

## Refrigeration PM Checklist

Customer:	Site:
Date:	Work Order:
Technician Name:	

To be performed in Q2, southern locations first starting in April

\*\*\*Please provide pictures of cleaning before and after, as well as Deficiencies\*\*\*

SELF CONTAINED (Reach-in Coolers/Freezers) EQUIPMENT TASKS: (If Applicable)	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: <u>(MUST include system and rep airs needed, list current pressure temperature value in or out of range)</u>
Vacuum each condenser	Quarterly			
Clean condenser fan. Verify motor operation.	Quarterly			
Clean condensate pan and verify operation of condensate pan heater.	Quarterly			
Clean evaporator fins, fan blade, guard	Quarterly			
Check door gaskets for damage	Quarterly			
Verify operation of anti-sweat heaters	Quarterly			
Verify tightness of all electrical connections. Inspect connections for corrosion or damage.	Quarterly			
Make sure there is enough clearance between heaters, fan motor and electrical wiring. Ensure that heaters are not touching fan motors or wiring harness during operation.	Quarterly			
The wiring harness, fan motor terminals and heater terminals are all securely zip tied and routed to avoid any damage, electrical short circuit or fire hazards. Inspect harness connection at motor, at heater terminal block, and at any plug connections and make sure it's connected secured	Quarterly			
Check the defrost and drain pan heaters and Ensure that they are operational with correct amp drawn and are held in place by the manufacturer provided brackets.	Quarterly			
Check fit and finish of all panels and trim	Quarterly			
Verify operation of hinge.	Quarterly			
Ensure that door hinge is fastened tightly to case.	Quarterly			
Verify that fan switch control fans and fans come on when door is closed.	Quarterly			
Check operating temperatures and pressures	Quarterly			
Inspect fan guards for damage. Ensure that they are in place and clean	Quarterly			
Inspect light sockets for damage.	Quarterly			
Inspect condition of door wiring harness.	Quarterly			
Ensure that temperature sensor is mounted in return air stream of case.	Quarterly			
Ensure that product emulator is located in the interior of the case, in the lower, back, LH corner.	Quarterly			
Verify that case is visible in E2 panel.	Quarterly			

Note any additional refrigerated equipment that is on site and is not monitored through the E2 control panel.	Quarterly			
REMOTE - Hillphoenix/Husmann (DT Reach-in Coolers/Freezers) EQUIPMENT TASKS: (If Applicable)	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: (MUST include system and repairs needed, list current pressure temperature value in or out of range)
Inspect each evaporator for any sign of ice build up	Quarterly			
Inspect each evaporator fan to ensure operation	Quarterly			
Inspect fan motor and fan assembly for vibration	Quarterly			
Check the fan during defrost. Make sure the fan is not operational during defrost				
Listen to each fan motor for bearing noise	Quarterly			
Verify fan rotation	Quarterly			
Inspect each coil for any sign of damage	Quarterly			
Check all sensors including defrost termination, TXV bulb and discharge air sensor and make sure they are placed at correct location and mounted correctly	Quarterly			
Check the superheat and make sure it is as per design spec(Refer the OEM I/O manual)				
Check the discharge air flow near honey comb and make sure it's as per design spec (Refer the OEM I/O manual)				
Inspect evaporators for dirt/debris. Clean as needed.	Quarterly			
Check honeycomb for any damage and fix/replace it if needed	Quarterly			
Check the return air grill and fix/replace it if needed	Quarterly			
Remove kickplate and clean underneath the case with a broom and long handled mop. Use warm water and disinfecting cleaning solution while cleaning underneath the cases.				
Inspect defrost and drain pan heaters for any damage. Ensure that there is sufficient clearance between the electrical connections and the copper components of the evaporator coil.	Quarterly			
Make sure there is enough clearance between heaters, fan motor and electrical wiring. Ensure that heaters are not touching fan motors or wiring harness during operation.	Quarterly			
The wiring harness, fan motor terminals and heater terminals are all securely zip tied and routed to avoid any damage, electrical short circuit or fire hazards.Inspect harness connection at motor, at heater terminal block, and at any plug connections and make sure it's connected secured	Quarterly			
Check the defrost and drain pan heaters and Ensure that they are operational with correct amp drawn and are held in place by the manufacturer provided brackets.	Quarterly			

