



Holiday Surge HVAC Equipment Stress Checklist

A Pre-Holiday Inspection Guide for Multi-Site Facility Managers Overseeing Commercial HVAC Equipment

How to Use This Checklist

This tool helps multi-site facility managers verify that the HVAC components most vulnerable to holiday surge stress have been inspected and addressed before peak occupancy and extended operating hours arrive. Use Part 1 as the pre-holiday inspection standard for service vendor verification at each location. Use Part 2 to track inspection status and findings across the portfolio. Use Part 3 as a quick reference for warning signs that surface during the holiday season itself.

Target: All pre-holiday inspections completed and all identified conditions addressed before peak surge begins. In most markets, the effective pre-holiday service window closes by early November. Schedule service visits in October to ensure completion before contractor availability tightens.

PORTFOLIO INFORMATION

Field	Details
Portfolio Name / Organization	
Number of Locations	
Sectors Represented	☐ Retail ☐ Veterinary ☐ Automotive Dealership ☐ Storage ☐ Healthcare ☐ Other: _____
High-Surge Locations (extended holiday hours or significant occupancy increase)	List locations: _____
Cold-Weather Markets (Northeast, Midwest - heat pump defrost and freeze management relevant)	List states or regions: _____
Mild-Winter Markets (South, Southwest - dual heating/cooling operation relevant)	List states or regions: _____
Primary Service Vendor	
Pre-Holiday Inspection Target Completion Date	
Person Responsible for Portfolio Holiday Surge Tracking	

PART 1: LOCATION-LEVEL PRE-HOLIDAY INSPECTION CHECKLIST

Complete one checklist per location. Use during or immediately after the pre-holiday service visit to verify all surge-vulnerable components have been assessed. Attach service vendor report.

LOCATION INFORMATION

Field	Details
Location Name / Address	
Sector	☐ Retail ☐ Veterinary ☐ Automotive Dealership ☐ Storage ☐ Healthcare ☐ Other
Primary System Type	☐ Gas-Fired Rooftop Unit ☐ Heat Pump - Rooftop ☐ Heat Pump - Split System ☐ Gas Furnace with AC ☐ Electric Heating ☐ Other: _____
Number of HVAC Units at Location	
Expected Holiday Surge Pattern	☐ Significant occupancy increase ☐ Extended daily operating hours ☐ Both ☐ Minimal change from normal
Inspection Date	
Service Vendor / Technician	
Ambient Temperature at Inspection	°F

COMPONENT 1: COMPRESSOR

The compressor is the highest-stakes component during holiday surge - extended runtime and elevated load accumulate wear on units carrying any marginal condition into the surge period.

Pre-Holiday Compressor Assessment - Check Each

- ☐ Compressor amperage measured and documented against nameplate
Measured amperage: _____ A Nameplate amperage: _____ A Status: ☐ Within range ☐ Above nameplate - flag
- ☐ Discharge line temperature measured at current ambient conditions
Discharge line temperature: _____ °F Status: ☐ Within acceptable range ☐ Elevated - flag
- ☐ High-side and low-side pressures measured and documented
Suction pressure: _____ psig Discharge pressure: _____ psig
- ☐ Refrigerant charge verified - superheat and subcooling confirmed within specification
Superheat: _____ °F Subcooling: _____ °F Charge status: ☐ Correct ☐ Adjusted ☐ Leak identified
- ☐ No short-cycling observed during inspection - compressor running in sustained cycles
- ☐ No unusual mechanical sounds from compressor during operation
- ☐ Compressor housing temperature normal - not significantly hotter than ambient would suggest
- ☐ Contactor inspected - contact surfaces free of significant pitting or burn marks
Contactor condition: ☐ Good ☐ Light pitting - monitor ☐ Moderate/heavy pitting - replace before holiday season
- ☐ Capacitor(s) tested - microfarad value confirmed at or above 90% of rated value
Capacitor rated value: _____ µF Measured value: _____ µF Status: ☐ Within range ☐ Below 90% - replace before holiday season

Compressor surge readiness:

- ☐ Cleared - no conditions identified requiring action before holiday season
- ☐ Action required before holiday season - describe: _____

COMPONENT 2: HEAT EXCHANGER

Heat exchangers in gas-fired systems face elevated temperature cycling during surge periods and carry safety implications if compromised. This inspection is mandatory for all gas-fired heating systems.

