

## Summer readiness checklist

As temperatures rise, it's time to ensure HVAC systems are geared up for the summer to optimize building systems' performance, conserve energy, and keep occupants comfortable.

Whether buildings use district chilled water or operate onsite chillers and cooling towers, regularly reviewing and implementing this guide ensures proactive

building readiness for the summer season and extreme summer weather events, helps maximize equipment lifespan, improves overall energy efficiency, and enhances the safety of building staff and occupants.

***Contact your account manager if Vicinity's operations and maintenance experts can assist you with summer readiness, equipment upgrades, or preventative maintenance programs.***

### General best practices:

- Assess cooling and irrigation systems for leaks or other issues that could cause water losses. Then, purge the air from the cooling systems.
- Confirm the lineup of systems and secure vents and drains that may have been opened during winter layup.
- Remove winter "blocks" and covers installed on vents. Assure dampers are in good working order. Inspect and repair weather stripping and building penetrations as needed.
- Follow OSHA Lockout/Tagout requirements when servicing equipment.
- Balance system based on anticipated loading. Continue to optimize for given conditions and occupancy. Remove winter season overrides and program the system controllers to minimize simultaneous heating and cooling.
- Order various system chemicals to establish inventory and dose for system-specific criteria and concentrations, including biocides, antifreeze, make-up refrigerant, softeners, or corrosion inhibitors. Assure personal protective equipment (PPE) inventory for handling chemicals and chemical spill kits.
- Review any open work orders for the system and equipment and address them ahead of the summer operations season.
- Function test any newly installed or upgraded equipment. Integrate controls of new equipment.
- Secure freeze protection or heat tracing systems that had been used for winter.
- Continuously evaluate performance throughout the season to detect fouling from surrounding environmental conditions, such as pollen accumulation or leaves. Track weather to anticipate extreme loading on your equipment and prepare accordingly by scheduling maintenance strategically.

### **Cooling towers:**

- ❑ Disinfect equipment ahead of seasonal startup to prevent the growth of harmful bacteria. Monitor and control conductivity to reduce scale deposits on heat transfer surfaces.
- ❑ Calibrate equipment, including temperature and flow sensors, control valves, and conductivity probes.
- ❑ Replace oil in gearboxes as needed. Sample filter content to determine the source of particulate matter in oil.
- ❑ Perform baseline vibration or ultrasonic analysis by hooking up sensors to fan motors, gearboxes, condenser water pumps, and chilled water pumps to define signatures and detect anomalies.
- ❑ Inspect and repair distribution spray pipes and nozzles.
- ❑ Inspect fan blades, rivets, couplings, and connectors for torque and signs of cracking.

### **Chillers:**

- ❑ Examine and clean the intake filter panel, removing dirt or debris accumulated throughout the year to optimize airflow.
- ❑ Clean condenser and evaporator tubes, coils, and fins as applicable.
- ❑ Check refrigerant levels and assess whether additional refrigerant should be added (check again after initial operation). Ensure spare inventory for losses due to maintenance events. Document and track refrigerants used and lost.
- ❑ Check all relief and safety devices, achieving required inspection intervals.
- ❑ Exercise all valves in the system, stroking full range.
- ❑ Clean panels and steelwork thoroughly, checking for signs of corrosion or damage to panel seals. Repair any issues identified.
- ❑ Inspect piping and pumps for water leaks. Flush piping.
- ❑ Monitor for refrigerant and oil leaks. Calibrate and test leak detection systems (if present) and alarms.

- ❑ Check the flow and pressure of strainers, valves, and actuators.
- ❑ Test water viscosity with a refractometer for frost protection. Chemically treat to system-specific required concentrations.
- ❑ Inspect switchgear and motors. Assure motor heaters are on for a period of time before powering up motors for the first time after a winter layup.
- ❑ Test compressors and electronic components.
- ❑ Take oil samples and adjust oil levels as needed. Evaluate any materials found in oil samples to determine the potential source (gears, bearing, and piping scale).
- ❑ Clean and service all variable frequency drives (VFDs). Assure control system and compartment/package air conditioning, fans, and cooling systems are functioning.
- ❑ During maintenance, service, or repairs, ensure only EPA-certified technicians perform tasks that may violate the integrity of a refrigerant circuit.

### **Heat exchangers:**

- ❑ Assess whether pumps are in good working order. Inspect pedestals, couplings, coupling guards, and suction strainers before and after initial operation. Document the baseline vibration signature and monitor periodically. Ensure the lubricant and bearing condition are maintained in good order.
  - ❑ Clean off any dirt that is present.
  - ❑ Test pressure-regulating valves (PRVs) for leaks, clean orifices, check diaphragm plates, test the gauging, and set to the desired system pressure.
  - ❑ Clean radiators and observe with thermal imaging when in service to identify any vapor pockets causing poor heat exchange.
  - ❑ Turn off heat trace circuits.
  - ❑ Perform water chemistry testing.
  - ❑ Inspect tubes, measure tube thickness, repair or plug tubes as needed, and perform preventative maintenance, such as hydrolasing or cleaning.
  - ❑ Monitor performance closely upon commissioning.
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## Heat wave and extreme summer weather event preparedness:

- Continue regular inspections and maintenance of the cooling tower, chiller, and heat exchanger equipment to prevent fouling and malfunctions. Take equipment offline at night to perform inspections and maintenance when energy demands are lower.
- Pay careful attention to any bacteria growth in cooling towers that could develop in warmer temperatures.
- Ensure doors and windows are securely closed to maintain positive building pressure. Seal any gaps identified with caulking or weatherization stripping as needed.
- Conduct heat stress training to keep staff informed about hot weather safety protocols.
- Ensure easy access to water stations for building staff and occupants.
- Gather emergency supplies, including drinking water, first aid kits, ice packs, coolers, heat exhaustion treatment supplies, flashlights, and additional batteries.
- Cover windows with drapes, shades, or window reflectors.
- Inspect roof, concrete, and metal components for any cracks and address them promptly to prevent structural failure.
- Inspect air filtration systems to ensure healthy indoor air quality.
- To minimize the risk of fire and smoke damage, install fire sprinklers, maintain fire alarms, and conduct regular fire drills.
- Explore sustainable building design elements, including rooftop gardens or cool pavements to limit heat absorption.
- Limit energy consumption and strain on the grid by setting thermostats below 78 F and installing energy-efficient lighting.
- Turn off lights and appliances when they are not needed. Utilize energy-intensive appliances, such as ovens, washing machines, dryers, and dishwashers, in the early morning or late at night when there is less energy demand.
- Inspect lightning arrest systems pre- and post-storms.
- Implement and review emergency preparedness and response plans to ensure the safety of building staff and occupants during extreme weather events.

According to Brightly's research, a Siemens company, every dollar invested in preventative maintenance programs translates to five dollars saved in unexpected repairs.

To learn more about Vicinity's preventative services, visit [www.vicinityenergy.us](http://www.vicinityenergy.us), or email [info@vicinityenergy.us](mailto:info@vicinityenergy.us).