Inspect Defrost Contactors or relay and make sure it's operating properly	Quarterly			
Check defrost settings. Check the evaporator coil condition after each defrost and make sure it's clear at the end of defrost				
Verify tightness of all electrical connections	Quarterly			
Inspect condensate drain line to ensure that it is not damaged and no blockage due to debris before cleaning the drain pan	Quarterly			
Inspect the glass door and door gaskets for any damage	Quarterly			
Check fit and finish of all panels and trim	Quarterly			
Verify operation of hinge.	Quarterly			
Ensure that door hinge is fastened tightly to case.	Quarterly			
Check operating temperatures and pressures	Quarterly			
Inspect light sockets for damage.	Quarterly			
Inspect condition of door wiring harness.	Quarterly			
Check antisweat heater in glass door if available				
Ensure that temperature sensor is mounted in return air stream of case.	Quarterly			
Ensure that product emulator is located in the interior of the case, in the lower, back, LH corner.	Quarterly			
Verify that case is visible in E2 panel and air sensors and product emulators are reading correctly	Quarterly			
Check all control parameters				
Note any additional refrigerated equipment that is on site and is not monitored through the E2 control panel.	Quarterly			
<b>COMPRESSOR/RACKS/CONDENSER TASKS:</b>	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: <u>(MUST include system and repairs needed, list current pressure temperature value in or out of range)</u>
Leak Check All Systems and piping <b>**</b> (Must complete Leak inspection form) <b>**</b> (Please provide pictures of leaks found)	Quarterly			
Visually check refrigeration compressors and compressor rack for visible signs of vibration	Quarterly			
Visually check refrigeration compressors, refrigeration compressor rack, and condensing units for visible signs of oil residue	Quarterly			
Excessive Heat	Quarterly			
Look at each sight glass and verify that oil level is between 1/3 and 1/2 of glass	Quarterly			
Look at each sight glass for foam.	Quarterly			
Loose or Missing Covers: Look at all cover, cover plates, etc.	Quarterly			
Noise Level	Quarterly			
Valve Caps: Look at each valve and ensure that all valves have valve cap in place	Quarterly			
Test refrigeration system for non-condensibles	Quarterly			
Test acidity of refrigeration oil.	Quarterly			

High/Low Pressure Switches: Verify settings and operation of switch	Quarterly			
Oil Failure Switch: Verify settings and operation of switch	Quarterly			
Check oil pressure	Quarterly			
Replace compressor contactor	Annually			
Verify tightness of all electrical connections	Quarterly			
<b>ADIABATIC CONDENSER/EVAPORATIVE CONDENSER TASKS:</b>	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: <b>(MUST include system and repairs needed, list current pressure temperature value in or out of range)</b>
Look at condenser fan to verify that it is rotating	Quarterly			
Check bearings - lubricate as necessary.	Quarterly			
Inspect for broken, missing, or loose fan guards	Quarterly			
Loose Panels/Components: Inspect all panels and covers	Quarterly			
Valve Caps: Inspect all valves to ensure that valve caps are in place	Quarterly			
Inspect inlet side of condenser for dirt, cotton, or other debris that will impact air flow	Quarterly			
Verify that air can flow/ is flowing through condenser. Clean/Dirty?	Quarterly			
Contractor to pressure wash condenser	Quarterly			
Inspect condenser and sump for scaling, dirt, debris.	Quarterly			
Verify tightness of all electrical connections	Quarterly			
If applicable: Check belt tension. Adjust as needed. Replace every 6 months.	Quarterly			
<b>SUBCOOLER TASKS:</b>	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: <b>(MUST include system and repairs needed, list current pressure temperature value in or out of range)</b>
If system is so equipped, inspect subcooler for oil residue	Quarterly			
If system is so equipped with Sensors/Transducers, verify that temperature sensors are attached to piping Are subcoolers fully operational?	Quarterly			
	Quarterly			
<b>OIL RESERVOIR/SEPARATOR TASKS:</b>	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: <b>(MUST include system and repairs needed, list current pressure temperature value in or out of range)</b>
Inspect vessel for oil residue	Quarterly			
Check PSI drop on separator (if applicable)	Quarterly			
Look at sight glass and verify oil level	Quarterly			

