standby.
- Workers necessary for the manufacturing of materials and products needed to manufacture medical equipment and personal protective equipment (PPE).
- Workers necessary for mining and production of critical minerals, materials and associated essential supply chains, and workers engaged in the manufacture and maintenance of equipment and other infrastructure necessary for mining production and distribution.
- Workers who produce or manufacture parts or equipment that supports continued operations for any essential services and increase in remote workforce (including computing and communication devices, semiconductors, and equipment such as security tools for Security Operations Centers (SOCs) or datacenters).

HAZARDOUS MATERIALS

- Workers who manage hazardous materials associated with any other essential activity, including but not limited to healthcare waste (medical, pharmaceuticals, medical material production), testing operations (laboratories processing test kits), and energy (nuclear facilities) Workers at nuclear facilities, workers managing medical waste, workers managing waste from pharmaceuticals and medical material production, and workers at laboratories processing tests Workers who support hazardous materials response and cleanup.
- Workers who maintain digital systems infrastructure supporting hazardous materials management operations.

FINANCIAL SERVICES

- Workers who are needed to provide, process and maintain systems for processing, verification, and recording of financial transactions and services, including payment, clearing, and settlement; wholesale funding; insurance services; consumer and commercial lending; and capital markets activities).
- Workers who are needed to maintain orderly market operations to ensure the continuity of financial transactions and services.
- Workers who are needed to provide business, commercial, and consumer access to bank and non-bank financial services and lending services, including ATMs, lending and money transmission, and to move currency, checks, securities, and payments (e.g., armored cash carriers).
- Workers who support financial operations and those staffing call centers, such as those staffing data and security operations centers, managing physical security, or providing accounting services.
- Workers supporting production and distribution of debit and credit cards.
- Workers providing electronic point of sale support personnel for essential businesses and workers.

CHEMICAL

- Workers supporting the chemical and industrial gas supply chains, including workers at chemical manufacturing plants, workers in laboratories, workers at distribution facilities, workers who transport basic raw chemical materials to the producers of industrial and consumer goods, including hand sanitizers, food and food additives, pharmaceuticals, paintings and coatings, textiles, building materials, plumbing, electrical, and paper products.
- Workers supporting the safe transportation of chemicals, including those supporting tank truck cleaning facilities and workers who manufacture packaging items.
- Workers supporting the production of protective cleaning and medical solutions, personal protective equipment, disinfectants, fragrances, and packaging that prevents the contamination of food, water, medicine, among others essential.
- Workers supporting the operation and maintenance of facilities (particularly those with high risk chemicals and/or sites that cannot be shut down) whose work cannot be done remotely and requires the presence of highly trained personnel to ensure safe operations, including plant contract workers who provide inspections.
- Workers who support the production and transportation of chlorine and alkali manufacturing, single-use plastics, and packaging that prevents the contamination or supports the continued manufacture of food, water, medicine, and other essential products, including glass container manufacturing.

DEFENSE INDUSTRIAL BASE

- Workers who support the essential services required to meet national security commitments to the federal government and U.S. Military. These individuals include, but are not limited to, space and aerospace; mechanical and software engineers (various disciplines), manufacturing/production workers; IT support; security staff; security personnel; intelligence support, aircraft and weapon system mechanics and maintainers; and sanitary workers who maintain the hygienic viability of necessary facilities.
- Personnel working for companies, and their subcontractors, who perform under contract or sub-contract to the Department of Defense, as well as personnel at government-owned/contractor- operated and government-owned/government-operated facilities, and who provide materials and services to the Department of Defense, including support for weapon systems, software systems and cybersecurity, defense and intelligence communications and surveillance, space systems and other activities in support of our military, intelligence and space forces.

COMMERCIAL FACILITIES

- Workers who support the supply chain of building materials from production through application/installation, including cabinetry, fixtures, doors, cement, hardware, plumbing, electrical, heating/cooling, refrigeration, appliances, paint/coatings, and employees who provide services that enable repair materials and equipment for essential functions.
- Workers supporting ecommerce through distribution, warehouse, call center facilities, and other essential operational support functions.
- Workers in hardware and building materials stores, consumer electronics, technology and appliances retail, and related merchant wholesalers and distributors - with reduced staff to ensure continued operations.
- Workers distributing, servicing, repairing, installing residential and commercial HVAC systems, boilers, furnaces and other heating, cooling, refrigeration, and ventilation equipment.

RESIDENTIAL/SHELTER FACILITIES AND SERVICES

- Workers in dependent care services, in support of workers in other essential products and services.

- Workers who support food, shelter, and social services, and other necessities of life for needy groups and individuals, including in-need populations and COVID-19 responders (including travelling medical staff).
- Workers in animal shelters.
- Workers responsible for the leasing of residential properties to provide individuals and families with ready access to available housing.
- Workers responsible for handling property management, maintenance, and related service calls who can coordinate the response to emergency "at-home" situations requiring immediate attention, as well as facilitate the reception of deliveries, mail, and other necessary services.
- Workers performing housing construction related activities to ensure additional units can be made available to combat the nation's existing housing supply shortage.
- Workers performing services in support of the elderly and disabled populations who coordinate a variety of services, including health care appointments and activities of daily living.
- Workers supporting the construction of housing, including those supporting government functions related to the building and development process, such as inspections, permitting and plan review services that can be modified to protect the public health, but fundamentally should continue and serve the construction of housing (e.g., allow qualified private third-party inspections in case of government shutdown).

HYGIENE PRODUCTS AND SERVICES

- Workers who produce hygiene products.
- Workers in laundromats, laundry services, and dry cleaners.
- Workers providing personal and household goods repair and maintenance.
- Workers providing disinfection services, for all essential facilities and modes of transportation, and supporting the sanitation of all food manufacturing processes and operations from wholesale to retail.
- Workers necessary for the installation, maintenance, distribution, and manufacturing of water and space heating equipment and its components.
- Support required for continuity of services, including commercial disinfectant services, janitorial/cleaning personnel, and support personnel functions that need freedom of movement to access facilities in support of front-line employees.

This page intentionally left blank

Use of Cloth Face Coverings to Help Slow the Spread of COVID-19

How to Wear Cloth Face Coverings

Cloth face coverings should—

- fit snugly but comfortably against the side of the face
- be secured with ties or ear loops
- include multiple layers of fabric
- allow for breathing without restriction
- be able to be laundered and machine dried without damage or change to shape

CDC on Homemade Cloth Face Coverings

CDC recommends wearing cloth face coverings in public settings where other social distancing measures are difficult to maintain (e.g., grocery stores and pharmacies), **especially** in areas of significant community-based transmission.

CDC also advises the use of simple cloth face coverings to slow the spread of the virus and help people who may have the virus and do not know it from transmitting it to others. Cloth face coverings fashioned from household items or made at home from common materials at low cost can be used as an additional, voluntary public health measure.

Cloth face coverings should not be placed on young children under age 2, anyone who has trouble breathing, or is unconscious, incapacitated or otherwise unable to remove the cloth face covering without assistance.

The cloth face coverings recommended are not surgical masks or N-95 respirators. Those are critical supplies that must continue to be reserved for healthcare workers and other medical first responders, as recommended by current CDC guidance.

Should cloth face coverings be washed or otherwise cleaned regularly? How regularly?

Yes. They should be routinely washed depending on the frequency of use.

How does one safely sterilize/clean a cloth face covering?

A washing machine should suffice in properly washing a cloth face covering.

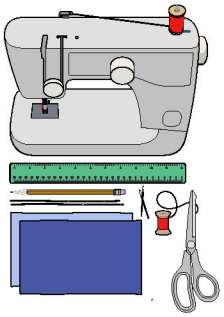
How does one safely remove a used cloth face covering?

Individuals should be careful not to touch their eyes, nose, and mouth when removing their cloth face covering and wash hands immediately after removing.

CS316353B 04/04/2020, 12:22 PM

cdc.gov/coronavirus

Sewn Cloth Face Covering

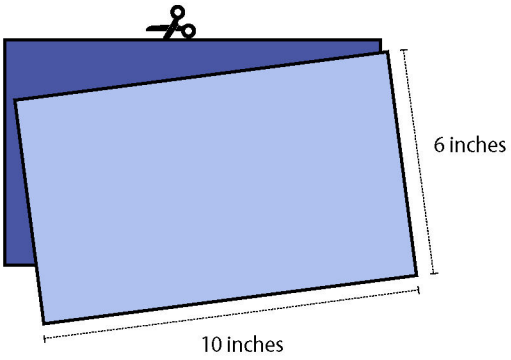


Materials

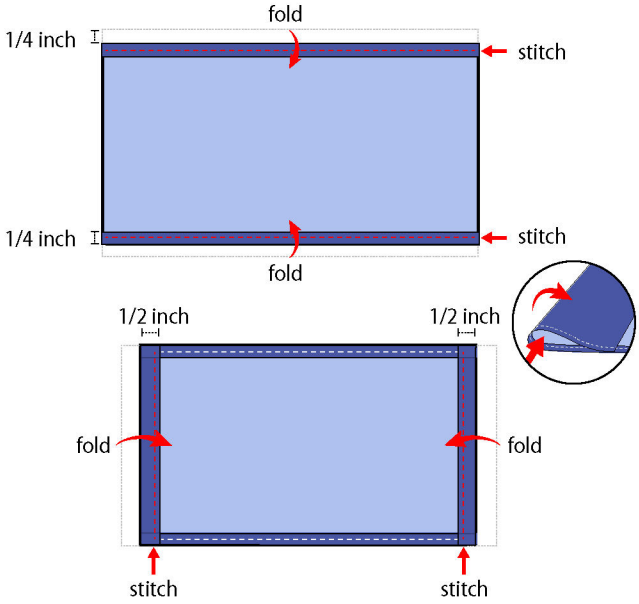
- Two 10"x6" rectangles of cotton fabric
- Two 6" pieces of elastic (or rubber bands, string, cloth strips, or hair ties)
- Needle and thread (or bobby pin)
- Scissors
- Sewing machine

Tutorial

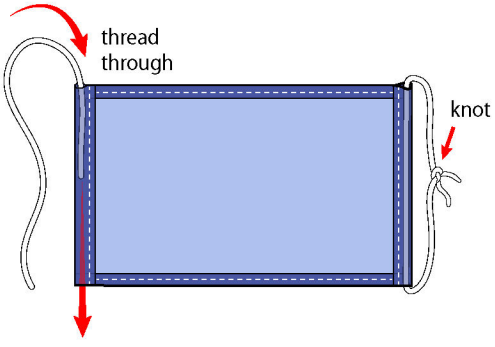
1. Cut out two 10-by-6-inch rectangles of cotton fabric. Use tightly woven cotton, such as quilting fabric or cotton sheets. T-shirt fabric will work in a pinch. Stack the two rectangles; you will sew the cloth face covering as if it was a single piece of fabric.



