COVID-19 RESPONSE

Safe, Efficient Restart Recommendations for Businesses

TVA EnergyRight® BUSINESS & INDUSTRY

About this guide

Your local power company and TVA EnergyRight have partnered to provide the enclosed recommendations for businesses reopening their doors after shuttering facilities for COVID-19.

We know this has been an incredibly difficult time for many organizations as you navigate the financial and operational disruptions to your business while doing your part to maintain employee and customer safety. With safer at home orders lifting, you may have questions about how to safely and efficiently resume operations.

In the following pages, you will find answers broken down by space and equipment type, including best practices and suggested upgrades to maximize efficient system operations.

The TVA EnergyRight team empathizes with you during this challenging period and we thank you for doing your part to flatten the curve and keep your staff and customers safe. We hope you find this guide useful and we are here to assist if you have any questions.

Sincerely,
TVA EnergyRight

TVA EnergyRight® BUSINESS & INDUSTRY

About TVA EnergyRight®

EnergyRight for Business & Industry partners with your local power company to provide energy management advice and resources, and to offer incentives to offset some of the costs associated with smart energy technology upgrades.

Visit EnergyRight.com to find out more.

Health, safety and sanitizing procedures

A priority when reopening is ensuring your establishment is healthy and safe for people on-site. Follow these tips to protect all visitors and staff:

- Ensure emergency and security systems are operating as intended
- Routinely clean and disinfect all high-touch surfaces (e.g., elevator buttons, door and sink handles, light switches, water fountains)
- Supply hand sanitizer and/or wipes for use at common contact points (e.g. doorways, reception areas, elevators)
- Provide Personal Protective Equipment, such as gloves and masks, to personnel
- Check the temperature of employees upon entry and periodically during their shift

Reducing person-to-person contact

- Limit occupancy and encourage work from home practices when possible
- Provide guidance, such a floor-markings with tape, to encourage visitors to maintain six feet of separation
- Consider installing physical barriers (e.g., clear plastic sneeze guards) if employees must interact face-to-face with visitors
- Designate specific areas for package drop-off and order pick-up and limit signature requirements
- Install automated equipment and touchless technologies (e.g., self-service kiosks, touchless payment methods, automatic or foot operated door openers, smart/optimized elevator systems)

Check and follow all local city and state guidelines about reopening.

Spaces

GENERAL

- Plug in, turn on, and confirm proper function of electrical equipment.
- To save energy, look for opportunities to reduce equipment run time as equipment is activated, including:
  - Computers, monitors, and printers
  - Cash registers and payment machines
  - TVs, cable boxes, projectors, and other media devices
  - Desk phones
  - Network equipment
- Confirm bathroom exhaust fans are operating as intended
- Install foot operated door openers wherever possible
- Look for signs of mold growth, and seek mold remediation if necessary

KITCHENS

- Sanitize all surfaces and utensils. Refer to manufacturer's recommendations for disinfecting equipment.
- Operate only kitchen equipment required to meet demand
  - Consolidate refrigerators and freezers; leave empty units defrosted and unplugged until capacity is required
  - Avoid idling equipment (e.g. fryers, griddles, vent hoods)
- Disinfect and unplug small appliances after use (e.g. blenders, coffee machines, toasters)
- Prior to returning ice machines to operation, clean ice storage chest, sanitize machine with disinfectant, and allow all surfaces to dry
- Manage supply chain to avoid food waste or perishable back-stock requiring extensive storage space (i.e. avoid using multiple freezers/ refrigerators when possible)

Equipment

GENERAL

- Use the Energy Management System (if applicable) to centralize management of, and reduce staff contact with, equipment and fixtures
  - Ensure Energy Management Systems are operating correctly
  - Consider encasing wall switches, thermostats, etc. in plastic boxes with a sign explaining the associated controls (i.e., "Centrally controlled. Contact facilities for assistance.")
- Depending on your utility bill structure, you may experience a monthly or annual demand peak when re-energizing equipment
  - Consider staging the energizing of equipment to avoid setting peak and straining infrastructure

LIGHTING

- Utilize occupancy sensors in areas with intermittent use to reduce contact with switches (e.g. bathrooms, breakrooms, hallways)
- Consider installing the following:
  - LED fixtures; lamps last 10,000+ hours and require less maintenance
  - LEDs that include non-UV anti-microbial setting (<400nm); these fixtures produce light just outside the UV spectrum that can disinfect spaces and be used during unoccupied times at higher intensities to provide further disinfection
  - Power over Ethernet (PoE) light fixtures; these fixtures allow the user to control individual fixtures or areas and can gather usage data to inform possible scheduling opportunities

Equipment, continued

HVAC AND CONTROLS

- Set building automation system back to occupied, if applicable
- Reference ASHRAE 55.1 to ensure healthy indoor air quality
- Set thermostats back to occupied setpoints
  - Make note of areas with temperature-sensitive equipment and adjust setpoints accordingly
  - Utilize programmable controls and thermostats
- At initial startup, set fans to manually run for proper ventilation of stagnant air
- For normal operations, set HVAC fans to "Auto" mode (ensure fans are not short cycling)
- Install demand-controlled ventilation to allow the volume of fresh air to fluctuate with occupancy
- Replace HVAC filters and blow out condensing and evaporative coils regularly
- Set HVAC to maintain relative humidity below 60%
- Ensure control valves and instrumentation are functioning properly