FILTER DRIER TASKS:	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: (MUST include system and rep airs needed, list current pressure temperature value in or out of range)
Measure temperature differential across liquid line drier. Quote replacement if more than 5 Degrees	Quarterly			
WALK-IN COOLER/FREEZER BOX TASKS:	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: (MUST include system and rep airs needed, list current pressure temperature value in or out of range)
Inspect interior, and exterior of box for condensation issues or ice build up	Quarterly			
Inspect freezer floor along walls, and across doorways for ice build up	Quarterly			
Inspect door gasket for signs of damage, tears, or flattening	Quarterly			
Verify that door sweeps on cooler or freezer doors drag on the floor	Quarterly			
Verify operation of door closure mechanism	Quarterly			
Inspect door latch and strike to ensure operation and that when closed, door is held tight to door fram	Quarterly			
Verify operation of cooler/freezer lights	Quarterly			
Inspect condition of door threshold	Quarterly			
Inspect penetrations through walls/ceilings to ensure that they are sealed	Quarterly			
Inspect each glass door for signs of condensation on exterior of door or between glass panes	Quarterly			
Inspect all doors to ensure that door gaskets seal tightly to door frame when closed.	Quarterly			
Verify sensors are functional and not damaged. (Quote replacements as needed)	Quarterly			
AIR CURTAIN TASKS	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: (MUST include system and rep airs needed, list current pressure temperature value in or out of range)
Adjust air curtain. Make sure the nozzle is adjusted correctly so that the discharge air is reaching the intake slots	Quarterly			
Clean off plastic wrap or debris from the intake screen slots. This thrash can be suck into the unit damaging the heater if not kept clean.	Quarterly			
Ensure that the heater is drawing the proper ampearage and that the air curtain has temperature rise at design	Quarterly			
Verify heater operation	Quarterly			

WALK-IN FREEZER AUTOMATIC BI PARTING DOOR TASKS:	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: (MUST include system and repairs needed, list current pressure temperature value in or out of range)
Adjust door so that it closes automatically within 8 seconds of opening	Quarterly			
Inspect door opening switches operating and in good condition	Quarterly			
Adjust motion sensor has correct field of vision and is functioning properly	Quarterly			
COOLER/FREEZER ROOF INSPECTION TASKS:	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: (MUST include system and repairs needed, list current pressure temperature value in or out of range)
Inspect top deck of each cooler/freezer for condensation, mold, mildew	Quarterly			
Inspect underside of building roof deck above all refrigerated or frozen spaces for water infiltration, mold, and mildew.	Quarterly			
DOORS INSPECTION TASKS:	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: (MUST include system and repairs needed, list current pressure temperature value in or out of range)
Inspect door gaskets for tears, damage, or flattening	Quarterly			
Inspect door handles to ensure that they are tight to door frame	Quarterly			
Verify that doors close automatically	Quarterly			
Verify operation of door and door frame heaters. Quote replacements as needed.	Quarterly			
EVAPORATOR UNIT TASKS:	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: (MUST include system and repairs needed, list current pressure temperature value in or out of range)
Inspect each evaporator for signs of ice build up	Quarterly			
Inspect each evaporator fan to ensure operation	Quarterly			
Inspect for broken, damaged, or loose fan guards	Quarterly			
Inspect fan motor and fan assembly for vibration	Quarterly			
Listen to each fan motor for bearing noise	Quarterly			
Verify fan rotation	Quarterly			
Inspect each coil sheet for damage	Quarterly			
Check all evaporator coils for ice build up	Quarterly			
Inspect evaporators for dirt/debris. Clean as needed.	Quarterly			

Inspect guards and blades for damage, clean guards and clean the fan blades	Quarterly			
Inspect heaters to ensure that there is clearance between the electrical connections and the copper components of the evaporator coil.	Quarterly			
Ensure that heaters are operable and are held in place by the manufacturer provided brackets.	Quarterly			
Inspect Defrost Contactors	Quarterly			
Inspect harness connection at motor, at terminal block, and at any plug connections. Apply dielectric grease to plug connection to retard the infiltration of moisture.	Quarterly			
Verify tightness of all electrical connections	Quarterly			
Verify operation of heat tape	Quarterly			
Inspect condensate drain line to ensure that it is not damaged, that it is open from evaporator drain connection to building drain	Quarterly			
<b>PIPING SYSTEM TASKS:</b>	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: <u>(MUST include system and repairs needed, list current pressure temperature value in or out of range)</u>
Visually inspect refrigeration piping system and look specifically for vibration, shaking, movement, torn insulation	Quarterly			
Visually inspect piping system for signs of torn insulation	Quarterly			
Inspect piping system for signs of moisture, ice build up	Quarterly			
Inspect piping system to ensure that hangers are not damaged and are supporting pipe	Quarterly			
<b>REMS SYSTEM TASKS:</b>	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: <u>(MUST include system and repairs needed, list current pressure temperature value in or out of range)</u>
Contractor to verify calibration of each pressure transducer	Quarterly			
Contractor to verify calibration of each temperature sensor. Quote to replace if reading is not accurate.	Quarterly			
Note is compressor cycles more that 150 times in 24 hours.	Quarterly			
Visually check the home page on the E2 and ensure that all systems are visible.	Quarterly			
Verify that site layout drawing is mounted on wall adjacent to or near E2 panel	Quarterly			
Verify that site layout drawing accurately reflects building, quantity of refrigeration systems, and layout.	Quarterly			
Verify all sensors are reading within an acceptable range for the application.	Quarterly			