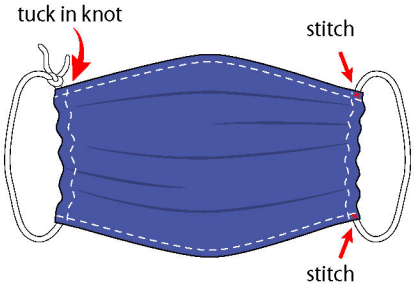
2. Fold over the long sides ¼ inch and hem. Then fold the double layer of fabric over ½ inch along the short sides and stitch down.



3. Run a 6-inch length of 1/8-inch wide elastic through the wider hem on each side of the cloth face covering. These will be the ear loops. Use a large needle or a bobby pin to thread it through. Tie the ends tight.
Don't have elastic? Use hair ties or elastic head bands. If you only have string, you can make the ties longer and tie the cloth face covering behind your head.



4. Gently pull on the elastic so that the knots are tucked inside the hem.
Gather the sides of the cloth face covering on the elastic and adjust so the cloth face covering fits your face. Then securely stitch the elastic in place to keep it from slipping.



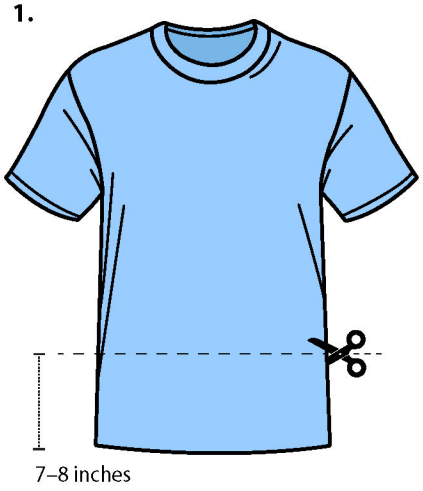
Quick Cut T-shirt Cloth Face Covering (no sew method)

Materials

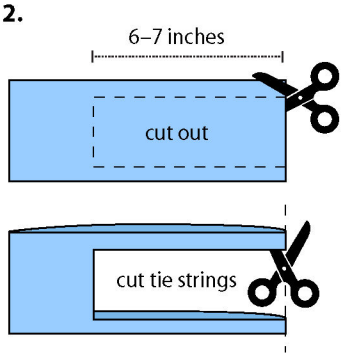
- T-shirt
- Scissors

Tutorial

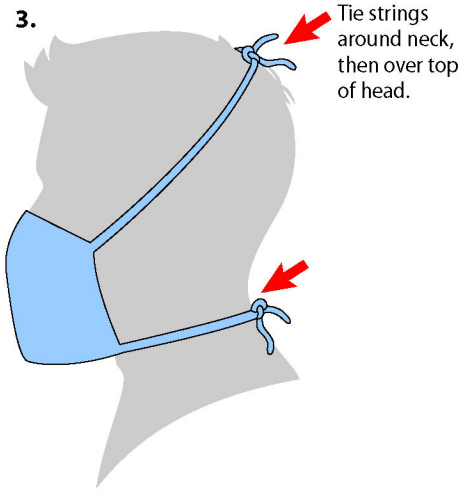
1.



2.



3.



Bandana Cloth Face Covering (no sew method)

Materials

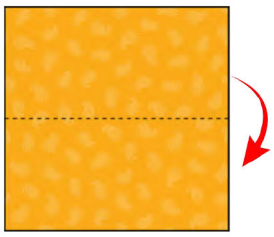
- Bandana (or square cotton cloth approximately 20"x20")
- Coffee filter
- Rubber bands (or hair ties)
- Scissors (if you are cutting your own cloth)

Tutorial

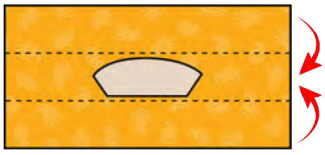
1.

cut coffee filter

2.



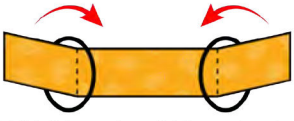
3.



4.

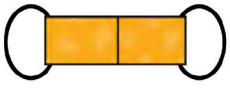
Place rubber bands or hair ties about 6 inches apart.

5.



Fold side to the middle and tuck.

6.



7.

APPENDIX C

Tips to Make Working from Home Successful

To help United employees be productive while working remotely, here are several guidelines and recommendations:

1. Go through your normal morning routine regarding waking time, breakfast, dressing as you would for work, etc., if possible. Your routines help you maintain some sense of normalcy in your day.

2. Add extra lighting to your home workspace, if possible. Better yet, position your workspace near a window. Research is clear that brightly lit workspaces, especially when the lighting is natural light, boost our moods and our productivity, as well as enhance our sleep quality.

3. Proper ergonomics of your home work station will help to maintain comfort and efficiency while tele-working. The work surface should be close to your elbow height, with your elbows at 90 degrees. This allows typing, use of the mouse, and writing with less contact stress on the edge of the work surface. A large and wide workspace allows placement of all necessary equipment and documents, which improves productivity. For short stints, a dining room chair or wooden chair will provide comfort, but the lack of padding and lumbar support can lead to significant discomfort over time. If you want to add some lumbar support, roll a towel and place it between your chair and lower back. Adjustable office chairs are highly preferable to dining room chairs and stools as they allow customized support. When using a chair your feet should be firmly supported by the floor or footrest. Adjustable or removable armrests allow easier movement under surfaces. Using a laptop keyboard throughout the day forces hunched postures. External keyboards and full-size mice allow you to position the laptop screen away from the input devices and sit upright. Your mouse should located next to the keyboard and at the same height. Use full-sized equipment designed for comfortable, long-term usage (eight hours per day). If you have regular wrist discomfort, consider vertical mice or curved keyboards. Avoid small-sized travel keyboards and travel mice; they are designed for very short-term usage. Stack books or use a monitor / laptop stand to raise your laptop and other monitors so the top pixel is at your eye level.

4. Despite all the demands being placed upon your time right now, do what you can to ensure that you get adequate physical activity. We tend to underestimate the physical activity we get simply by going to work – walking from the car into the co-op's office, taking a walk from our desk to the bathroom or break room (which are likely farther from our workspace at the cooperative than they are at home), and so on. When working at home, many of us will find ourselves sitting on a sofa, chair, or at our desks all day, sometimes rarely moving. This is detrimental to our physical and emotional wellbeing. Take a few minutes when needed to walk outside and get some fresh air; it will help to recharge your batteries.

5. Continue to maintain your relationships with coworkers using any means available – texting, email, phone, and videoconference. Our sense of connection with our coworkers is a key driver of job and life satisfaction and working remotely can harm it. If anything, over communicate with your teammates. It's easy to miss out on what's happening in these busy times when you are not present at the office.

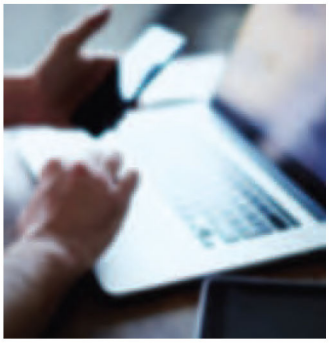
6. If possible, work in intense, uninterrupted bursts. If your job allows it, try to compartmentalize your day into clearly defined "work" segments, "family" segments, "chores" segments, and so on, even if those segments are short. Research has shown this approach to yield far more productivity. We realize, of course, that trying to balance work and family demands while children are home from school is a monumental effort. We have spoken with couples who are working from home and caring for children who have created shifts for themselves where one spouse is working intensely on work-related matters while the other is tending to the children, and then they trade off. Clearly, there is no "one size fits all" solution to this. The larger point is to simply do what you can to carefully compartmentalize your time so you can give your full attention to the multitude of tasks you're now required to complete in each day.

7. It's going to be difficult, especially if children are at home right now, but isolate yourself to work intensely, even if it's only for short periods of time. This will significantly improve your productivity.

APPENDIX C

8. You have to be very strategic about how you invest your time right now. Talk with your supervisor to set clear expectations about the most important tasks you perform, what can be deferred until later, and what absolutely must get done despite the crisis we find ourselves in. It is important to keep a punch-list of items that must be accomplished to help you prioritize and track your tasks.

9. Be patient with – and forgiving of – your peers, as well as those in supervisory, managerial, and leadership positions. These are tough times for all of us. Your peers and those in supervisory, managerial, and leadership positions at the co-op are being challenged to keep all the balls in the air just like you are. And, like you, they are worried about the future, their families, and their finances. Now is the perfect time to practice patience and forgiveness.



TEC 2020

DEVELOP TALENT. HONE SKILLS.

HANDOUT

Tips for Staying Productive and Happy While Working Remotely

1. Routine: Go through normal morning routines regarding waking time, breakfast, dressing as you would for work, etc., if possible. Routines will help retain some sense of normalcy in your day.

2. Lighting: Add extra lighting to your home workspace, if possible. Better yet, position your workspace near a window. Research is clear that brightly lit workspaces, especially when the lighting is natural light, boosts moods and productivity and enhances sleep quality.

3. Physical Activity: We tend to underestimate the physical activity we get simply by going to work—walking to and from car into the co-op's office and taking a walk from our desk to the bathroom or break room. While working from home, many sit on the sofa, in a comfy chair or at a desk all day rarely moving. This is clearly detrimental to physical and emotional well-being.

4. Relationships: Maintain relationships with coworkers using any means available—texting, email, phone and videoconference. A sense of connection with coworkers is a key driver of job and life satisfaction, and working remotely can harm it.

5. Schedule Work Hours: If possible, work in intense, uninterrupted bursts. If your job allows it, try to compartmentalize your day into clearly defined work, family and chore segments even if those segments are short. Research has shown this approach to yield far more productivity.

6. Reality of Multitasking: Realize that very, very few people are good at multitasking. This makes compartmentalization even more important. Research shows that, when we switch back and forth between tasks, part of our mind remains working on the previous task, and that reduces the quality of our work.