For Gas-Fired Systems - Check Each

- ☐ Heat exchanger visually inspected - access panels opened for direct visual assessment
- ☐ No visible cracks, holes, or corrosion on heat exchanger surfaces
- ☐ No rust staining, soot deposits, or discoloration patterns suggesting combustion gas leakage
- ☐ Burner flame observed during operation - blue and even across all ports with no yellow or orange
Flame condition: ☐ Normal blue/even ☐ Yellow or orange noted - service required ☐ Uneven across ports - service required
- ☐ CO detector reading confirmed normal in supply air stream during heating operation
- ☐ No unusual odors detected in supply air during heating operation
- ☐ Flue connections confirmed intact and properly sealed
- ☐ Draft inducer motor (if applicable) confirmed operating normally - no unusual noise or vibration

For Heat Pump Systems - Check Each

- ☐ Outdoor coil condition inspected - no significant damage, corrosion, or blockage
- ☐ Defrost cycle operation confirmed - system enters and exits defrost normally
- ☐ Defrost cycle frequency appropriate for current ambient conditions - not over-cycling
- ☐ Supplemental electric resistance heat elements confirmed operational - tested and functional
Supplemental heat status: ☐ Confirmed operational ☐ Not tested ☐ Issue found - flag
- ☐ In cold-weather markets: outdoor unit base heater confirmed operational where installed

For Electric Heating Systems - Check Each

- ☐ Electric heating elements confirmed operational - all stages tested
- ☐ Element amperage measured and confirmed within specification
- ☐ Sequencer operation confirmed - elements staging on and off correctly without simultaneous full draw

Heat exchanger / heating system surge readiness:

- ☐ Cleared - no conditions identified requiring action before holiday season
- ☐ Action required before holiday season - describe: _____
- ☐ Safety concern identified - immediate service required - do not defer

COMPONENT 3: FAN MOTORS AND ASSEMBLIES

Fan motors face sustained high-runtime conditions during holiday extended hours - bearing wear and motor thermal stress accumulate without the daily rest cycles normal operation provides.

Supply Fan - Check Each

☐ Supply fan motor amperage measured and documented against nameplate

Measured amperage: _____ A Nameplate amperage: _____ A Status: ☐ Within range ☐ Above nameplate - flag

☐ No unusual noise from supply fan motor during operation - no bearing noise, grinding, or squealing

☐ No unusual vibration from supply fan assembly - impeller confirmed balanced

☐ Belt condition confirmed on belt-driven units - no cracking, glazing, or excessive stretch

Belt condition: ☐ Good ☐ Marginal - replace before holiday season ☐ Requires immediate replacement

☐ Belt tension confirmed correct on belt-driven units

☐ Fan motor housing temperature normal during operation

Condenser / Outdoor Fan (for systems with outdoor units) - Check Each

☐ Condenser fan motor amperage measured and documented against nameplate

Measured amperage: _____ A Nameplate amperage: _____ A Status: ☐ Within range ☐ Above nameplate - flag

☐ No unusual bearing noise from condenser fan motor during operation

☐ Fan blade(s) inspected - no damage, cracking, or bending

☐ Fan blade rotation direction confirmed correct

☐ For heat pumps in cold-weather markets: defrost cycle fan operation confirmed correct - fan stops during defrost and restarts cleanly

☐ Outdoor unit base clear of debris, leaves, and standing water that can freeze around fan assembly

Return Fan (where applicable) - Check Each

☐ Return fan motor amperage measured against nameplate

☐ No unusual noise or vibration from return fan assembly

Fan assemblies surge readiness:

☐ Cleared - no conditions identified requiring action before holiday season

☐ Action required before holiday season - describe: _____

COMPONENT 4: ELECTRICAL COMPONENTS

Contactors and capacitors are the electrical components most frequently responsible for holiday-period failures - inexpensive to replace proactively and expensive to manage as emergency failures during peak demand.

Contactors - Check Each

☐ All contactors de-energized and contact surfaces physically inspected

☐ Compressor contactor contact condition rated

Compressor contactor condition: ☐ Clean ☐ Light pitting - monitor ☐ Moderate pitting - replace before holiday season

☐ Heavy pitting/burn marks - replace immediately

☐ Fan motor contactor contact condition rated where separate from compressor contactor

Fan contactor condition: ☐ Clean ☐ Light pitting ☐ Moderate pitting - replace ☐ Heavy pitting - replace immediately

☐ Contactor coil operation confirmed - pulls in cleanly without chattering

☐ No discoloration of contactor housing from contact heat

Capacitors - Check Each

☐ All run capacitors tested with capacitance meter - microfarad values documented

