READY TO INSPECT — FIELD CHECKLIST

Cooling tower annual maintenance checklist

The annual cooling tower service is the deep pass: the measurements, cleanings and tests a quarterly round doesn't reach. This checklist keeps the full service on record with the photos that make it defensible later. Work is commonly verified against manufacturer's published instructions. Confirm the edition your authority having jurisdiction has adopted.

Who runs it: The mechanical service crew on the annual shutdown, with the treatment vendor for the disinfection. When: Once a year at startup or layup, when the tower can be shut down and drained. The clean-out is what keeps scale and biofilm from carrying into the next season.

Shutdown and entry

- [ ] Water management program reviewed with the vendor
  Annual review held with the treatment vendor and owner, hazard analysis, control limits and the startup disinfection procedure confirmed current before the drain.
  No photo required
- [ ] Every energy source locked out for the shutdown
  Fan, pump and any basin heater locked and tagged by each worker, makeup tagged shut; powered checks use the procedure's temporary release (basin filled if needed, people clear, guards on), then re-lock.
  1 photo required
- [ ] Basin entry checked against the confined-space program
  Basin assessed under the site's confined-space program and, where it qualifies, permit issued, air tested and an attendant posted before anyone climbs in.
  No photo required

Drain and clean

- [ ] Basin drained, cleaned and disinfected
  Basin emptied to bare metal or FRP, sediment and biofilm removed, disinfection performed and logged with the treatment vendor.
  3 photos required
- [ ] Fill and drift eliminators pulled and inspected
  A section of fill lifted for scale and fouling behind the face, eliminators pulled, cleaned and reseated with no gaps.
  2 photos required
- [ ] Distribution nozzles or basin orifices cleared
  Spray nozzles or hot-water basin orifices cleared of scale and debris, cracked or missing nozzles noted for replacement, basin covers reseated.
  1 photo required

Mechanical section

- [ ] Gearbox serviced and fan balance checked
  Gearbox oil changed and sampled, fan blade pitch and tip clearance within spec, no cracks at hubs, balance verified.
  2 photos required
- [ ] Vibration switch and belt drive serviced
  Vibration cut-out functionally tripped and reset, belts replaced or re-tensioned, bearings greased on the service schedule.
  No photo required
- [ ] Fan motor insulation resistance tested
  Motor leads tested with an insulation-resistance meter with the fan re-locked, reading recorded against last year's value, terminal box dry and gasketed.
  1 photo required
- [ ] Motor mount and drive support bolts torqued
  Motor base, drive supports and fan cylinder fasteners checked for corrosion and torqued to the manufacturer's values, belt or shaft drive left aligned.
  1 photo required

Structure and controls

- [ ] Structural steel, fasteners and casing inspected
  Waterline and support steel checked for corrosion and section loss, casing and louvers sound, ladder and handrail secure.
  2 photos required

- [ ] Basin heater, level and safety controls verified
  Freeze-protection heater and thermostat operational where fitted, level controls and low-water cutout proven, alarms reporting.
  1 photo required

Restart and records

- [ ] Tower refilled, restarted and run under control
  Guards and doors back on, locks removed by the person who hung them, basin refilled, pump and fan restarted with rotation, level and staging observed.
  1 photo required

- [ ] Post-startup water sampling scheduled
  Treatment vendor's startup chemistry re-established and the post-startup bacteria or Legionella sample scheduled per the water management program.
  No photo required