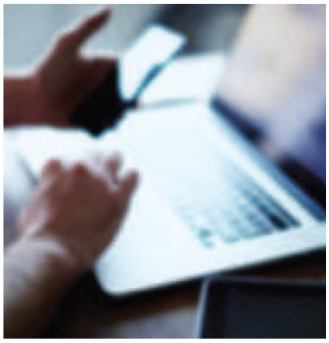
7. Priorities: Be strategic about how time is spent. Talk with your supervisor to set clear expectations about the most important tasks you perform, what can be deferred until later, and what absolutely must get done despite the crisis we find ourselves in.

8. Your Value: If you are concerned about whether you're making a good enough contribution to the co-op's success, talk with your supervisor about it. Let him or her know that you want to be of maximum value during this crisis.

9. Be Patient: These are tough times for everyone. Your peers and those in supervisory, managerial and leadership positions at the co-op are struggling to keep all the balls in the air—just like you. Now is the perfect time to practice patience and forgiveness. Be sure to ask for their patience and forgiveness with you as well.

10. Ask for Help: If you are struggling to deal with all the disruptions life is throwing at you right now—as many people at co-ops around the country are—get the help you need. If your cooperative has an employee assistance program (EAP) or helpline, do not hesitate to use it. Or, talk with your supervisor, a co-op leader, or someone in HR to get the help you need. You don't have to face today's challenges alone.

For additional resources visit GreatCoOps.com



TEC 2020

DEVELOP TALENT. HONE SKILLS.

HANDOUT

Top Six Leadership Tips During COVID-19

Your employees are relying on your leadership skills now more than ever. The team at GreatCo-Ops suggests that you focus on the following leadership approaches during this challenging time.

1. Safety Culture

Pay more attention than ever to your safety climate. Your employees are distracted by worries, and this leads to significant additional safety risk.

2. Employee Assistance Programs

Ensure that you have a quality employee assistance program and that it is marketed to your employees very well. Encourage them to use it if they feel the need. De-stigmatize the use of it as best you can.

3. Consistent Communication

Communicate at least every other day in these early days with your entire workforce about your co-op's responses to the virus. Be sure to convey your thanks for the sacrifices they are making. Acknowledge the uncertainty and anxiety we are facing as a nation, while also communicating messages of hope and optimism. (This is a fine line to walk; you must be realistic, yet hopeful in your message.)

4. Stay Connected

Reach out to your direct reports at least weekly inquiring about how they are doing, asking about their families, and offering support and encouragement. Ask them to do the same with their direct reports to push this approach down the hierarchy.

5. Trust

Give your employees the benefit of the doubt regarding flexible work schedules. The compassion you show now will come back to you in the form of employees who appreciate you and the co-op more than ever.

6. Self-Care

Do NOT forget to take care of yourself and your loved ones.

For additional resources visit GreatCoOps.com

This page intentionally left blank

United Cooperative Services

Your Touchstone Energy® Cooperative

ESSENTIAL EMPLOYEE:

March 24, 2020

TO: LAW ENFORCEMENT, PUBLIC SAFETY & SECURITY PERSONNEL
RE: ESSENTIAL PERSONNEL, CRITICAL INFRASTRUCTURE/ELECTRIC UTILITY SERVICES

The individual bearing this letter is essential staff of United Electric Cooperative Services, Inc., an electric distribution utility providing electricity delivery service to 61,000 member-consumers at 90,000 meter locations in 14 North Texas counties. Counties served include: Johnson, Erath, Hood, Bosque, Somervell, Palo Pinto, Coryell, Eastland, Comanche, Stephens, Young, Hamilton, Tarrant and Ellis counties.

This individual's work—as defined by the National Cybersecurity and Infrastructure Agency (CISA), and due to its essential need of providing electricity delivery services over 11,000 miles of distribution line in the aforementioned 14 counties—is exempted from all sheltering or stay-at-home orders/directives as a result of the COVID-19 virus.

The status of the individual bearing this letter can be verified by calling Heather Wigington, Manager of Human Resources, at 817.782.8318.

Sincerely,

Cameron Smallwood
CEO/General Manager
United Cooperative Services

United Cooperative Services

UNITED COOPERATIVE SERVICES

EMERGENCY FAMILY AND MEDICAL LEAVE EXPANSION REQUEST FORM

Pursuant to the **Emergency Family and Medical Leave Expansion Act**, I hereby request Emergency Family Medical Leave for a qualifying need.

Employee Name: _____

The date on which my leave will begin is (Start Date):_____

The anticipated duration of the leave will be (Return Date): _____

I certify that I am unable to work (or telework) due to a need to care for my child who is under the age of 18 because their school or place of care has been closed, or their child care provider is unavailable due to a public health emergency.

I understand that all time taken under the Emergency Family and Medical Leave Expansion Act will count towards and does not duplicate the overall 12-week limit on existing FMLA coverage during the applicable 12-month period.

Employee Signature _____ Date _____

Supervisor Signature _____ Date _____

Human Resource Signature _____ Date _____

Assistant GM/COO Signature _____ Date _____

Note: Please attach documentation supporting the need for expanded FMLA (examples: a notice that has been posted on a government, school, or day care website, or published in a newspaper, or an email from an employee or official of the school, place of care, or child care provider).

The first 10 days of Emergency family leave will be unpaid unless you elect to substitute accrued vacation leave, personal leave or sick leave. Employees have the option to take time available under the Emergency Paid Sick Leave Act.

HOLD UP A MINUTE, FOLKS!

IT'S A SIGN OF THE TIMES!

FOR THE SAFETY OF UNITED EMPLOYEES AND THE GENERAL PUBLIC, IF YOU ARE ILL OR HAVE EXPERIENCED THE FOLLOWING:

Fever, cough or other respiratory symptoms; and/or traveled within the past 14 days to an area with **confirmed COVID-19 cases**; and/or have **known exposure to someone diagnosed with COVID-19** (coronavirus); then **PLEASE** utilize our night drop facilities, drive-thru facilities (where available) or contact us via:

www.united-cs.com

www.united-cs.com

United Offices:

Cleburne	817-556-4000
Stephenville	254-965-3153
Granbury	817-326-5232
Meridian	254-435-2832
Burleson	817-447-9292
PK Lake	940-779-2985

Thanks, with perseverance and God's blessings we will be able to put all this behind us…soon!

United Cooperative Services
Pandemic Leave Request Form

This form is intended for temporary use due to pandemic conditions. It may be updated or terminated at any time.

Employee Name_____ Employee No. _____

United Leave

Requested time off:_____

Total sick leave hours to be used during requested time off: _____

Total vacation leave hours to be used during requested time off: _____

Total unpaid leave hours to be used during requested time off: _____
(Must exhaust all available sick leave and vacation leave hours)

Justification for requested time off (attach detailed memo if necessary)

_____

_____

_____

Families First Coronavirus Response Act (FFCRA) Emergency Paid Sick Leave

Requested days off:_____

Employee-related sick leave hours requested:_____

Family-related sick leave hours requested: _____

Justification for requested time off (attach documentation supporting the need for leave)

_____

_____

_____

Employee Signature _____ Date _____

Supervisor Signature _____ Date _____

Human Resource Signature _____ Date _____

Assistant GM/COO Signature _____ Date _____

United Cooperative Services

ESSENTIAL CONTRACT EMPLOYEE OF: ACRT, INC.

March 24, 2020

To: LAW ENFORCEMENT, PUBLIC SAFETY & SECURITY PERSONNEL

RE: ESSENTIAL CONTRACT EMPLOYEE, CRITICAL INFRASTRUCTURE/ELECTRIC UTILITY SERVICES

The individual bearing this letter is the employee of an essential contractor for United Cooperative Services, Inc., and electric distribution utility providing electricity service to 61,000 member-consumers at 90,000 meter locations in 14 North Texas counties. The counties served by United Cooperative Services include: Johnson, Erath, Hood, Bosque, Somervell, Palo Pinto, Coryell, Eastland, Comanche, Stephens, Young, Hamilton, Tarrant, and Ellis counties.

As a contract employee for United this individual's work - as defined by the National Cybersecurity and Infrastructure Agency (CISA), and due to its essential need of providing electricity delivery services over 11,000 miles of distribution line in the aforementioned 14 counties – is exempt from all sheltering or stay-at-home orders/directives as a result of the COVID-19 virus.

The status of the individual bearing this letter can be verified by calling myself at 254.918.6127, or United's Contract Coordinator, Mark Buckner at 817.556.4066.

Sincerely,

Quentin Howard
Senior Vice-President of System Engineering

Appendix D

How to apply for Families First Coronavirus Response Act (FFCRA) leave:

- Review FFCRA Employee Rights poster to determine if you have a qualifying reason for Emergency Paid Sick Leave or Emergency Family and Medical Leave.
- If you have a qualifying reason for Emergency Paid Sick Leave (up to 80 hours):
    - Notify your supervisor and HR of event for approval
    - Complete the Pandemic Leave Request Form and submit to Human Resources with supporting documents
    - Keep HR and your supervisor updated on leave status daily
- If you have a qualifying reason for Emergency Family and Medical Leave (up to 12 weeks):
    - Notify your supervisor and HR of event for approval
    - Complete the Emergency FMLA Request form and submit to Human Resources with supporting documents
    - Keep HR and your supervisor updated on leave status daily
- Supervisors: when keying time please use the earnings code in IXP applicable to either COVID-19 sick leave or Covid-19 FMLA

ESCC

Electricity Subsector Coordinating Council

Pandemic Mutual Assistance Checklist

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

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

This checklist may be used when providing mutual assistance for outage incidents during the COVID-19 pandemic. It also may be used when providing mutual assistance if a host organization is so impacted by COVID-19 cases that it is not able to conduct normal daily operations without assistance.

Work Practices

- ☐ Responding crews should follow their organization's policies and procedures, and each crew member is asked to complete a COVID-19 Questionnaire before traveling to the host organization. (See COVID-19 Mutual Assistance Questionnaire.)

- ☐ Host investor-owned electric companies, public power utilities, and electric cooperatives should minimize movement of crews to different regions in their territory. By assigning the same crews to the same work areas, cross pollination and potential exposures are limited. Note, this may require organizations to need additional resources and could impact restoration times.

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

- ☐ When information is available, host investor-owned electric companies, public power utilities, and electric cooperatives should avoid sending responding crews into areas with significant COVID-19 outbreaks. The host company should restore in those areas.

