Schedule 5

Technical Specification

For the Provision of Maintenance Services Issued by

University Hospitals of Morecambe Bay NHS Foundation Trust

Tender Reference Number: LGM38199

Central Digital Platform Reference:

Notice identifier: 2026/S 000-017934

Procurement identifier (OCID): ocds-h6vhtk-065e43

Maintenance Contract

Piped Medical Gases and Vacuum Systems

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Introduction

This document provides full details of the Client's requirements for the provision of maintenance of Piped Medical Gases and Vacuum Systems.

You are required to complete all sections in the accompanying Invitation to Tender response document (ITT), and provide pricing in the accompanying Pricing Schedule.

All equipment is to be maintained in line with the following Specification.

Sub-contracting of any part of this contract is not permitted.

Please note any bids received that deviate from any aspect of this Technical Specification will be classed as variant bids, and bidders may be excluded from the procurement process.

Contract overview

University Hospitals of Morecambe Bay NHS Foundation Trust "Client" is seeking to contract for the provision of a service to ensure their equipment is kept in a safe and reliable working order and operating with optimum efficiency.

The service shall be undertaken as per the requirements of the Health Technical Memorandum HTM 02-01: Medical gas pipeline systems. All tests, examinations and reporting shall be in accordance with the above.

The winning contractor will be expected to provide:

- Service / Maintenance visits, frequency and detailed requirements set out below
- Reactive call outs in accordance with requirements set out below
- Spare parts and consumables in accordance with requirements set out below
- Telephone advice
- Test equipment

It is essential that all aspects of this Technical Specification are adhered to during the contract period. It is imperative that safety measures are carried out during servicing of the equipment to comply with the safety requirements detailed in this technical specification.

The Client reserves the right to delete from or add to this programme such equipment as may be dictated by circumstances from time to time. This shall include any equipment that has inadvertently been missed from the maintenance programme. Pricing for any additional areas will be in line with the winning contractors' originally submitted price.

Lots

This contract will be awarded in a single lot.

Contract period

The agreement is intended to remain in force for a period of one-year with the option to extend for further four-years, subject to the satisfactory performance of the contractor. The contract is due to commence on 1st June 2026.

Location and sites

Name and address of sites where the contract will be carried out

- Royal Lancaster Infirmary, Ashton Road, Lancaster, LA1 4RP
- Furness General Hospital, Dalton Lane, Barrow-in-Furness, LA14 4LF
- Westmorland General Hospital, Burton Road, Kendal, LA9 7RG
- Millom Hospital, Lapstone Road, Millom, LA18 4BY

Individual locations and equipment details can be found in Appendix A.

Working hours

Normal working hours are between 08:00 and 16:00 Monday to Friday. Please note certain tasks are to be completed out of hours as highlighted within the following section.

Contract Requirements and Level of Cover

The Client requires a pre-planned fixed cost maintenance contract with all ad-hoc work, spare parts and consumables to be charged in addition to the fixed price contract.

The contractors' scheme of examination shall satisfy the requirements of HTM 02-01; all contractors service technicians shall be fully trained to AP level as per HTM 02-01.

The winning contractor will be required to carry out quarterly visits to all plant, manifolds, alarms and terminal units, with the equipment in each location listed on the attached asset lists.

The requirement is for the contractor to undertake work on the following systems:

- 100% of essential area terminal units (as per asset list) on each quarterly visit
- 25% remaining terminal units (as per asset list) per quarterly visit
- All plant alarm systems associated with the medical gas systems or directly linked to the medical gas system as specified checked as per quarterly visit
- All installed exposed medical gas pipelines and their means of isolation
- All manifolds, including emergency reserve and standby units, excluding VIE systems
- All medical/surgical air plant compressors, vacuum plants
- All anaesthetic gas scavenging systems. Including compliant LEV tests fully compliant with HSG 258 and copy of a report to be included in the tender documents.