LEAK DETECTION SYSTEM TASKS:	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: (MUST include system and repairs needed, list current pressure temperature value in or out of range)
Contractor to verify calibration and operation of leak detector	Quarterly			
Empty water trap	Quarterly			
Check charcoal filter on IRLDS	Quarterly			
Check Line-End Filter for each leak detection zone	Quarterly			
Verify all sensors are functional and not damaged (Quote replacements as needed)	Quarterly			
Inspect end-of line water stop for each leak detection zone.	Quarterly			
ROOF/BUILDING PENETRATION TASKS:	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: (MUST include system and repairs needed, list current pressure temperature value in or out of range)
Inspect and verify that they are sealed	Quarterly			
WIRING/CONDUIT TASKS:	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: (MUST include system and repairs needed, list current pressure temperature value in or out of range)
Inspect integrity of conduit runs serving refrigeration equipment	Quarterly			
Glycol Systems (floor heat/oil coolers):	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: (MUST include system and repairs needed, list current pressure temperature value in or out of range)
Verify supply/return pressures	Quarterly			
Verify pump operation	Quarterly			
Using refractometer - verify glycol mixture	Quarterly			
Verify inlet/outlet temperature (if applicable)	Quarterly			
Controls:	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: (MUST include system and repairs needed, list current pressure temperature value in or out of range)
Verify all comm networks & boards are online	Quarterly			
Visually inspect Dixell controllers	Quarterly			



Use E2 to verify all evaporator coil temp sensors and transducers are within an acceptable target range.	Quarterly			
<b>CO2 Refrigeration System Check (If Applicable)</b>	<b>Frequency</b>	<b>Completed Value or Not Applicable</b>	<b>Quote Needed</b>	<b>Please note any Deficiencies or Values found during PM: (MUST include system and repairs needed, list current pressure temperature value in or out of range)</b>
<b>GENERAL CO2 SYSTEM</b>				
Check CO2 refrigerant charge in Flash Tank (Danfoss reading vs. level column)	Quarterly			
Check E2 Refrig Sensor readings for refrigerant leaks	Quarterly			
Check all E2 controls for correct operation of CO2 rack and circuits Associated to system	Quarterly			
Lubricate all motors and bearings as needed	Quarterly			
Check all operating refrigerant pressures	Quarterly			
Check all operating Probes and Sensors for proper refrigerant temperatures	Quarterly			
Check all motors (compressors, evaporators, condensers, pumps, etc)	Quarterly			
Check glycol flow indicators at headers, check underfloor temp sensors	Quarterly			
Check strobes and alarms for leak detection and alarms	Quarterly			
Leak check complete system	Quarterly			
Check overhead ethernet & low voltage com lines throughout facility for potential issues	Quarterly			

**CO2 RACK & COMPRESSORS**

Check compressor and subcooling operation check superheat at compressors and all EEV valves on Rack	Quarterly			
Cycle Test for low and High ambients/ Cycle system	Quarterly			
Check oil pressure differential across oil separator inlet and outlet 8lb minimum differential if above 8lbs replace oil separator filter	Quarterly			
Check electronic oil feeds at Compressors and oil levels	Quarterly			
Inspect Pressure relief valves and pressure controls at CO2 Rack	Quarterly			
Check all Voltage and Amp draws on all electrical components at Gas Cooler and Rack	Quarterly			
Check pressure control valve operations that is positioned before flash tank	Quarterly			
Check operation of VFD and compressor cycling on first stage and second stage	Quarterly			
Check all 3 way valves and shift valves on heat reclaim for correct operation	Quarterly			
<b>SYSTEM HIGH PRESSURE SIDE</b>				
Check receiver refrigerant level, trend level on E2 or Danfoss to ensure no refrigerant loss/leaks	Quarterly			