- ☐ When information is available, the host organization should provide full situational awareness of the COVID-19 impact, the number of cases in the community (or region), and what protective measures are in place to responding crews and their organization, with regular updates.
- ☐ Host investor-owned electric companies, public power utilities, and electric cooperatives should clarify how long they expect responding crews to be in their area.
- ☐ Host organizations should identify a liaison who can work with each responding entity to provide information about local conditions. Consider providing this information in advance of receiving responding crews.
- ☐ Host organizations should try to minimize person-to-person contact for material distribution and use drop points.
- ☐ Host organizations should use technology for onboarding and briefings (e.g., online conferencing services, conference calls) or conduct briefings in the field to reduce large meetings. Have safety onboarding on videos that can be distributed to crews in advance, with conference calls for Q&A. Conduct daily briefings remotely where feasible.
- ☐ If practicable, pre-staging should be avoided unless the threat is imminent.
- ☐ Host organizations should look for opportunities within the restoration process to execute the function remotely [dispatching functions, advanced metering infrastructure (AMI) functionality, assessment, etc.].

General COVID-19 Safety Practices

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

Staging Sites

- ☐ Instead of large staging sites, host organizations should consider having multiple, smaller staging sites to limit contact with/exposure to crews. Design smaller staging sites to allow CDC distancing recommendations to be followed (currently 6 feet of distancing at all times). Note: this may require organizations to request more self-sufficient resources, such as crews from investor-owned electric companies, public power utilities, and/or electric cooperatives rather than contractors.

- ☐ Cleaning supplies, hand sanitizer, sanitation supplies, etc. should be available for all crews located at staging areas.

Lodging and Meals

- ☐ Host organizations should establish lodging and dining sites where social distancing can be established, and the host can manage and control access and direct sanitation.
    - This can include appropriately sized sleeper trailers, tents, renting out entire hotels/motels, or nontraditional spaces for crew-only use.
    - Keep crews that are working together in the same lodging and dining facilities.
    - Have a plan for feeding crews in the event restaurants are closed by government order.
    - Have lodging, dining, and common areas cleaned following CDC guidelines. (See CDC Recommendations.)
    - Cleaning supplies, hand sanitizer, sanitation supplies, etc. should be available for all crews located at all lodging and meals areas.
    - Provide laundry service, if needed.
    - Minimize travel in large vehicles such as buses by having crews use trucks for transportation between lodging and work sites.
    - Have vehicles cleaned following CDC guidelines. (See CDC Recommendations.)
    - Try to minimize exposure by providing box lunches, snacks, water, etc.

External Outreach and Communication

- ☐ Host organizations proactively should communicate to regulators and government partners that power restoration and recovery may be slower due to the new response regime. Establish and disseminate information to customers that travel and restoration times may be longer.

- ☐ Host organizations proactively should communicate with customers about social distancing efforts. Ensure responding crews have consistent messaging and practices.

Health Issues

- ☐ Host organizations and responding crews should utilize the COVID-19 Visitor Questionnaire to evaluate health risks. (See COVID-19 Visitor Questionnaire.)
- ☐ Workers' temperatures should be taken daily. If a worker has a temperature above 100.4 F, he/she should be removed from the workforce and should follow CDC guidelines on what to do if you are sick. (See CDC Recommendations.)
- ☐ Workers who become ill should follow CDC guidelines. (See CDC Recommendations.)
- ☐ Workers should minimize the use of currency and use credit cards instead to avoid hand-to-hand contact.

Current as of March 19, 2020

CDC Recommendations

Interim Guidance for Business and Employers:
https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html

Cleaning and Disinfection Recommendations:
https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/cleaning-disinfection.html

What to Do If You Are Sick:
https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/steps-when-sick.html

Guidance for Large Events:
https://www.cdc.gov/coronavirus/2019-ncov/community/large-events/index.html

Appendix E

COVID-19 Mutual Assistance Questionnaire

Updated as of 03/19/2020

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

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

SELF-DECLARATION BY VISITOR

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

□ Yes □ No

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

□ Yes □ No

Have you been in close contact with anyone who has traveled within the last 14 days to one of the countries listed as a level 3 or higher travel/health advisory by the CDC for Covid-19?

□ Yes □ No

Have you experienced any cold or flu-like symptoms in the last 14 days (to include fever of 100.4 degrees F or higher, dry cough, difficulty breathing, or shortness of breath)?

□ Yes □ No

Have you or any member of your household traveled on a cruise ship within the last 14 days?

□ Yes □ No

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

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

Signature (Visitor): _____ Date:_____

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

Please complete and return this form electronically to: POC

ACCESS TO FACILITY (circle one): APPROVED DENIED

This page intentionally left blank

Appendix F

Pandemic Communication Example

The Following is from ERCOT's Plan – we could replace it with a sample of Cameron's emails, or modify it to fit us?

ERCOT plays a critical role in supporting our community and state infrastructure. There is no room for complacency when it comes to dealing with the H1N1 Swine Flu virus.

ERCOT Pandemic Directive:

1) Employees and Contractors who travel by air in the U.S. and Overseas should closely monitor their health for 7 days after returning from their trip. If you become ill with flu-like symptoms, stay home and seek medical attention.

2) As a precautionary step, ERCOT will collect information from Employees and Contractors that have traveled outside of the United States. Please be assured that these are precautionary steps with respect to the H1N1 situation. Use the Travel Log Form (located on the Environmental Health and Safety SharePoint site) to submit travel information. If you do not have access to the on-line form, please complete a travel log form at any one of the Security Control Stations.

3) All Visitors will be asked if they have traveled outside the United States within the last 3 weeks and if so are required to complete an International Travel Visitors Log.

4) **Sick Employee or Contractor** – With flu-like symptoms including fever or chills and cough or sore throat. Other symptoms can include runny nose, body aches, headache, tiredness, diarrhea, or vomiting.
   a) Any Employee or Contractor should be alert to any signs of fever and any other signs of flu-like illness before reporting to work each day. Notify your ERCOT manager and stay home if ill. An Employee/Contractor who is ill should not travel while ill. The Employee/Contractor with flu-like symptoms and fever should stay home until at least 24 hours after they no longer have a fever (100 degrees Fahrenheit or 38 degrees Celsius) or signs of a fever (have chills, feel very warm, have a flushed appearance, or are sweating). This should be determined without the use of fever-reducing medications (any medicine that contains ibuprofen or acetaminophen).
   b) Any Employee or Contractor who become ill with symptoms of a flu-like illness during the work day should notify their ERCOT Manager. The individual will be:
      i) Separated from other workers and asked to go home promptly.
      ii) If the individual cannot leave promptly and if the individual with flu-like symptoms can tolerate it, they will be given a surgical mask to wear while they wait to go home if they cannot be placed in an area away from others.

5) **Sick member in your household –**
   a) An Employee/Contractor who is well but who have an ill family member at home with flu can go to work as usual. These individuals should monitor their health every day, and notify their Manager and stay home if they become ill.
   b) An Employee/Contractor who needs to stay home to care for an ill family member can work an alternative work schedule with their Manager's approval if the position allows it. Options include a telecommuting work schedule or flexible hours.

6) **Casual contact with a sick individual –** Any Employee or Contractor who has come in casual contact, including conversation or physical contact, with a sick individual should monitor themselves for symptoms of flu-like illness and stay home if they become sick.

7) If schools are closed in our area and you need to stay home with your children, Managers may be able to accommodate Employees by allowing work from home or flexible work times if the position allows. In the event that work cannot be done remotely or at flexible hours, Employees may be required to utilize sick or vacation hours. Please work with your Manager and HR.

8) If you have any questions please discuss with your Manager or HR.

Note: There are no restrictions on business or non-essential travel due to the H1N1 flu virus at this time.

Remember: The rule of thumb for flu pandemics is that they will infect one-third to one-half the population; not all at once, but over a span of two years. **The typical pattern is intense local epidemics that last 6–8 weeks and then move on, often returning two or three times before the pandemic is over.** Before winter arrives, U.S. Officials hope to have a vaccine that they can at least offer to people in high-risk groups.

Being prepared is Key:

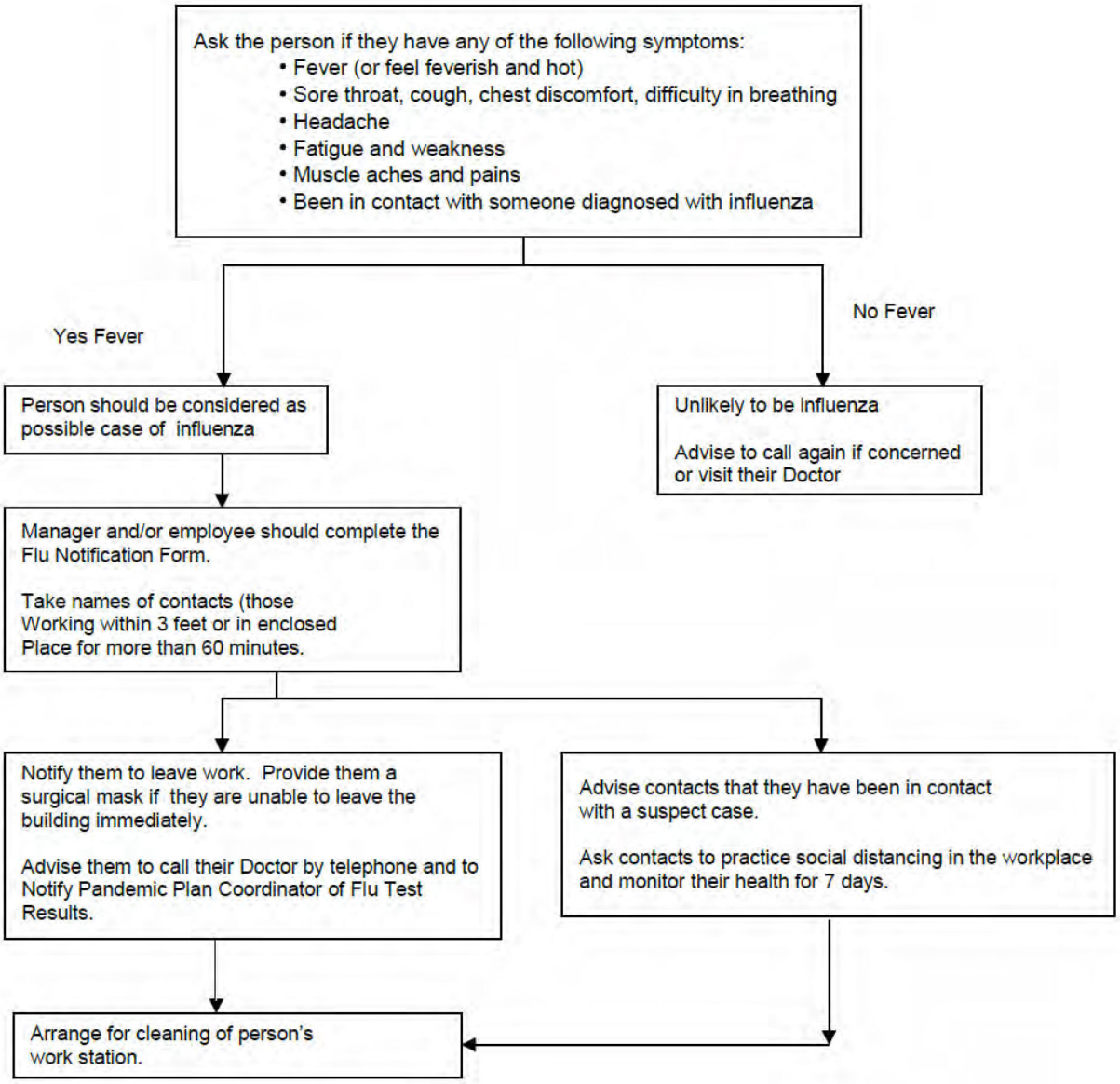
- Stay informed by visiting www.flu.gov and the Environmental Health and Safety SharePoint Site
- Review ERCOT Pandemic Plan Overview
- Take action to prepare using the Pandemic Planning Checklist for Individuals and Families