Capacitor	Rated Value (µF)	Measured Value (µF)	% of Rated	Status
Compressor run			%	☐ OK ☐ Replace
Condenser fan run			%	☐ OK ☐ Replace
Supply fan run (if applicable)			%	☐ OK ☐ Replace

☐ All capacitors below 90% of rated value replaced during this visit

☐ No swelling, bulging, or leaking noted on any capacitor housing

Electrical components surge readiness:

☐ Cleared - all contactors and capacitors in acceptable condition

☐ Action required before holiday season - describe: _____

COMPONENT 5: FILTERS AND AIRFLOW

Filter management during holiday surge is critical - elevated occupancy increases particulate load significantly, and overloaded filters reduce airflow capacity precisely when the system needs full airflow to manage surge demand.

Filter Assessment - Check Each

☐ All filters inspected at this location

Filter condition at inspection: ☐ Clean ☐ Loaded - replacement recommended ☐ Overloaded - immediate replacement required

☐ Filters replaced during this visit - fresh filters installed for holiday season entry

☐ Filter type and MERV rating documented

Filter type / MERV rating: _____

☐ Static pressure across filter bank measured and confirmed within design range

Static pressure measured: _____ in. w.c. *Design range:* _____ in. w.c.

☐ Plan confirmed for mid-season filter check - holiday occupancy surge accelerates filter loading

Mid-season filter check scheduled for: _____

Airflow and Distribution - Check Each

☐ Supply air reaching occupied zones - no distribution imbalances that would become comfort complaints during peak occupancy

☐ Return air pathways unobstructed - no merchandise, displays, or furniture blocking return grilles

☐ Supply registers unobstructed - no seasonal merchandise placement blocking supply airflow

☐ Any recent layout changes at this location noted that may affect airflow distribution

Layout changes since last service: ☐ None ☐ Yes - describe: _____

Filters and airflow surge readiness:

☐ Cleared - fresh filters installed, airflow confirmed

☐ Action required before holiday season - describe: _____

COMPONENT 6: SAFETY CONTROLS AND SAFETIES

Safety controls protect equipment from operating outside safe parameters - verifying their function before surge conditions is essential, particularly for high-pressure safeties, limit switches, and carbon monoxide detection.

Safety Control Verification - Check Each

☐ High-pressure safety cutout verified - set point confirmed correct and functional

☐ Low-pressure safety cutout verified - set point confirmed correct and functional

☐ Motor overload protection verified on compressor and fan motors

☐ Limit switches verified on gas-fired equipment - high-temperature limits confirmed operational

☐ Gas valve operation confirmed on gas-fired equipment - opens and closes cleanly

☐ Ignition system confirmed reliable on gas-fired equipment - consistent ignition without repeated retry cycles

☐ Carbon monoxide detector(s) at location confirmed operational and within calibration date

CO detector status: ☐ Operational and current ☐ Requires replacement or calibration ☐ Not installed - flag for healthcare and veterinary locations

☐ Thermostat and sensor calibration verified - setpoints correct and sensors reading accurately

☐ Building automation system integration confirmed functional where applicable

Safety controls surge readiness:

☐ Cleared - all safeties verified functional

☐ Action required before holiday season - describe: _____

☐ Safety concern identified - immediate service required

COMPONENT 7: REFRIGERANT AND SYSTEM PERFORMANCE

Refrigerant charge accuracy is particularly important entering holiday surge - an undercharged system loses capacity precisely when elevated occupancy demands maximum output.

Refrigerant and Performance - Check Each

☐ Refrigerant charge confirmed at current ambient conditions - superheat and subcooling within specification

☐ If charge was low: leak check performed and leak identified and repaired - not topped off without source identification

☐ Supply and return temperature differential confirmed within expected range at air handler



Supply air temperature: _____ °F Return air temperature: _____ °F Differential: _____ °F

☐ System achieving setpoint at current ambient and occupancy conditions

☐ No fault codes or control board alerts present

☐ Prior service records reviewed for recurring refrigerant additions without documented leak repair

Refrigerant status: ☐ Correct charge confirmed ☐ Adjusted - leak identified and repaired ☐ Adjusted - no leak found, flag for follow-up

Refrigerant and system performance surge readiness:

☐ Cleared - charge confirmed correct

☐ Action required before holiday season - describe: _____

LOCATION SURGE READINESS SUMMARY

Component	Status	Action Required	Completed	Cleared
Compressor	☐ OK ☐ Flag		☐ Yes ☐ No	☐ Yes ☐ No
Heat exchanger / heating system	☐ OK ☐ Flag ☐ Safety concern		☐ Yes ☐ No	☐ Yes ☐ No
Fan motors and assemblies	☐ OK ☐ Flag		☐ Yes ☐ No	☐ Yes ☐ No
Contactors	☐ OK ☐ Flag		☐ Yes ☐ No	☐ Yes ☐ No
Capacitors	☐ OK ☐ Flag		☐ Yes ☐ No	☐ Yes ☐ No
Filters and airflow	☐ OK ☐ Flag		☐ Yes ☐ No	☐ Yes ☐ No
Safety controls	☐ OK ☐ Flag ☐ Safety concern		☐ Yes ☐ No	☐ Yes ☐ No
Refrigerant and system performance	☐ OK ☐ Flag		☐ Yes ☐ No	☐ Yes ☐ No
Overall location surge readiness				☐ Cleared for holiday season ☐ Follow-up required

Follow-up items and deadlines: _____

PART 2: PORTFOLIO HOLIDAY SURGE READINESS TRACKING LOG

Complete 1 row per location. Update as inspections are completed and findings are addressed. Add rows as needed.

Location	Section	System Type	Inspection Date	Compressor	Heat Exchanger	Fan Motors	Capacitors/Contactors	Filters/Airflow	Safety Controls	Refrigerant	Overall Status	Follow-Up Required
				☐ OK ☐ Flag	☐ OK ☐ Flag ☐ Safety	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag ☐ Safety	☐ OK ☐ Flag	☐ Cleared ☐ Pending	
				☐ OK ☐ Flag	☐ OK ☐ Flag ☐ Safety	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag ☐ Safety	☐ OK ☐ Flag	☐ Cleared ☐ Pending	
				☐ OK ☐ Flag	☐ OK ☐ Flag ☐ Safety	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag ☐ Safety	☐ OK ☐ Flag	☐ Cleared ☐ Pending	

Portfolio Surge Readiness Summary

Metric	Count	Percentage
Total locations in portfolio		
Locations inspected		%
Locations cleared - all components addressed		%
Locations with follow-up pending		%
Locations not yet inspected		%
Locations with compressor flags		%
Locations with heat exchanger flags or safety concerns		%
Locations with capacitors replaced proactively		%
Locations with contactors replaced proactively		%
Locations with fresh filters installed		%
Locations with safety control concerns identified		%

PART 3: IN-SEASON HOLIDAY SURGE MONITORING

Use this quick reference during the holiday season to recognize warning signs that require prompt service response. The goal during the holiday season is to identify developing conditions before they produce failures during peak occupancy.

Warning Signs to Monitor During Holiday Season

What You Observe	Most Likely Component	Action	Timeline
System not achieving setpoint during peak occupancy hours despite running continuously	Capacity limitation from refrigerant, coil, or load issue	Service call	Same day
System short-cycling - starting and stopping repeatedly	High-pressure or low-pressure safety tripping	Service call - identify cause before resetting	Same day - do not reset without identifying cause
Comfort complaints concentrated in high-traffic zones during peak hours	Airflow distribution imbalance or capacity limitation	Investigate airflow and system performance	Within 24 hours
Unusual smell in conditioned air from gas-fired system	Potential heat exchanger issue	Shut down heating system and call for service immediately	Immediately - do not continue operating
CO detector alarm	Potential combustion gas issue	Evacuate affected area and call for service immediately	Immediately
Unusual noise from equipment cabinet during operation	Mechanical component stress	Service call	Same day
System running but heating inadequate - all zones	Heating capacity issue - heat exchanger, burner, or refrigerant	Service call	Same day
Specific zone persistently warm while others are comfortable	Distribution imbalance	Service call or internal adjustment	Within 24 hours
Filter loading visibly heavy mid-season	Accelerated loading from holiday traffic	Filter replacement	Schedule promptly - do not allow overloaded filters to restrict airflow during peak demand
Compressor humming but not starting	Capacitor failure	Service call	Same day

Any fault code or equipment alarm	Varies	Document and call for service - do not clear without identifying cause	Same day
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Mid-Season Service Scheduling Note

Pre-holiday preparation reduces but does not eliminate in-season service needs. During the holiday period, contractor availability is significantly reduced and parts availability tightens as demand spikes simultaneously across many locations. Two practices reduce the impact of mid-season service needs:

- ☐ Establish a pre-holiday emergency response agreement with service vendor confirming holiday-period response times and priority status for your locations
- ☐ Confirm parts inventory for the highest-failure-risk components - capacitors, contactors, igniters, and filters - either with your service vendor or through a backup supplier