Check all operations of adiabatic or aircooled gas cooler inspect tube sheets for scale or pitting	Quarterly			
Check flash-gas bypass valve operation that is positioned out of flash tank	Quarterly			
Check correct operation fans and clean Honey cone filters on adiabatic Condenser	Quarterly			
Check proper operation of all sub cooling and electronic expansion and EEPR valves on CO2 rack	Quarterly			
Check Pressure differential on liquid driers inlet and outlet pressures, if pressure differential above 6lbs replace driers	Quarterly			
Check water regulating valve (Belimo) for proper operation including and proper water shedding on Adiabatic	Quarterly			
Check water feed valve and piping for any insulation damage and check heat tape for proper application	Quarterly			
EVAP COILS & CASES HIGHSIDE AND LOWSIDE				
Check for proper operation of the fan motors	Quarterly			
Check transducers and temp sensors at evap coils	Quarterly			
Check Bypass valves in Overhead and EEV and EEPR valves for proper operation	Quarterly			
Check condensate drain lines for flow, check heat tracing on freezer drain lines	Quarterly			
Check evaporator drain pans for debris, ice, etc and remove	Quarterly			
Check all evaporator coils for ice build up	Quarterly			
Check around evaporator on ceiling, walls, and floor below for ice build up, remove if possible	Quarterly			
Inspect evaporators for dirt/debris. Clean as needed.	Quarterly			
Check fan/Defrost amps at the RDP for each	Quarterly			
Check Filter Driers Pressure differential	Quarterly			
Check all walk-ins interior and exterior for any trim or piping supports and insulation failures	Quarterly			
Inspect overhead piping and bypass valves for any damage to insulation or piping supports	Quarterly			
Check operations of EEV and EEPR valves at coils	Quarterly			
Check all voltage and amps on remote and non-remote pannels on evap coils and cases	Quarterly			
General System Task				
Replace liquid driers every second quarter	Quarterly			
Amp draws on all refrigeration contactors & breakers defrost/Fixtures and phase loss monitors and registered into log.	Quarterly			
Perform oil test if oil test fails replace oil in system and replace filters and clean strainers	Annually			
Check Glycol PH	Annually			

Q1 and Q3- Clean Adiabatic or aircooled condenser two times a year once before summer and once in the fall	Quarterly			
Clean evaporators. Dock 2x per year, other evaps 1x per year	Annually			
Test and calibrate refrigerant detectors 2x per year	Quarterly			
Replace defrost contactors and compressor contactors annually	Annually			
Replace oils separator filters annually	Annually			
Replace filter in leak detection if applied	Quarterly			
Replace E2 battery every second quarter	Quarterly			
Oil Test on System	Annually			
Replace oils separator filters every second quarter or per observation	Quarterly			
Frick System (If Applicable)	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: <u>(MUST include system and repairs needed, list current pressure temperature value in or out of range)</u>

Compressor

Inspect Shaft Seal	Quarterly			
Vibration Analysis	Quarterly			
Check Sensor Calibration (Slide Valve, Slide Stop, pressures and temps)	Quarterly			
Check Electrical Connections (Check and torque all terminals in the processor and starter panel per the specifications posted in the enclosure)	Quarterly			
VFD Units Check Skip Freq. ( Units with variable speed drives check for excess vibration and skip frequencies any time unit operating conditions change)	Quarterly			
Suction & Discharge Flange Bolts. (Verify tightness of bolts on suction and discharge flanges. See table for Torque requirements)	Quarterly			
Check Coupling (Check Bolts, Shim Packs, Center inert key and all bolt torques)	Quarterly			
Check and Clean Suction Strainer	Annually			
Replace Coalescers	Annually			
Clean Liquid Strainers	Annually			
Oil analysis	Quarterly			
Replace Oil Filters (Directed by Oil Analysis)	As needed			
Change Oil ( As Directed by Oil Analysis)	As needed			
Lubricate Bearings	Quarterly			
Leak Check	Quarterly			
Check Motor Alignment and Compressor Alignment	Quarterly			
Replace Oil Sight Glass	Annually			