Appendix G
Screening Checklist for Detection and Management of Suspected Pandemic Influenza Cases

Process

1) The ERC, Staff, or HR receives a call from a person or their Manager suspecting they may have an influenza case
2) Do not visit the person if this can be avoided - manage the process over the telephone
3) Follow the flowchart below:

Screening Flowchart



Appendix H
Pandemic Supplies Inventory and Locations

Item #	Cabinet Contents	Area A	Area B	Area C	Area D	Area E
1	Safety Glasses - 1 pair					
2	Poster 'Stop - Do you feel sick' Laminated					
3	Thermometers - 3 1/2" disposal single use					
4	Gloves - Ndex Nitrile, one box, size large					
5	Booklets - Pandemic Influenza					
6	Hand Sanitizer - 2-12 oz. Purell pump bottles					
7	Dust Masks - Wilson light duty - 2 boxes/50 ea.					
8	N95 Particulate Respirators - Alpha Protech 1 box/35 ea.					
9	3M Particulate Respirators no Latex, #860 1 box/20 ea.					
10	Flat Duck Bill respirators M9410-FM20-N95 1 box/20 ea.					
11	Clorox Disinfecting Wipes - 2 containers/35 wipes ea.					
12	Pandemic Envelope					

Pandemic Envelope Contents:

1) Do you feel sick? Stop poster for building entrance door.
2) Mask instructions:
   a) Wilson Light Duty Dust Masks – Before use, have wearer review OSHA Personal Protective Equipment 1910.134 Appendix D card.
   b) 3M 1860 Mask – Before use, have wearer read and understand user instructions.
   c) Alpha Pro Tech N-95 Particulate Respirator – Before use, have wearer read and understand Donning Instructions.
   d) Flat Duck Bill Respirator Mask M9410-FM20 N-95 – Before use, have wearer review instructions that come in package with mask.
3) Last ERCOT Directive (Effective date: 8/31/09)
4) Pandemic Planning Supplies Inventory List (supplies stock in Taylor Portable A)
5) OSHA Quick Card – How to Protect Yourself in the Workplace during a Pandemic

ESCC

Electricity Subsector Coordinating Council

Assessing and Mitigating the Novel Coronavirus (COVID-19)

A RESOURCE GUIDE

Version 5: Updated April 16, 2020

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

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

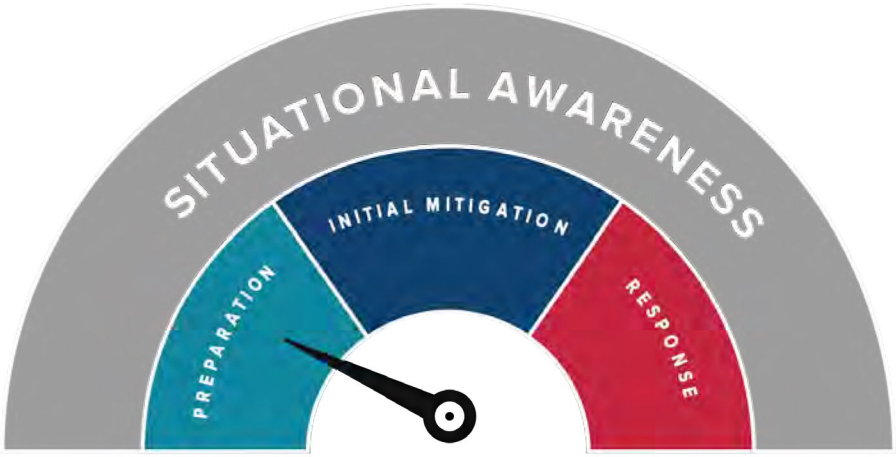
This document is a resource for electric power industry leaders to guide informed localized decisions in response to the COVID-19 global health emergency. It highlights data points, stakeholders, and options to consider in making decisions about operational status, while protecting the health and safety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

Sharing practices and expertise will allow participants to make better-informed independent, localized decisions that will help reduce the negative impacts to the country's electric power supply during the COVID-19 global pandemic. The ESCC and its members are committed to complying fully with all applicable federal and state antitrust laws. The activities of the ESCC are not intended, and do not constitute an agreement, to influence markets or prices for goods or services.

This document will evolve as public health officials and other government sources provide additional data and more is known about COVID-19.

Table of Contents

Appendix I



Stages of COVID-19 Mitigation and Response

Situational Awareness

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

- COVID 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
- 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 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 Electricity Subsector Coordinating Council (ESCC)

Preparation

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

- Increasing hygiene measures
- Planning for all employee telework
- Planning for sequestering at critical facilities
- Assessing stockpiles of critical materials, including food, personal protective equipment (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 companies, electric cooperatives, and public power utilities should consider:

- Increasing hygiene measures
- Instituting non-essential employee telework and continue planning for all employee 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 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 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 considering loss of workers, facilities, and critical vendors and possibly technology.
- Establishing a cross-functional team to identify roles and responsibilities for stakeholder engagement and 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 the HR/ legal considerations are.

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 should the self-quarantine 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

- 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 what the basic daily cleaning requirements are 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?

Appendix I

COVID-19 Access Considerations

This document 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 three sections:

- Guidance before entering a home/building with known or suspected COVID-19 contamination.
- Guidance to consider 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.
- Guidance for 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. *(See Q&A on using a respirator.)*

- 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-monitoring 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.

- After the work is completed, refer to CDC and OSHA for proper handling and disposal of contaminated PPE. OSHA issued specific guidance on COVID-19, which can be found on-line at:

  https://www.osha.gov/Publications/OSHA3990.pdf

- 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:

  https://www.ncsl.org/research/health/state-quarantine-and-isolation-statutes.aspx

- Decisions to restrict access generally are made by local governments. Note, those decisions likely will be made 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 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 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 they 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:

  https://www.cisa.gov/publication/guidance-essential-critical-infrastructure-workforce

- 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 the coronavirus 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:

    https://www.cdc.gov/coronavirus/2019-ncov/prepare/transmission.html
  - Notify the employees who came in contact with 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:

    https://www.cdc.gov/coronavirus/2019-ncov/prepare/disinfecting-building-facility.html

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.

- For visibility, the Department of Defense (DoD) has released some department-wide guidance, which can be found online at:

  https://www.defense.gov/Newsroom/Releases/Release/Article/2121122/partnering-with-the-us-defense-industrial-base-to-combat-covid-19/

Additional Resources

Example Q&A for Using a Respirator for COVID-19 Mitigation

When do I need to wear a respirator?
A respirator (N-95 or higher-level) only should be used if you are entering a customer's premises where there is a confirmed or suspected COVID-19 case, and you cannot maintain 6 ft social distancing.

How do I get a respirator?
Contact your supervisor with justification to use a respirator. Your supervisor will arrange to get you a respirator after ensuring that you have been fit tested, medically cleared, and properly trained on the use of the respirator.

Do I need Medical Clearance and Fit Testing before wearing a respirator?
Yes, you must complete respirator medical clearance and fit testing within two years before use. Employees must be fit tested to all makes, models, and sizes of the respirator(s) to be used. Unless it has been waived by OSHA, an employee's medical condition must be evaluated before fit testing. There are different N95 respirator models that may be in use in the company – you must be fit tested for the model you will be using. (NOTE: Some safety procedures require OSHA-approved training on the use of PPE prior to entering a hazardous environment. A respirator cannot protect an employee if he/she does not know how to use it properly. Check with your company policy and follow any training requirements.)

What types of respirators are effective against COVID-19?
Disposable respirators (also known as N95 respirators), half-face respirators, and full-face respirators. All respirators must be NIOSH approved. Class and stock details are provided at the end of this Q&A.

How do I use an N95 respirator correctly in a COVID-19 situation?
Follow this N95 Respirator use guidance:

- Use hand hygiene/sanitation when donning and doffing.
- Use a pair of clean latex or nitrile gloves when donning an N95 respirator and performing a user seal check. Employees should understand that beards and other facial hair may reduce the effectiveness of a respirator substantially.
- Discard gloves after donning and making any adjustments to ensure the respirator is sitting comfortably on your face with a good seal.
- Avoid touching the inside of the respirator.
- Inspect the respirator again after cleaning.
- Contact lenses may be worn; however, the employee must have experienced success in wearing contact lenses with a respirator. Consider the environment before doing so

Can I reuse an N95 respirator?
Yes. You may reuse an N95 respirator. As with any respirator, inspect it before each use and ensure all components of the respirator are intact, and perform a user seal check. Reuse can be done for up to one shift, as long as the N95 was used as per above guidance. Filtering facepiece respirators can be reused by the same worker, but ***only*** if the respirator is working properly, its shape remains unchanged, and the filter material is not physically damaged or soiled.

