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Appendix 1 - PPM Specification

SERVICE:

Heating Plant 2026

CLIENT:

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A APPENDIX 1 – PLANNED PREVENTATIVE MAINTENANCE (PPM) SPECIFICATION

A1 GENERAL REQUIREMENTS

- A1.1 The Contractor shall be responsible for the planned preventative maintenance of all heating plant specified in Appendix 5 (Asset List), including boilers (gas, forced draft, atmospheric and condensing), direct and indirect calorifiers, direct water heaters (vented and unvented), hot water storage cylinders, expansion vessels and pressurisation units.
- A1.2 The Contractor shall maintain the systems in accordance with manufacturer's recommendations, current legislation, Approved code of Practice (ACOPs), applicable British Standards, Gas Safety (Installation and Use) Regulations, the Health and Safety at Work Act and all other statutory requirements.
- A1.3 Where manufacturer's instructions are unavailable, the following specification represents the minimum acceptable standard.
- A1.4 All work shall be undertaken by suitably qualified, competent and accredited engineers, including Gas Safe registration where required.

A2 BOILERS (FORCED DRAFT & ATMOSPHERIC - WHERE APPLICABLE)

A2.1 Six Monthly

- a) Check automatic gas valves. Check for gas tightness.
- b) Removal of UV cell and head assembly. Clean, adjust electrode and if required isolate probe. UV cells should be replaced after a life of 10,000 hours.
- c) HT & probe details. Inspect for soundness. Consideration should be given to replacing HT lead every 12 months.
- d) Burner. Reassemble and fire, check air and gas settings, carry out combustion efficiency test. It is important that reference is made to the boiler and burner manufacturer's specifications.
- e) Air pressure switch. Test under no air conditions.
- f) Flame failure. Test and take probe or UV cell readings.
- g) General. Check security of mechanical parts and secure mounting of appliance. A maintenance check should be carried out on this type of burner twice a year but refer to manufacturer's specification.
- h) Provide written report. The report should be signed by the service engineer and the client/client representative/responsible person. Premature failure and excessive fuel costs will result if satisfactory service is not carried out. All service and maintenance must be carried out by a registered engineer complying with Health and Safety requirements and possess accreditation in accordance with the Gas Safety Regulations.
- i) Unsafe installations. Recommendations if after servicing the appliance is considered unsafe the client should be advised that it must be taken out of use. If approval for this action is refused an appropriate label must be attached to the appliance and the HSE informed. A written report should also be signed by the client/responsible person/clients representative.

A2.2 Annually

- a) Prior to commencing service work verify pipework gas tightness of appliance.
- b) Record settings; static and dynamic gas pressures and burner heat rate.
- c) Check the correct operation of all associated valves.
- d) Visually check condition of appliance for damage. Inspect casing, flue, connections and seals for any sign of leaks.
- e) Check that there is a steady fall back to the boiler from the flue to allow condensate to run back. With the boiler operating at low return, temperature [less than 50oC], check that condensate flows freely from the drain pipe.
- f) Check that all electrical connections are secure, and correctly fused.
- g) Check the operation and correct readings of thermostats, pressure sensors, altitude gauges thermometers.
- h) Check operation of fan and clean any deposits from blades.
- i) Check soundness of HT leads and electrodes.
- j) Determine the correctness of the ventilation to the appliance.
- k) Disconnect gas valve, check pilot tube. Remove and clean thermocouple replace if defective.
- l) Brush all accessible flue ways thoroughly from top to bottom, clean all deposits from the burner box, refit baffles and flue cover - checking cover seal. Check for cracking and wear.
- m) Inspect burner bars and main injector for damage or wear. Clear deposits.
- n) Remove and inspect boiler lint filters if fitted and refit in good condition.
- o) Check adjust gas valve rate to manufactures specification and ensure pilot stability and flame quality.
- p) Carry out operational check to normal working temperature. Verify operation of control thermostats.
- q) Check fail safe time (seconds) for flame supervision device.
- r) Measure products of combustion with flue analyser and record. Ensure that no products of combustion are entering the area of the building where the boiler is situated. This should be checking the operation of the flue and examine the combustion ways to ensure tightness. Carry out spillage test to appliance and flue.
- s) Carry out appliance gas tightness test and record readings.
- t) Unsafe installation - Advice your supervisor and customer then label the appliance and take out of service with the consent of the customer.
- u) Provide written report and record any work which needs rectification or replacement.
- v) Carry out gas safety certificate.

A3 BOILERS (CONDENSING - WHERE NOT COVERED IN FORCED DRAFT AND ATMOSPHERIC)

A3.1 Six Monthly

- a) As above

A3.2 Annually

- a) Brush all accessible flueways thoroughly from top to bottom, clean all deposits from the burner box, refit baffles and flue cover - checking cover seal. Check for cracking and wear.
- b) Clean and inspect Condensate level probe (if fitted). Check tray siphon tube is clear to drain flush with clean water.
- c) Clean with soft brush any Secondary heat exchanger (if fitted).
- d) Clean and descale (as required) module heat exchanger water and gas sides checking for cracking and fin damage.
- e) Check that condensate flows freely from the drain pipe at temperatures less than 50oC.
- f) Carry out gas safety certificate.