Under the terms of the contract and in the following schedules, the terms 'examine', 'test' and 'check' as used in Chapter 10 of HTM 02-01 shall be defined as follows:

1. **Examine** - To make a careful and critical scrutiny of an item with dismantling, by using the senses of sight, hearing, smell and touch to verify that the plant or equipment is in working order.

2. **Test** - To operate the plant or equipment and/or use appropriate testing instruments where necessary to ensure that the plant or equipment is functioning correctly.

3. **Check** - To make a thorough inspection for damage, wear or deterioration. Also to ascertain that the plant or equipment is correctly adjusted to conform to the required standard.

All work undertaken by the contractor shall be carried out in accordance with the safety rules and procedures set out in the Permit to Work (PTW) system under Chapter 6 of HTM 02-01.

Disposal of all waste products and/or by products from any MGPS shall be carried out in accordance with current waste disposal methods and be fully compliant and auditable. This is also included in the contract cost.

Maintenance Task List for Manifolds

Emergency / Reserve Standby Manifold Systems

- Obtain PTW and advise hospital of alarm changes
- On completion of each service ensure there are sufficient spare Bodok Seals available in the plant room for all tailpipes – this applies to all plant rooms with a manifold
- Check general condition of manifold including tailpipes
- Recorded dates of regulators, safety valves and tailpipes
- Recorded ESM set pressure
- Check all cylinders are full and in date
- Isolate ESM and check no effect to hospital pipeline pressure
- Examine manifold for leaks with all cylinders and header isolation valves open
- Check safety valve is not passing
- Test header NRV's are operating correctly
- Check tailpipe seals
- Test 'Reserve Low' pressure switch operates correctly and alarm indicates
- Check cylinder and line pressure gauges operate correctly
- Test regulator output for creep and stability

- Final leak test
- Manifold operating correctly, left online/offline, and alarms normal
- Please ensure all log books are kept up to date after each service
- Check the alarms are received by the switchboard at WGH

Automatic Manifold Control Panel

- Obtain PTW and advise hospital of alarm changes
- Test operation of ESM and confirm satisfactory
- Check general condition of manifold including tailpipes
- Record dates of regulators, safety valves and tailpipes
- Record line pressure
- Check all cylinders are full and in date
- ESM online and replacement, full, in date cylinders are immediately available
- Close the manifold isolation valve slowly, and ensure that the ESM output pressure is maintained before proceeding with tests
- Test header NRV's are operating correctly
- Check Bodok Seals
- Check all pressure gauges read correctly and zero
- Test line NRV operates correctly, where fitted
- Test operation of manifold
- Test operation of solenoid valves if fitted, or pressure switches differential correct
- Test operation of cylinder changeover switches, checking and recording set pressure of switch
- Check changeover from duty to standby bank
- Check manifold panel indicates 'Duty Bank Empty', 'Standby Bank Running' and alarm systems indicates 'Change Cylinders'
- Test operation of line pressure switch simulating 'Low Pressure' and 'High Pressure' alarm
- Check manifold indicates 'Low Pressure' and 'High Pressure' respectively and alarm system indicates 'Pressure Fault'
- Test operation of duty and standby regulator for creep and stability

- Test operation of load regulator for creep and stability if fitted
- Examine manifold for leaks with all cylinders and header isolation valves open
- Check safety valve is not passing
- Check heater kits are operating correctly, if fitted
- Manifold is online, operating correctly and all alarms normal
- Please ensure all log books are kept up to date after each service
- Check the alarms are received by the switchboard at WGH

Maintenance Task List for Medical Air Plant

- Obtain PTW and advised hospital of alarm changes
- Test operation of ESM has been and confirm satisfactory
- Replacement, Full, and in date cylinders are immediately available for use if required
- Check general condition of plant
- Record dates of regulators, safety valves, filters and desiccant
- Check pressure gauges and differential gauges
- Check drainage traps for correct operation
- Check receivers and Dryers general condition
- Check oil/water separator
- Record dryer dew point where available

Isolate each compressor in turn and check the following. Note that a “Plant Fault” alarm will be given at this stage.