How do I store and dispose of an N95 respirator?
A: Store respirators in a bag labeled with your name. Dispose of the storage bag after each use. Discard spent gloves, respirators, and storage bags as regular trash.

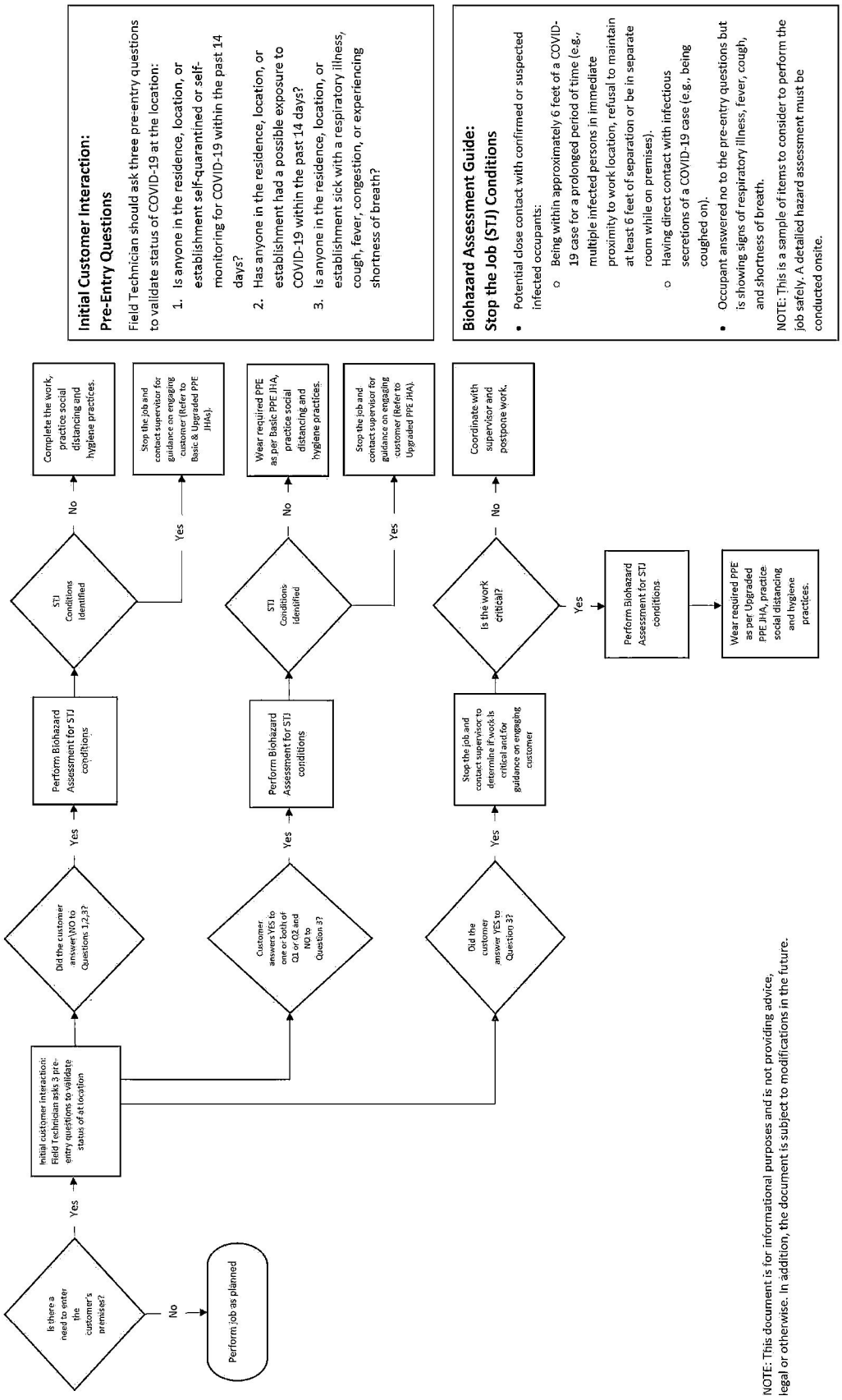
Can I use half-face and full-face respirators instead of N95 respirators?
Yes. If N95 respirator supplies are low, you can use half- or full-face respirators with P100 magenta cartridges, which will provide adequate protection. Follow all donning and doffing, hand hygiene, storage, and disposal procedures described above. Half- and full-face respirators may be reused if they pass the pre-use inspection.

What cleaning instructions apply to half- and full-face respirators?
Half- and full-face respirators must be cleaned using an approved towelette or cleaning solution after each use. Wipe down all surfaces of the respirator, including the cartridges.

What do I do if my respirator is damaged?
Do not use any damaged equipment. Discard all damaged respirators and components and request a new one from your supervisor.

Additional information from OSHA respiratory protection standards can be found at:
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134

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.

Appendix I

Control Center Continuity

Updated: April 16, 2020
Changes since last version are highlighted in red

This document 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 document develops credible scenarios that could impact control center operations, identifies mitigation options, supports information sharing across the industry, and 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 comparable 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 populace-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. *(This issue was addressed by FERC/NERC 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). *(This issue was partially addressed by FERC/NERC 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:

    https://www.eeoc.gov/facts/pandemic_flu.html
  - NERC temporarily should suspend regional entity audits of all registered entities. *[This issue was partially addressed by FERC/NERC on 3/18/20.]*

Identifying Critical Control Center Personnel (UPDATED)

The personnel needed to staff the control centers of electric transmission and distribution facilities, ~~generation 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 organization, but a more uniform approach to categorizing staff will support the communication of likely areas of government support at the local, state, and federal levels.

Specific to energy grid operation, each organization has employees who fit into two categories: Control Room Operators and Direct Support Personnel. Each of these categories can be broken down into individuals who can perform their functions remotely, and those who must be physically present at their control center workstations in order to perform their required duties. For the purpose of 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:

https://www.electricitysubsector.org/-/media/Files/ESCC/Documents/ESCC_Mission_Essential_Workforce_2020.ashx?la=en&hash=7618009ED20A06A987105A0817A180202406AFDF

Scenario Development

Given the extensive work within the electric industry to develop business continuity plans supported by redundant physical and IT infrastructure, many organizations already have taken steps to utilize their ability to operate from more than one location. Accordingly, the emphasis now 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 (UPDATED)

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, and 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.
- 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 work-station (e.g., desk, peripherals, communication devices, hard-chairs, etc.) with disinfectant products with EP-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 on-line at:

   https://www.cdc.gov/coronavirus/2019-ncov/prepare/disinfecting-building-facility.html

- 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.

  ~~1. Shelter-in-place: State directive to operate/reside within the location (building) one currently is located.~~

  ~~2. Sequestration: Protective sequestration involves physical isolation to protect a healthy population from a pandemic. Requires a degree of certainty that the population is healthy via testing, rather than an assumption of health, lest the entire sequestered employee population is compromised.~~

3. ~~Quarantining: A state of physical isolation due to potential exposure prior to reintroduction into a healthy employee population.~~

- 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:

  https://www.eisac.com/portal-home/cyber-bulletin-detail?id=123891

- Organizations should anticipate and prepare for coronavirus-themed opportunistic social engineering attacks. Spearphishing, 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.
- ~~Organizations should consider declaring CIP Exceptional Circumstance to the extent necessary if staffing levels are reduced to a minimum level as a mitigation strategy.~~
- 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:

  https://www.cdc.gov/coronavirus/2019-ncov/community/critical-workers/implementing-safety-practices.html

- 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 with 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.

~~The Control Center Continuity Working Group is continuing to develop mitigation strategies for this scenario, which may include leveraging mutual assistance networks, identifying retired or relocated qualified control center personnel, or pursuing on-the-job training for new control center personnel. Additional mitigation strategies can be found in the "Sequestration Experiences from the Industry" and "Mutual Assistance for Control Center Operators" sections of this Resource Guide.~~

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.

~~As noted in the strikethrough below, 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.
- ~~Vending services should be shut down, and food and drinks for quarantined staff brought in as individually wrapped items.~~

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.
- ~~Food and drinks for sequestered staff should be brought in as individually wrapped items.~~
- 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 (NEW)

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 can't staff its control center, which can be found online at:

https://www.nerc.com/news/Pages/NERC%20Publishes%20FAQs%20About%20Joint%20NERC-FERC%20Industry%20Guidance%20for%20COVID-19.aspx

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 (UPDATED)

Control center personnel working in close proximity for extended periods proactively can be isolated in order 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, which is currently doubling the number of confirmed cases every 3-5 days or more frequently in some areas, 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 give consideration to 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.

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 taken steps rapidly 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 in order 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

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
- 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
- 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 Information Technology (IT) and Operations Technology (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 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 proactively should consider remote training options to begin familiarizing and training potential mutual assistance resources to advance their knowledge of grid topography, specialized system operating knowledge, and EMS tools.
- **Limitations Based on Qualification or Certification:** In all but the most extreme circumstances, the functions that either an internal or external mutual assistance resource could perform would be limited and could include non-control functions, like monitoring, data analytics, or compliance documentation, among others. Additionally, it should not be assumed that all certification requirements will be lifted for every position, even in a black sky event.

Additional Resources

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

Federal Energy Regulatory Commission

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

March 18, 2020

News Media Contacts

FERC: Mary O'Driscoll mary.odriscoll@ferc.gov

NERC: Kimberly Mielcarek

Kimberly.mielcarek@nerc.net

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

The Federal Energy Regulatory Commission (FERC) and the North American Electric Reliability Corporation (NERC) announced today they are taking steps to ensure that operators of the bulk electric system can focus their resources on keeping people safe and the lights on during this unprecedented public health emergency.

FERC and NERC are using regulatory discretion to advise all registered entities that they will consider the impact of the coronavirus outbreak in complying with Reliability Standards as follows:

- The effects of the coronavirus will be considered an acceptable basis for non-compliance with obtaining and maintaining personnel certification, as required in Reliability Standard PER-003-2, for the period of March 1, 2020 to December 31, 2020. Registered entities should notify their Regional Entities and Reliability Coordinators when using system operator personnel that are not NERC-certified.
- The effects of the coronavirus will be considered an acceptable reason for case-by-case non-compliance with Reliability Standard requirements involving periodic actions that would have been taken between March 1, 2020 and July 31, 2020. Registered entities should notify their Regional Entities of any periodic actions that will be missed during this period.
- Regional Entities will postpone on-site audits, certifications and other on-site activities at least until July 31, 2020. Registered entities should communicate any resource impacts associated with remote activities to their Regional Entities.