A4 DIRECT WATER HEATED VENTED

A4.1 Six Monthly

- a) Prior to commencing service work verify appliance pipework gas tightness.
- b) Record settings; static and dynamic fuel pressures and burner heat rate.
- c) Check for undue noise and vibration.
- d) Operate all valves.
- e) Visually check condition of appliance for damage. Inspect casing, flue and seal for any sign of leaks.
- f) Check that all electrical connections secure and correctly fused.
- g) Determine the correctness of the ventilation and flue termination to the appliance.
- h) Check condition and operation of fuel service valve.
- i) Withdraw burner, clean nozzle. Check soundness of HT leads and electrodes.
- j) Check operation of all linkages and lubricate as necessary.
- k) Disconnect gas valve, check pilot tube. Remove and clean flame supervision device.
- l) Thoroughly clean flueways and burner box, refit retarder and flue cover - checking cover seal.
- m) Check appliance thoroughly for cracking and wear.
- n) Check adjust gas valve rate to manufactures specification and ensure pilot stability and flame quality.
- o) Carry out operational check to normal working temperature. Verify operation of control thermostats.
- p) Check fail safe time (seconds) for flame supervision device.
- q) Measure products of combustion with flue analyser and record. Ensure that no products of combustion are entering the area of the building where the boiler is situated. This should be checking the operation of the flue and examine the combustion ways to ensure tightness. Carry out spillage test to appliance and flue.
- r) Return to normal operation.

A4.2 Annually

- a) As above.
- b) Carry out the gas safety certificate.

A5 HOT WATER HEATED UNVENTED

A5.1 Six Monthly

- a) Remove and clean in-line filter strainer.
- b) Check for undue leaks and noise.
- c) Check the precharge pressure of the expansion vessel. Top up or release as necessary.
- d) Check the condition of the safety valve and ensure the discharge line is clear and to drain.
- e) Check the temperature of the immersion control thermostat for correct operation and record setting.
- f) Verify the correct operation of the safety temperature lock out and reset. Record the 2nd tier level of temperature protection.
- g) Where possible check the heat exchanger for excessive scale.
- h) Check the correct operation of the pressure control devices and pressure gauges.
- i) Check the flow rate at the furthest outlet.
- j) Check the temperature at the furthest outlet.

A5.2 Annually

- a) As above.
- b) Carry out the gas safety certificate.

A6 HWS CYLINDER

A6.1 Six Monthly

- a) Check operation of safety controls, note and report any visible defects.
- b) Check safety for evidence of discharge.
- c) Check operation of the HWS circ pump.
- d) Check operation of the anti-stratification pump.
- e) Operate all valves.
- f) Check thermostats, pressure sensors, altitude gauges and thermometers for correct operation and settings.
- g) Check that all electrical connections secure and correctly fused.
- h) Shut down primary heat source, check operation of temperature controls and high limit cut-outs.

A6.2 Annually

- a) Check operation of safety controls, note and report any visible defects.
- b) Check safety for evidence of discharge.
- c) Check operation of the HWS circ pump.
- d) Check operation of the anti-stratification pump.
- e) Operate all valves.
- f) Check thermostats, pressure sensors, altitude gauges and thermometers for correct operation and settings.
- g) Check that all electrical connections secure and correctly fused.
- h) Shut down primary heat source, check operation of temperature controls and high limit cut-outs.
- i) Ensuring secondary valves are closed blowdown the cylinder to draw off a quantity of water, report any evidence of sediment.
- j) Shut down calorifier, drain down secondary side, remove inspection hatch.

- k) Carry out visual inspection of internal surfaces; remove any scale deposits and report.
- l) Check condition of sacrificial anode where fitted.
- m) Check condition of bursting disc if fitted. Where fitted refit all manholes, refill secondary side. Put primary side into operation.

A7 EXPANSION VESSEL AND COMPRESSOR

A7.1 Six Monthly

- a) Check unit for correct operation.
- b) Operate drain valve, drain condensation from air receiver.
- c) Drain and flush stagnant water.
- d) Check compressor oil level.

A7.2 Annually

- a) Check unit for correct operation.
- b) Operate drain valve, drain condensation from air receiver.
- c) Clean or replace compressor filter.
- d) Check compressor oil level.
- e) Check condition of anti-vibration mounts and hangers.
- f) Check earth bonding in good condition.
- g) Check terminal screens / barriers in place and secure.
- h) Inspect and clean if necessary fan motor air intakes.
- i) Check covers and fixings are secure.
- j) Check cable glands and conduit for correct security.
- k) Check local contactors/isolators condition and operation.
- l) Empty and clean expansion tank, report any defects found.
- m) Check for any special requirements identified in the previous inspection report, and arrange as necessary.
- n) Return unit to service.

A7.3 Vessel/Diaphragm Annually

- a) Check for correct operation.
- b) Empty and clean expansion tank as required, replace sight level gauge glass.
- c) Report any defects found.
- d) Return to service.
- e) Check for correct air cushion pressure.
- f) Add cushion pressure by use of foot pump or nitrogen injection.

A8 FLUES

A8.1 Annually

- a) Inspect security of supports and condition of paintwork. Report any signs of rust or corrosion. Particular attention should be paid to the condition of the base of the supports.
- b) Where possible, check flue terminals at roof level. Flue terminals should be undamaged and free from any obstruction.
- c) Smoke test. Check for flue pull and deterioration.

A8.2 Balanced flue terminals

- a) Check for obstruction, corrosion and if fan assisted check safety circuit.

A8.3 Induced draught/fan assisted

- a) Check for obstruction and condition of bearings.

A8.4 Fan dilution units

- a) Check pressure/vane switch action for correct operation.
- b) Check pressure/boiler interlock for correction operation. If not shut down burner.
- c) Dampers - Check action and control switches interlocks.

A8.5 Condensing boilers

- a) Check for obstruction and corrosion.
- b) If fan assisted check safety circuit.