- Anti-vibration mounting bolts
- Air intakes, filters and silencers
- Air intakes housing
- Drive coupling or pulleys and belts
- Inter/After cooler coils/fans
- Oil levels and oil filter

Simulate the following faults for each compressor checking 'Pump Failed' illuminates, the plant control panel selects the 'Standby' pump to duty and 'Plant Fault' is shown on the plant control and alarm panel.

- Control circuit failed
- Motor tripped
- Failed to go on load
- Test compressors operate 'In Hand' if applicable
- Record full load running current for each compressor
- Test plant operation
- Record cut in and cut out pressure for each compressor and back up switch where possible
- Test 'Plant Fault' and 'Plant Emergency' alarms
- Check dryer filter condition
- Check filter auto-drains
- Test dryer operation
- Record dryer dew point if available
- Test dryer pressure switch and dryer 'Pressure Fault' alarm by simulating fault
- Test dryer dew point sensor and 'Dew Point Fault' alarm by simulating fault
- Check dryer selected 'Standby' when faults simulated
- Record which dryer left on line
- Test regulators for creep and stability

Annually check the following:-

- Check dryer inlet solenoid operation
- Plant online, operating correctly, and all alarms normal
- Please ensure all log books are kept up to date after each service
- Check the alarms are received by the switchboard at WGH

Maintenance Task List for Medical Vacuum Plant

- Obtain PTW and advise hospital of alarm changes
- Check general condition of plant

- Check flexible pipework
- Dates of bacterial filters recorded
- Vacuum gauges and differential gauges check and found satisfactory
- Check all cooling fans operation
- Check cooling air flow
- Examine plant for air and oil leaks
- Check receivers and pumps general condition
- Visible electrical connections, check for damage of overheating

Isolate each pump in turn and check the following. Note that a “Plant Fault” alarm will be given at this stage.

- Holding down and fixing bolts
- Anti-vibration mounting bolts
- Exhausts (Inc. labels), filters and silencers
- Drive coupling or pulleys and belts
- Cooling coils/fans – Clean
- Oil levels and oil filter

Simulate the following faults for each pump checking “Pump Failed” illuminates, the plant control panel selects the “Standby” pump to duty and “Plant Fault” is shown on the plant control and alarm panel.

- Control circuit failed
- Motor tripped
- Test pumps operate ‘In Hand’ is applicable
- Record full load running current for each pump
- Test plant operation
- Record cut in and cut out pressures for each pump and back up switch
- Test ‘Plant Fault’ and ‘Plant Emergency’ alarms activate correctly
- Record run hours for each pump
- Record which bacterial filter is online

- Check bacterial filter drain flasks are clean and isolation valves are open
- Plant is online, operating correctly and all alarms normal
- Please ensure all log books are kept up to date after each service
- Check the alarms are received by the switchboard at WGH

Maintenance Task List for Anaesthetic Gas Scavenging Systems

- Obtain PTW and advise hospital of alarm changes
- AGSS Exhauster Unit and Vacuum/Flow Regulating Valve
- Examine fixing down bolts
- Examine flexible pipework and earth bonding
- Confirm operation of "Mains On" and "Running" lamps
- Examine remote switch(s)
- Examine exhaust point for blockage
- Examine exhaust drains for condensation
- Test operation of exhauster unit(s) included
- Test control by operating remote switch
- Test 'Plant Fault' alarm by simulating fault with duty pump and checked standby pump operates for duplex units
- Confirm 'Plant Fault' is indicated on remote switch(s)
- Check vacuum flow regulating valve is secure and free from obstruction
- Check vacuum flow regulating valve filter/silencer
- Check pump silencers and wire mesh for dust and fluff
- Annually check all electrical connections for security and visually inspect cables
- Please ensure all log books are kept up to date after each service
- Check the alarms are received by the switchboard at WGH

AGSS Terminal Units

- Test terminal unit flow rates at 1kPa and 4kPa
- Record readings for all terminal units
- Annual re-commissioning (LEV Test)

- Please ensure all log books are kept up to date after each service
- Check the alarms are received by the switchboard at WGH

In addition to the above tests the system performance requires re-commissioning annually and a formal report issued to satisfy the HSE requirements for a Local Exhaust Ventilation system under COSHH regulations. The complete AGSS system must not be in use to enable the testing to take place. The testing confirms that the performances of the system and terminal units are within specification.