FERC and NERC recognize the uncertainties regarding the response to and recovery from the coronavirus outbreak and will continue to evaluate the situation to determine whether to extend these dates. Our shared goal is to ensure all registered entities balance the concerns for the health and welfare of their workforce while staying focused on the mission of supplying power to consumers across North America.

(30)

FERC Acts to Prioritize Reliability, Provide Regulatory Relief

NEWS RELEASE

April 2, 2020

News Media Contact
Craig Cano | 202-502-8680
MediaDL@ferc.gov

Coronavirus Update: FERC Acts to Prioritize Reliability, Provide Regulatory Relief

The Federal Energy Regulatory Commission (FERC) today took action to prioritize reliability of the nation's energy infrastructure and to provide the public and regulated entities relief from certain Commission regulatory obligations during the national emergency from the COVID-19 outbreak. The Commission previously announced several pandemic response actions, including creating a single point of contact, PandemicLiaison@ferc.gov, to serve as a resource to the regulated community so that they can receive prompt responses to their questions from FERC staff.

"The reliability and security of our nation's vital energy infrastructure is critical to meeting the needs of the American people," FERC Chairman Neil Chatterjee said. "The entities we regulate are taking unprecedented actions in response to the emergency conditions. These proactive steps will ease regulatory burdens so that they can focus on continuity of operations and ensure reliable operation of their systems."

Policy Statement

First, today the Commission issued a Policy Statement providing regulatory guidance on energy infrastructure, market, reliability and security matters.

In response to the national emergency conditions, entities regulated by the Commission have taken unprecedented actions that may disrupt, complicate, or otherwise change their normal course of business operations. The Policy Statement acknowledges that these actions may create questions about entities' ability to meet regulatory requirements and/or recover the costs necessary to take steps to safeguard the business continuity of their systems.

The Policy Statement makes clear that the Commission will give highest priority to processing filings made for the purpose of assuring the reliable operation of energy infrastructure during this emergency and assures regulated entities that the Commission "will expeditiously review and act on requests for relief, including but not limited to, requests for cost recovery necessary to assure business continuity of the regulated entities' energy infrastructure in response to the national emergency."

The Commission also expressed support for the continued cooperation across industry and government to provide any additional safeguards necessary to ensure the reliable and secure operation of energy infrastructure.

(more)

Federal Energy Regulatory Commission | Washington DC 20426 | www.FERC.GOV

Regulatory Relief
In other action today, the Commission:

- Facilitated social distancing by approving a blanket waiver of requirements in Open Access Transmission Tariffs that require entities to hold meetings in-person and to provide or obtain notarized documents. The waiver will remain in place through September 1, 2020.
- Prioritized efficient processing of requests for waiver and other requests for relief made in response to the emergency conditions created by COVID-19 by:
    - Delegating authority to the Director of FERC's Office of Energy Market Regulation to act on uncontested requests for prospective waiver of certain regulatory obligations. This delegated authority is effective until June 1, 2020.
    - Approving an Instant Final Rule delegating authority to the Director of FERC's Office of Energy Policy and Innovation to act on motions for extension of time to file, or requests or petitions for waiver of the requirements of, FERC Form No. 552 (Annual report of Natural Gas Transactions) and FERC-730 (Report of Transmission Investment Activity).
- Extended the time period for Regional Transmission Operators and Independent System Operators to post all Uplift Reports and Operator Initiated Commitment Reports. The time period for all reports that otherwise would have been required to be posted between April 2020 and September 2020 is extended to October 20, 2020.

Supplemental Notice
The Secretary of the Commission today issued a supplemental notice granting extensions of time for certain non-statutory deadlines, waiving regulations and shortening answer periods for motions for extensions of time due to the pandemic emergency.

R-20-23

(30)

Mutual Assistance Considerations

Updated: April 16, 2020
Changes since the last version are highlighted in red

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

Pandemic Mutual Assistance Checklist (UPDATED)

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

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

This checklist may be used when providing mutual assistance for outage incidents during the COVID-19 pandemic. It also may be used when providing mutual assistance if a requesting organization is so impacted by COVID-19 cases that it is not able to conduct normal daily operations without assistance.

Organizations providing or requesting mutual assistance should follow the terms and conditions of their existing mutual assistance or mutual aid agreements.

Work Practices

- ☐ Responding crews should follow their organization's policies and procedures, and responding investor-owned electric companies, public power utilities, and electric cooperatives should work to minimize the chance of infected workers travelling. A responding organization may wish to use the COVID-19 Questionnaire with their employees before sending them to the requesting organization. *(See COVID-19 Mutual Assistance Questionnaire.)*

- ☐ Requesting organizations should minimize movement of crews to different regions in their territory. By assigning the same crews to the same work areas, cross pollination and potential exposures are

limited. Note, this may require organizations to need additional resources and could impact restoration times.

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

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

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

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

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

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

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

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

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

- ☐ Both requesting and responding organizations may want to consider screening of crews using non-contact thermometers before deployment and upon arrival to verify employees do not have fevers above 100.4 F.

- ☐ Organizations should encourage workers to report to supervisors situations where social distancing cannot be maintained so ways to mitigate can be explored.

General COVID-19 Safety Practices

- ☐ If you are sick or have any flu-/virus-like symptoms, report this immediately to your supervisor and consult your physician.

- ☐ Cover your coughs and sneezes with a tissue, then immediately throw the tissue in the trash.

- ☐ Wash your hands often with soap and water for at least 20 seconds, especially after going to the bathroom; before eating; and after blowing your nose, coughing, or sneezing.
- ☐ Avoid touching your eyes, nose, and mouth with unwashed hands.
- ☐ Regularly clean your phones and handheld devices as these are some of the dirtiest items we carry.
- ☐ Maintain social distancing whenever possible [six (6) feet distance from anyone coughing or sneezing]. Avoid shaking hands and touching others.
- ☐ Use "non-circulating mode" for vehicle air conditioning/heating/ventilation.

Staging Sites

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

Lodging and Meals

- ☐ Requesting organizations should establish lodging and dining sites where social distancing can be established, and the requesting organization can manage and control access and direct sanitation.
    - This can include appropriately sized sleeper trailers, tents, renting out entire hotels/motels, or nontraditional spaces for crew-only use.
    - Keep crews that are working together in the same lodging and dining facilities. However, consider ways to maximize social distancing, such as limiting rooms to one per person, keeping different companies on different floors, minimizing servicing of rooms, and having pickup locations for linens and room supplies.
    - Consider working with local authorities to develop exemptions from emergency closure and/or stay-at-home orders for hotels or other lodging facilities and their staff so they can serve mutual assistance crews.
    - Have a plan for feeding crews in the event restaurants are closed by government order.
    - Have lodging, dining, and common areas cleaned following CDC guidelines. *(See CDC recommendations.)*
    - Cleaning supplies, hand sanitizer, sanitation supplies, etc. should be available for all crews located at all lodging and meals areas.
    - Provide laundry service, if needed.

- Minimize travel in large vehicles such as buses by having crews use trucks for transportation between lodging and work sites.
- Have vehicles cleaned following CDC guidelines. *(See CDC recommendations.)*
- Try to minimize exposure by providing box lunches, snacks, water, etc.
- Companies should check with hotel operators to confirm preferred hotels will remain open for mutual assistance crews. If hotels currently are closed, verify the length of time necessary for operators to reopen hotels, which could delay access to lodging.

External Outreach and Communication

- ☐ Requesting organizations should proactively communicate to regulators and government partners that power restoration and recovery may be slower due to the new response regime. Establish and disseminate information to customers that travel and restoration times may be longer.
- ☐ Requesting organizations should proactively communicate with customers about social distancing efforts. Ensure responding crews have consistent messaging and practices.
- ☐ Requesting organizations should work with local and state officials to ensure responding crews are designated as critical workers and are able to travel to and through the requesting entity's service territory. Travel documents and authorizations from requesting organizations should be as specific and clear as possible.

Health Issues

- ☐ Requesting organizations and responding crews should utilize the COVID-19 Visitor Questionnaire to evaluate health risks. *(See COVID-19 Mutual Assistance Questionnaire.)*
- ☐ Workers' temperatures should be taken daily. If a worker has a temperature above 100.4 F, he/she should be removed from the workforce. The requesting organizations should coordinate with the employees' organization and follow CDC guidelines on what to do if you are sick. *(See CDC recommendations.)*
- ☐ Workers who become ill should follow CDC guidelines. *(See CDC recommendations.)*
- ☐ Workers should minimize the use of currency and use credit cards instead to avoid hand-to-hand contact.
- ☐ Follow CDC recommendations for when individuals infected with COVID-19 can discontinue home isolation and return to work. *(See CDC recommendations.)*
- ☐ Follow CDC recommendations on implementing safety practices for critical infrastructure workers who may have had exposure to a person with suspected or confirmed COVID-19. *(See CDC recommendations.)*

CDC Recommendations

Interim Guidance for Business and Employers:
https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html

Cleaning and Disinfection Recommendations:
https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/cleaning-disinfection.html

What to Do If You Are Sick:
https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/steps-when-sick.html

Guidance for Large Events:
https://www.cdc.gov/coronavirus/2019-ncov/community/large-events/index.html

Interim Guidance for Discontinuation of Home Isolation for Persons with COVID-19
https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-in-home-patients.html

Implementing Safety Practices for Critical Infrastructure Workers Who May Have Had Exposure to a Person with Suspected or Confirmed COVID-19
https://www.cdc.gov/coronavirus/2019-ncov/community/critical-workers/implementing-safety-practices.html

Appendix I

COVID-19 Mutual Assistance Questionnaire

Current as of 4/16/2020

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

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

SELF-DECLARATION BY VISITOR
Have you returned from any of the countries listed by the CDC as a travel/health advisory warning for Covid-19 Level 3 or higher in the last 14 days? Current list can be found here: https://wwwnc.cdc.gov/travel/notices □ Yes □ No
Have you returned from any of the states listed in the CDC domestic travel advisory within the last 14 days? Current list can be found here: https://www.cdc.gov/coronavirus/2019-ncov/travelers/map-and-travel-notices.html □ Yes □ No
Have you had close contact with or cared for someone diagnosed with COVID-19 within the last 14 days? □ Yes □ No
Have you been in close contact with anyone who has traveled within the last 14 days to one of the countries listed as a level 3 or higher travel/health advisory by the CDC for Covid-19? □ Yes □ No
Have you been in close contact with anyone who has traveled within the last 14 days to one of the states listed in the domestic travel advisory by the CDC for Covid-19? □ Yes □ No
Have you experienced any cold or flu-like symptoms in the last 14 days (to include fever of 100.4 degrees F or higher, dry cough, difficulty breathing, or shortness of breath)? □ Yes □ No

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

□ Yes □ No

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

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

Signature (Visitor): _____
Date:_____

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

Please complete and return this form electronically to: POC

ACCESS TO FACILITY (circle one): APPROVED DENIED

Generation Operational Continuity

Updated: April 16, 2020
Changes since the last version are highlighted in red

This document provides guidance to investor-owned electric companies, public power utilities, electric cooperatives, independent power producers, and federal government-owned utilities responsible for the safe and reliable operation of generation power plants and generation control centers during and throughout the COVID-19 pandemic. This document develops credible scenarios that could impact generation operations, identifies mitigation options, supports information sharing across the industry, and outlines needed government actions.

