READY TO INSPECT — FIELD CHECKLIST

Steam boiler annual maintenance checklist

The annual steam boiler 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 ASME boiler and pressure vessel code, manufacturer's published instructions. Confirm the edition your authority having jurisdiction has adopted.

Who runs it: The boiler service lead runs the service; the jurisdictional or insurance inspector performs the certificate inspection, which is observed and recorded. When: Once a year, timed with the jurisdictional inspection so the boiler can be opened, serviced and presented for the certificate in one shutdown.

Shutdown and isolation

- [ ] **Burner, fuel and feed pumps locked and tagged before opening** — 1 photo required
  Burner power, fuel, feed and chemical pumps locked and tagged by each worker, and any manway entry made under the site's confined-space permit. For firing tests: closed up, filled, guards on, people clear, locks off by whoever hung them, run, then re-locked before hands go back in.
- [ ] **Steam stop and feed valves closed, boiler cooled and drained** — 1 photo required
  Main steam stop and feedwater valves closed and tagged, doubled with an open bleed between them where boilers share a header, gauge at zero with the vent open, and the drain run to the blowoff tank with people clear.

Pressure vessel and internals

- [ ] **Water-side opened, inspected for scale and corrosion** — 3 photos required
  Handhole and manway covers pulled, waterside surfaces inspected for scale, pitting and grooving, deposits documented and treatment adequacy assessed.
- [ ] **Fire-side surfaces cleaned and inspected** — 2 photos required
  Tubes and passages brushed to bare metal where reachable, soot and scale thickness noted, no cracking or overheating damage at the sheet.
- [ ] **Handhole and manway seating faces checked before closing** — 1 photo required
  Seating faces cleaned and checked for erosion, new gaskets of the manufacturer's type fitted, covers drawn up evenly and watched for weeping once back at pressure.

Controls and safeties

- [ ] **Water column and gauge glass connections rodded clear** — 1 photo required
  With the boiler drained, water column crosses and connections opened and rodded free of sludge, try cocks too where fitted, and the glass and washers inspected for etching.
- [ ] **Low-water cutoffs opened, cleaned and tested** — 2 photos required
  Float or probe cutoffs disassembled, cleaned of mud and scale, float chamber flushed, then proven to trip the burner on falling level.
- [ ] **Full flame-failure and limit lockout sequence proven** — 1 photo required
  A simulated fault drives the burner into lockout and it stays out until reset, operating and high-limit pressure controls each tripping at setpoint.
- [ ] **Steam gauge compared with a test gauge and siphon cleared** — 1 photo required
  Boiler gauge read beside a calibrated test gauge, the siphon loop cleared, and a gauge outside the manufacturer's stated accuracy replaced and the change logged.

- [ ] Safety valve nameplate and seal checked against the boiler
  Stamped set pressure and capacity compared with the working pressure and output on the boiler rating plate, seal wire intact, and discharge piping supported off the valve.
  1 photo required

Firing tests and return to service

- [ ] Safety valve try-lever test per the manufacturer's guidance
  At the pressure the manufacturer names, discharge clear and people away, lever lifted and the valve reseats tight. The insurer or jurisdiction's inspector witnesses where required.
  No photo required
- [ ] Flue gas analyzed at low and high fire once back at pressure
  With steam pressure steady, a calibrated analyzer reading taken at each firing rate and compared with the manufacturer's range and last year's service readings.
  1 photo required
- [ ] Steam stop reopened slowly and boiler left in automatic
  Locks confirmed off by whoever hung them, stop valve cracked to warm and drain the header without hammer, header bleeds closed, then the boiler left cycling in automatic.
  1 photo required

Certificate inspection

- [ ] Jurisdictional inspection observed and documented
  The inspector's findings recorded, any required repairs captured with photos, and the certificate outcome logged. The inspector certifies the boiler, not the RTI user.
  2 photos required
- [ ] Operating certificate displayed in the boiler room
  Where the jurisdiction issues one, the certificate for this boiler displayed in the boiler room where the operator can see it; a missing one is reported to the owner.
  No photo required