A sample report needs to be included in the tender return. **The contractor must allow for out of hours working. Contractors must liaise with Theatre staff to arrange out of hours access for quarterly AGSS checks and yearly LEV testing.**

Maintenance Task List for Medical Alarm Systems

- Obtain PTW and advise hospital of alarm changes
- Examine each alarm and visible connecting cables for external damage/deterioration
- Check all alarm lamps/LED lights and audible sounds
- Check system failure lamp indicates and audible sounds when mains supply is isolated
- Please provide a day rate for assisting the Trust AP's to carry out tests on the correct operation of pressure switches on local alarm panels.

Maintenance Task List for General Distribution Systems

1. Pipeline

The following will be checked/examined in areas where maintenance task have been carried out and where pipework is visible, such as plant rooms, manifold rooms etc.

- Examine exposed pipe work for damage, corrosion, audible leaks, correct identification and security
- Check Exhausts/inlets are unobstructed and labelling/vermin screens intact

2. Zone Shut-off Valves (Area Valve Service Units)

- Examine security of valve box. Locked and glass/plastic is intact
- Examine for obvious leaks and cleanliness
- Check valve box is labelled in accordance to HTM 02-01, report as necessary

3. Terminal Units (All situations, including pendant, boom and wall mounted)

- Obtain PTW
- Examine for obvious leaks
- Test mechanical function and gas specificity tests

- Test terminal unit for correct flow rate and pressure drop using calibrated test gun

4. Pressure Reducing Stations

- Obtain PTW
- Check general condition of station, report as necessary
- Record dates of PSV and regulators
- Test operation of duty and standby regulator
- Test regulators for creep and stability
- Check gauges read correctly

Phone support

The Client requires access to telephone support 24 hours a day, 365(6) days a year, to be included in the cost of the contract. In the event this is unable to resolve the issue the Client requires:

Reactive call outs/ Response times

The winning contractor shall provide a call-out service 24 hours a day, 365(6) days a year. Any engineer visit must be on-site within four hours of the Client placing the call. The required response/notice times are listed below:

Type of Response	MAX Response Time
Emergency	On-site within 4 hours (24/7)
Scheduled service/maintenance visit notification	5 working days in advance
Scheduled reports	2 working days following completion of works
Complaints Procedure: Report initial action Formal response (when required)	 4 working hours 4 working days

Any reactive work which spans more than one day will be considered as a single job. The Client will only accept a call-out charge on day one. The Client will then be charged the hourly rate for the remaining hours / days to complete the works.

Reporting a fault

If the contractor finds a fault this should be immediately reported to the Estates Maintenance Service Department and site Medical Gas AP or alternative approved manager, and made safe if necessary.

Spare Parts

The winning contractor is expected to be able to obtain all spare parts and consumables required to fully support this contract.

The engineer undertaking the service/maintenance visits must carry all required parts and consumables required to fully complete these visits.

Accreditations

The winning Contractor must have ISO 9001 accreditation.

Contractors Responsibility

While on the premises, the Contractor shall comply, and shall ensure its staff complies with the requirements of the Health and Safety at Work Act 1974 and other relevant legislation, including regulations and codes of practice issued there under and with the authority's own policies and procedures.

All service engineers attending site are to be trained to AP (Medical Gas) level of compliance.

All new Contractors attending site for the first time must go through a Maintenance Site Induction. If an engineer is attending site for the first time, they must be accompanied by a supervisor/manager for site familiarisation.

At the start of the contract and every year thereafter it is the responsibility of the contractor to carry out a site assessment and provide a condition report.

Contractors must report to the Estates Maintenance Services Department before commencing work during normal working hours. During out of hours contractors' staff shall report to the duty engineer. It is imperative that all Contractors also sign out before leaving site.