Flooded Evaporator Vessel

Check Overall Condition of Vessel	Quarterly			
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Check all Piping for Cracks, Leaks, Oil Residue and	Quarterly			
Check/ Calibrate Vessel Refrigerant level Probe	Quarterly			
Check Operation of Refrigerant Level Controller	Quarterly			
Check Operation of High and low Refrigerant Level Controls	Quarterly			
Inspect Pump Station For Leaks and Noise	Quarterly			
Grease Pump Bearings	Quarterly			
Inspect Operation of All Electric and Manual Valves	Quarterly			
Exercise All Mechanical Valves and Inspect for Refrigerant Leaks	Quarterly			
Check Receiver Level and Verify Probe Accuracy	Quarterly			
Leak Check	Quarterly			

#### Auto Purger

Inspect all Tubing for Cracks or Damage	Quarterly			
Test all Valves, Electrical and Mechanical for Proper Operation	Quarterly			
Ensure that the Refrigeration System is Working	Quarterly			
Test the Float to Ensure that Vapor is Being Purged and Not Refrigerant	Quarterly			
Check Cycling Sequence Timing at Each Header To Ensure Proper Purge	Quarterly			
Leak Check	Quarterly			
Evaporator / Fan Coils				
Visually Inspect Coils, Coil Fins and Piping damage, dirt or ice	Quarterly			
Inspect Coil housing, Drain Pan and Drain Line for Damage	Quarterly			
Clean out drain line	Quarterly			
Check drain pan for oil stains	Quarterly			
Check Defrost valve for proper holdback (150 psi)	Quarterly			
Check Superheat and adjust hand expansion valve (Superheat should be set to 0 F)	Quarterly			
Check operation of all fan motors (note noise and vibration)	Quarterly			
Grease blower bearings and tighten belts	Quarterly			
Check and tighten electrical connections and contactors	Quarterly			
Leak check all refrigerant pipin on the roof.	Quarterly			
Exercise and oil all mechanical valves	Quarterly			

#### Evaporative Cooling Tower

Clean Debris From Unit	Quarterly			
Clean and Flush Sump	Quarterly			
Clean Sump Strainer	Quarterly			
Check and Adjust Sump Water Level	Quarterly			
Inspect Heat Transfer Section	Quarterly			
Inspect and Clean Spray Nozzles	Quarterly			
Check and Adjust Fan Belt Tension	Quarterly			
Check And Adjust Bleed Rate	Quarterly			

Check Operation of Make-up Valve	Quarterly			
Check Unit for Unusual Noise or Vibration	Quarterly			
Check Bearing Locking Collars	Quarterly			
Inspect General Condition of Unit	Quarterly			
Check Motor Voltage Current	Quarterly			
Lubricate Fan Shaft Bearings	Quarterly			
lubricate Motor Base Adjusting Screws	Quarterly			
lubricate Fan And Pump Motors	Quarterly			
Check Fan for Rotation Without Obstruction	Quarterly			
Check Fan And Pump for Proper Rotation	Quarterly			
Drain Sump and Piping	Quarterly			
Inspect Protective Finish	Quarterly			
Lubricate Capacity Control and/or Discharge Closure Damper Bearings and Working joints	Quarterly			
Inspect/Adjust Damper linkage	Quarterly			
Inspect Electric pan Water Level Control	Quarterly			
Inspect Piping for Scale Buildup. Descale and Pressure Wash if Necessary	Quarterly			
leak Check	Quarterly			

Acorn System

Flush System With Hot Water (Monthly)	Quarterly			
Change the Small Filter Cartridge Inside of the Seperator Tank Housing	Quarterly			
Inspect Each Pumps Water Cooling Radiator, Clean as Necessary	Quarterly			
Inspect Each Vacuum Pump's Seperator Tank for Build-up of Contaminats and Hard Water Deposits, Clean as Necessary	Quarterly			
Inspect Each Vacuum Center Swing Check Valves, Clean as Necessary	Quarterly			
Inspect Each Vacuum Stainless Steel Collection Tank, Clean as Necessary	Quarterly			
Refrigration System Check	Frequency	Completed Value or Not Applicable	Quote Needed	Please note any Deficiencies or Values found during PM: <u>(MUST include system and repairs needed, list current pressure temperature value in or out of range)</u>
Deep system check for refrigeration system for the site **See Annual PM Deep Check Sheet	Annually			