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

Governmental Support Needs (UPDATED)

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

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

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

- If local, regional, state, or federal governments enforce a populace-wide quarantine/curfew or other travel restrictions, ensure that operators of generating facilities still can move freely outside of hours.
- Request EPA and state level permitting agencies allow for non-compliance operations of generating facilities in the event sufficient resources or personnel are not available.

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

Identifying Essential and Critical Generation Personnel

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

Non-Nuclear Generation Personnel

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

- **Tier One – Essential Generation Employees**
  - Control Room Operators
  - Operator Technicians
  - Instrument and Control Technicians (I&C Techs)
  - Operations Supervisor/Team Leader/Shift Supervisors
- **Tier Two – Critical Generation Employees**
  - Chemical/Lab Technician
  - Maintenance (Mechanical, Electrical)
  - Materialman (Warehouse)

- Contractors – Ash Handling, Emergency Maintenance Repair, Critical Commodities, OEM
- Other Support – Engineer, Specialist, Accounting

Nuclear Generation Personnel

The Nuclear Regulatory Commission (NRC) and federal statutes have very specific reliability and security requirements for the operation of nuclear generating station. Therefore, as it stands, nuclear generation owners and operators are obligated to staff their plants as normally required.[1] Tier two employees are not required by the NRC, however, the loss of Tier two employees may result in insufficient support for plant operators over time. The job titles of these nuclear generation employees are:

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

Scenario Development (UPDATED)

Given the limited ability of generating facilities to be operated remotely, mitigating strategies and contemplation of other issues must be developed to ensure adequate generating facility availability and operation. The scenario contemplated incudes 40 percent workforce attrition, a nine-month pandemic, and no mutual assistance. This scenario will test the effectiveness of social distancing and quarantine and the need for proactive testing of priority employees (and/or essential contractors). Mitigating

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

strategies and other important considerations will be contemplated under the framework below. The mitigating strategies will attempt to represent existing industry and government policies, standards, and capabilities, as well as proposed actions going forward. Some entities have used this 40 percent workforce attrition scenario as the basis for designing plans to address COVID-19 reduced operations and have implemented these plans prior to the arrival of a positive test at generating plants. Early adoption of these reduced operation plans may minimize the impact to workforce attrition as the pandemic continues, while ensuring the ability to run facilities.

Possible Mitigation Strategies for Scenarios (UPDATED)

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

Universal Mitigation Strategies

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

- Do not allow outside visitors in control rooms or other designated protected areas (e.g., no tours or non-essential personnel from the same organization).
- Implement additional access restrictions, such as limiting visitors or non-essential meetings within spaces in proximity to control centers.
- Screen non-badged contractors/vendors with health questionnaire and temperature check before allowing on site for deliveries, repairs, etc., and limit access during this time to critical activities only.
- Segregate crews on shift work schedules. Split operators (days/nights) or split individual shifts.
- Cut back control room operators to a minimum.
- Ensure business continuity plans have clearly defined thresholds and procedures for initiating organization's shelter-in-place, sequestration, and self-quarantining of essential personnel.
- Sequester a complete healthy shift (if available) and hold that shift in reserve for extreme scenarios, such as when minimum staffing levels cannot be met.
- Develop a resource plan for potential use of retirees, supervisors, managers, engineers, and recently transferred operators with the requisite skills to backfill operators and support staff in the event staffing is reduced due to COVID-19 infections.
- Allow generating facility support staff (engineering, compliance, maintenance, etc.) to work remotely to the extent permissible within remote access and cybersecurity requirements of the organization.
- Ensure information and communications technology resources are appropriate to accommodate increased use of remote work arrangements consistent with business continuity plans, without compromising security. Consider conducting planned stress tests for these arrangements.
- Develop logistics to house operators on-site, including bedding, entertainment, and food accommodations.
- Identify alternate workstations outside of the control room that can monitor and possibly control all or a limited part of a generating unit. Alternate workstations can allow operators to monitor unit functionality while a "dirty" control room is cleaned and returned to service.
- Begin planning a 'return-to-work' protocol for mission-essential staff who test positive or who are exposed to COVID-19 and complete any required self-quarantine period. A protocol will be needed to integrate these employees back into shift. Use CDC guidance to determine the criteria (e.g., the length of time an employee needs to remain symptom free, if he/she is exposed at home, and what PPE should be mandated, etc.).
- Ensure workers wear face coverings or masks at generation plants, both in sequestration and/or reduced operations, to minimize the spread within the workforce per CDC guidance.[2]
- Given that distractions might increase during these high anxiety times, remind essential employees to be extra aware and to stay in the moment. Management and supervisors should recognize and reward awareness efforts by employees.

[2] https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover.html

- Eliminate non-essential work, especially if it would require two or more people to be within 6 feet.
- Alter assignments for work tasks that must occur in close proximity (less than 6 feet) by pairing technicians into a "team" and do not rotate individuals with other teams – ensure technicians have appropriate face coverings and other PPE.
- Ensure FR clothing and PPE (including masks/face coverings) are not shared between employees or contractors.
- Ensure that there is only one employee per vehicle, per shift, where possible. Adopt appropriate cleaning procedures between shifts.

Scenarios – Single Operator Impacted

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

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

Mitigation Strategies

- All staff on shift with the impacted operator(s) should immediately be self-quarantined, and the work hours/coverage of all non-impacted shifts extended. Ideally a relief shift would be available to cover the employees removed from duty.
- Execute sanitizing procedures with a pre-approved contractor to clean the control room area.
- Utilize alternate workstations, if available, to ensure unit operation can continue while the control room is disinfected and returned to service.
- A body temperature screening process should be used, or symptoms should be reviewed before admission into control rooms. This typically is required to be performed by licensed medical professionals and may require relief from HIPAA requirements for supervisors/managers to perform if necessary.
- A supplemental staffing plan should be implemented, and refresher training and simulations offered (if needed) for supervisors, managers, engineers, and retirees with the requisite skills to backfill control room staff in the event control center staffing is further reduced due to COVID-19 infections.
- The family situations of operators impacted by self-quarantine should be considered, and assistance/support should be offered where needed to ensure quarantined operators do not feel they are placing their family at risk (e.g., transportation, housing, childcare, eldercare, video chats).

- In order to return employees back to work, access to testing and analysis must be prioritized and made available.
- Have HR or Incident Command (IC) preemptively provide direction to supervisors about what to do if someone tests positive. A standard series of questions to help with an investigation should be considered, following applicable regulations, that discuss isolation (does employee have support to do that?). HR/IC should investigate direct contact or close contact (30 minutes or more) between employees. Additionally, HR/IC should determine which notifications need to go out throughout the organization. Rather than sending out a communication on every case, consider discussing incidents in a weekly call for all employees.

Case Studies and Lessons Learned from COVID-19

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

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

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

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

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

Generation Scenario – Operator Tests Positive, Commence Safe Shutdown

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

Due to the positive test, the operator's two crewmates also were sent home for 14 days of self-isolation, even though neither had symptoms. Given critical and sensitive equipment in the control room, the decision was made to remove the unit from service in a controlled manner immediately, instead of waiting for a scheduled hard trip-out on Day 22, without impact to overall grid reliability. A thorough

deep clean was conducted. Employees could not be in the areas while the disinfecting process took place, so the non-operational plant was monitored from the remote engineering workstation. This engineering station was suitable for monitoring but could not safely control an operating unit.

Once deep cleaning was completed, employees were allowed to return, and the plant resumed operation.

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

Sequestration for Generation Considerations (UPDATED)

Owners and operators of generating units will consider the sequestration of mission-essential generation control center staff in order to keep them healthy and to ensure continuity of operations. Separating these essential and hard-to-replace employees from their families is not an easy decision, but it is a decades-old industry practice to ensure electricity is available in times of need.
This section lays out important guidance and suggested critical lessons learned from generator operators, nuclear generating stations, and independent power producers already practicing sequestration during the COVID-19 pandemic. To ensure that a sequestration plan is implemented effectively and that enough employees are willing to volunteer to be sequestered, the quality and availability of support services are critical.

Suggestions for Sequestration at a Generation Plant

- **Hygiene**
  - Establish clear, hygienic shift turnover practices.
  - Establish a clear, hygienic procedure for shift relief after two weeks.
  - Follow clear sanitization procedures at beginning and end of every shift.
  - Remember that the external environment (i.e., cold) can influence temperature readings when conducting screens and lead to false readings. Consider rapid testing if available.
- **Mission-Essential Personnel**
  - Perform temperature checks of all personnel entering the plant site (employees and contractors), following CDC recommendations.

- Reinforce social distancing and secure control room personnel to limit/prevent exposure in the event of a suspected or confirmed case. Perform routine temperature checks of plant-sequestered employees to monitor conditions.
- Develop a procedure for handling critical chemicals and supplies.
- Reduce or eliminate employees moving from one site to another.
- Close as many gates and access points on a site as possible. Minimize traffic.

- **Other General Lessons for Entities Implementing Sequestration**
  - Communicate relentlessly. Use all platforms.
    - Provide general employees with updates.
    - Tell employees who do not feel well that it is ok to stay home.
  - Follow internal accounting and human resources policies to ensure appropriate record keeping.
  - Maintain an engaged business continuity team (corporate level) to support the site.
  - Use volunteers as much as possible.
  - Negotiate with unions before sequestration to develop appropriate HR processes.

Different Approaches to Sequestration

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

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