Visits to the locations are not permitted without the consent of the Authorised Person (Medical Gas).

No work is allowed to commence without reporting to the Estates Maintenance Services Department and a permit to work being issued.

All Contractors' employees who attend site shall be DBS checked by the Contractor. Certificates must be made available to the Authority at the start of the contract.

The Contractor shall provide its staff with a form of identification that is acceptable to the Client and which must be displayed at all times when they are on the Client's premises. Following the Client's site induction, the Contractor's staff will be provided with identification which is to be worn at all times while on site.

The Contractor shall cause as little interference as possible with other activities in or around the locations.

Contractor's Tools and Equipment

The Contractor shall provide all necessary transport and equipment, including but not limited to; tools, instruments, test kits, PPE, access equipment, temporary barriers and signage, and first aid equipment that is necessary to carry out the work safely and as detailed in the Control of Contractors documents.

Documents

The Client requires the following documents to be submitted with your bid or uploaded to the Central Digital Platform:

- Risk assessment and method statements
- Copy manufacturer training certificates for Penlon, MIM and Compair
- HTM training certificates and list of relevant NHS experience for each engineer
- Training skills matrix
- Copy of Data Protection Register ICO certificate
- Copy ISO 9001 certificate
- Sample service report from an NHS site
- Sample LEV report from an NHS site

Review Meeting

The Client requires an implementation meeting with the winning Contractor to be carried out at the start of the contract. This will include a site visit and induction.

Thereafter, the Client reserves the right to request six-monthly review meetings. The schedule should be agreed at the initial implementation meeting and the Contractor is responsible for contacting the Client to make the arrangements.

The agenda of these meetings shall be based upon the Contractor's reports and the maintenance programme and will typically cover:

1. Discussion and agreement of any proposed changes to the Contractor's team including any additional site-specific training needs.
2. Review of the Contractors performance against the following:
    a. PPM completion according to programme.
    b. Response and resolution times for non-planned work.
    c. Review and agreement of the routine service work completed.
    d. Review and agreement of the maintenance work orders, emergency and breakdown work.
    e. Review and agreement of the value of any additional chargeable work that has been carried out.
3. Provide the Supervising Officer with any changes to the site plan and mark-up any new installations which will need adding to the Client's plans.

Invoicing and Payment Terms

The Client will raise an order(s) for the full contract duration at the start of the contract and will pay invoices following service visits.

To ensure smooth payment of presented invoices, please ensure that maintenance contract work is clearly marked as such with the current purchase order number, together with the name, area and location of the equipment being serviced.

Any authorised repairs following the servicing work should be clearly marked as separate line items on the invoice.

For any repairs up to the value of £500 (plus VAT), these can be undertaken after verbal agreement from Estates and a purchase order number will be provided subsequently. For repairs over the value of £500 (plus VAT), a separate purchase order is required before the repair is carried out.

Reporting

On completion of quarterly service visits, in addition to the service sheets, the site AP's must be provided with a single spreadsheet summarising any areas of non-compliance and/or upcoming expiration dates for plant and equipment. This should be presented in a RAG format referencing all relevant details.

Detailed reports outlining all equipment that has been maintained must be completed after every service or reactive visit. Details must include any replacements, issues surrounding safety and quality, parts used, warranty details and any work carried out.

Hard copy service sheets should be left with the Client with an electronic copy emailed to the named Authorised Person within two days of the visit. Details of who needs to be sent an electronic copy will be provided at the site induction.

Service sheets should be signed by the Operations Manager or Operations Officer. If there are any issues, please contact the Estates Department.

Assets

Please see the accompanying Appendix 'Medical Gases' for equipment information and locations.

Terms and Conditions

Bidders should be aware any contracts arising from this procurement process shall be subject to the NHS Conditions for the Provision of Services with Maintenance Schedule. A copy can be obtained from:

https://www.procurementservices.co.uk/media/x5wkkzwg/nhs-terms-conditions-provision-of-services-po-version-pa23.pdf