CHILLED WATER SYSTEMS

- Set building automation system back to occupied, if applicable
- Consider utilizing chillers with a high part-load performance efficiency to maintain varying building loads due to changes in occupancy
- Perform a chilled water reset to increase water temps during part-load conditions
- Perform a condenser water reset for water cooled chiller
- Utilize variable frequency drives on throttled pumps associated with the chiller to reduce energy consumption
- Clean the chiller to prevent heavy fouling
- Use Energy Management System to centralize management of, and reduce contact with, the main chiller panel

HOT WATER/STEAM SYSTEMS

- For systems returning from shut down, flush stagnant water from pipes
- Verify sufficient water level in tank prior to energizing heaters
- Energize hot water circulating loop pump if de-energized
- Clean the boiler to prevent heavy fouling in the tubes
- Add chemical treatment as needed
- Adjust temperature set points if reduced
- Install a variable frequency drive on boiler inlet burner fan
- Install variable frequency drives on boiler feedwater pumps
- Insulate hot water and steam lines to reduce energy/fuel consumption

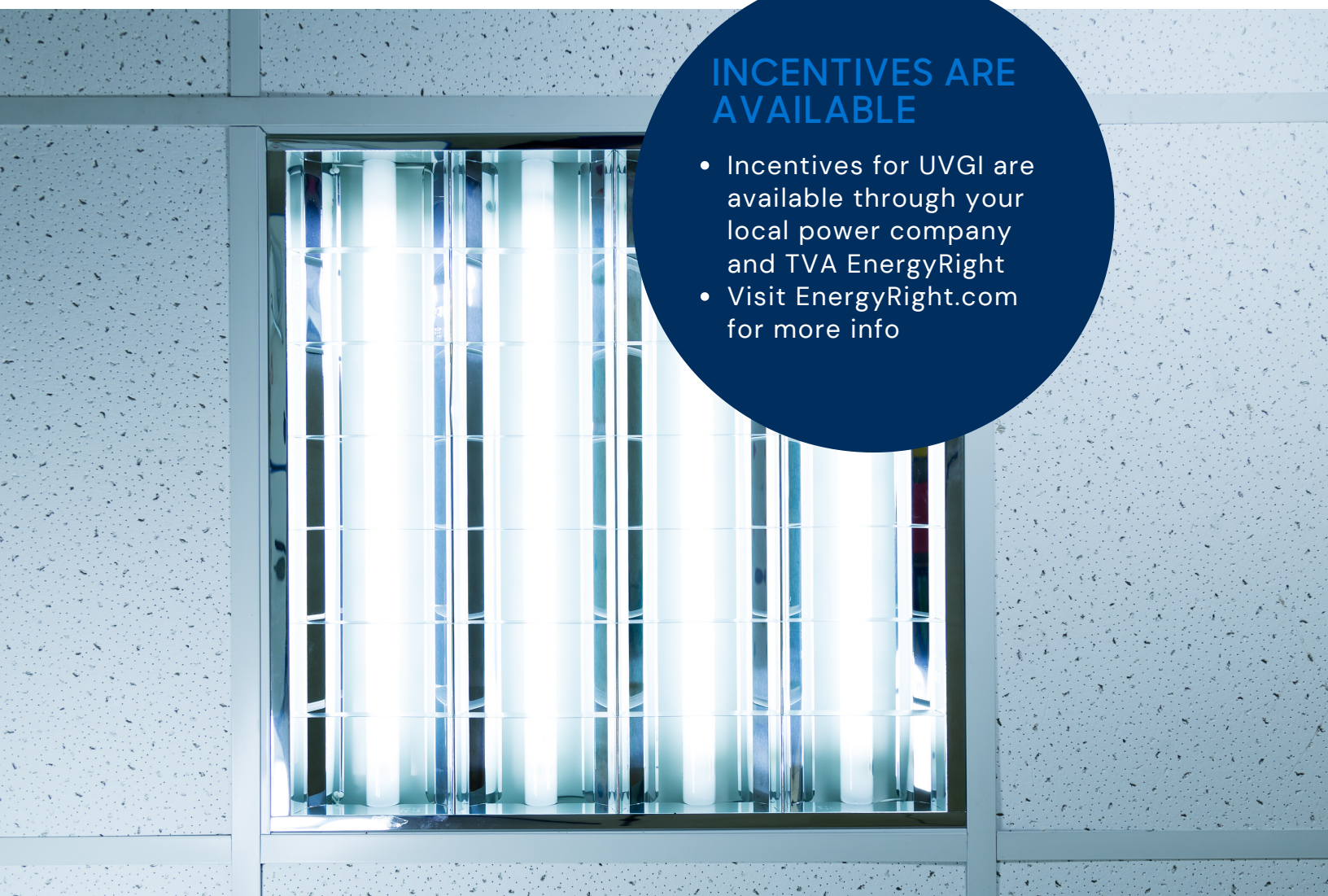
Check equipment manufacturer recommendations before implementing strategies.

Spotlight: Ultraviolet Technologies

FIGHT FUTURE VIRUSES WITH UV TECHNOLOGIES

Consider installing ultraviolet germicidal irradiation (UVGI) in your buildings to better protect staff and customers from airborne diseases. UVGI reduces airborne biological contaminants, including coronaviruses. Suggested applications include:

- Install Ultraviolet-C (UVC) lamps within the ductwork of the HVAC system to improve indoor air quality and reduce respiratory sickness and disease
- Utilize portable or fixed in-room surface irradiation units to disinfect contaminated surfaces when unoccupied
- Use UVC emitters to sanitize frequently used equipment daily



INCENTIVES ARE AVAILABLE

- Incentives for UVGI are available through your local power company and TVA EnergyRight
- Visit EnergyRight.com for more info