



Process Chiller Maintenance Checklist

16 planned preventive maintenance tasks · Free PDF from PM Assist

A practical starting point for planned preventive maintenance. Always refer to the manufacturer's O&M manual and site-specific requirements.

Visual Checks

- ☐ Check reservoir or buffer tank level, top-up arrangements and internal cleanliness, and inspect for sediment and biological growth

Functional Checks

- ☐ Measure glycol concentration with a refractometer and confirm the freeze point and burst protection against the process requirement
- ☐ Test glycol condition — check pH and inhibitor reserve, and look for the colour change and acidity that indicate degradation
- ☐ Verify delivered fluid temperature stability against the process tolerance over a full load cycle, not just at a single point
- ☐ Check setpoint, control deadband and any cascade or PID tuning against the process requirement and the commissioning record
- ☐ Review load matching and buffer volume — check the cycle pattern against the process load profile for short cycling on light load
- ☐ Take a compressor oil sample for analysis including acidity, and trend the result rather than reading it in isolation
- ☐ Carry out vibration analysis on compressors and pumps where continuous duty justifies condition monitoring
- ☐ Record suction and discharge pressures and verify superheat and subcooling against the manufacturer's target range

Cleaning & Housekeeping

- ☐ Clean or replace process circuit filtration — strainers, bag or cartridge filters and any side-stream filtration

Safety Checks

- ☐ Test redundancy — run the duty/standby or N+1 changeover and confirm the standby machine achieves setpoint within the required time
- ☐ Confirm automatic changeover on fault actually operates, rather than assuming it will because it is configured
- ☐ Test safety controls and confirm process-critical alarms route to somewhere staffed at the times the plant runs

Record Keeping

- ☐ Confirm the correct glycol type is in use and recorded — inhibited industrial glycol, never automotive antifreeze, and propylene where food or pharmaceutical contact is possible
- ☐ Record compressor run hours and starts per hour, and trend against the previous visit
- ☐ Update the F-Gas logbook and confirm the leak check interval is being met given continuous operation

Maintenance Frequency

Weekly

- Log delivered fluid temperature and confirm it is holding within the process tolerance
- Check reservoir level and look for any loss indicating a leak in the process circuit
- Review alarm history since the last check

Monthly

- Log pressures, temperatures, compressor currents, run hours and starts
- Glycol concentration check by refractometer
- Filter differential pressure check and clean or replace as required

Quarterly

- Full performance verification against the process tolerance across the load range
- Duty/standby changeover test with the standby machine proven to setpoint
- Safety control and critical alarm routing test
- Glycol inhibitor and pH testing

Every 6 Months

- Compressor oil analysis with results trended
- Vibration analysis on compressors and process pumps
- Reservoir inspection and clean where the process permits access
- F-Gas leak check where the charge places the unit on a six-monthly interval

Annually

- Comprehensive service planned into an agreed production shutdown window
- Compressor oil and filter change
- Condenser clean appropriate to the machine's heat rejection type
- Electrical thermography of panel and motor terminations
- Review of held spares against lead times for the critical components
- F-Gas leak check and logbook update at the interval set by the CO2e charge