TRANSNET

TE-IMS-PEMM P&E KDS-SPEC-188

Description: (Specification for the appointment of a service provider who will rent out gas bulk tanks, gas mixers and vaporisers to various Transnet Engineering Workshops for the period of 5 years)				
Compiled By:	F. Herselman		Date:	21/06/2021
Reviewed By:	K. Phalime		Date:	21/06/2021
Approved By	A. Ndamase		Date:	2021/06/21
Approved By	A. Radzilane		Date:	21/06/2021
Approved By	L. Ngcobo		Date:	22/06/2021
Approved By:	S. Zondi		Date:	22/06/2021
Approved By	M. Makgothokga		Date:	23-June-2021
National CRA:			Date:	
Location:	Bloemfontein, Durban, Germiston, Pretoria & Uitenhage			

TRANSNET

Contents

1. Scope of Work

This specification requirement covers all the requirements that will be needed to inform the supplier/vendor/manufacture to carry out what is expected from him/her:

This specification states the minimum requirements relating to the work and in no way absolves the contractor from responsibility for sound engineering practice. Any omissions or sub-standard requirements of this specification must be brought to the attention of Transnet Engineering BLOEMFONTEIN, DURBAN, GERMISTON, KOEDOESPOORT and UITENHAGE at tender stage and optional prices for addressing such omissions must be provided.

The contractor shall supply all the labour, tools, material, equipment, consumables, facilities, testing and supervision required for the supply of the specified equipment at site during erection, pre-commissioning and commissioning activities.

2. Site Inspection

Tenderers must visit the site to familiarize themselves with all the aspects involved relating to the project that must be done. This must be arranged via the Contract Manager. The site inspection certificate will be counter-signed by the Contract Manager on day of the site visit. The tender documents must only be submitted if the site inspection certificate has been signed.

3. Information Required

Tenders shall be in duplicate and will not be considered if full particulars of all relevant equipment and works requested are not submitted at the tender stage, to ensure an objective assessment of the offer can be made. Tenderers shall confirm that the items that they are offering comply at a standard not less than the minimum required requirement asked for in the specifications. Tenderers must comply with these specifications, but alternative offers may, in addition, also be submitted. Such alternative offers must be fully motivated and substantiated.

4. Specific Requirements:

- Comply with the Occupational Health and Safety Act (Act85 of 1993), as amended.
- Adhere to the Construction Regulations of the Occupational Health and Safety Act (Act85 of 1993), as amended.
- Adhere to Pressurised Equipment Regulations (PER) of OHS Act 85 of 1993, as amended.
- The contractor to have SAFETY INDUCTION, and have valid permits when entering Transnet Engineering.
- The contractor to have a SAFETY FILE, SITE INSTRUCTION BOOK on site at all times.
- All measurements and amounts must be stipulated in quote.
- Contractor's name board will at all times be visible.
- A supervisor will be on site at all times.
- Rubble will be removed from site daily.
- The correct PPE must be worn at all times. (Harnesses ropes, etc.)
- During and on completion of the project, there will be SHE inspections and Risk assessments done on the site that the supplier/vendor is working on, which will be reported to the project manager.
- Failure to comply will result in a stop certificate being issued and the supplier will be required to leave the site until the situation is rectified.
- All scaffolding used to be SANS approved.
- All employees who will be working at height to have medical fitness certificate and proof of competency training thereof.
- Valid letter of good standing with Workman's Compensation.
- Failure to comply will result in a stop certificate being issued and the supplier will be required to leave the site until the situation is rectified.
- Comply with Transnet Engineering SHE Specification for contract work Version 02.

5. Technical Requirements:

All equipment and installation whether detailed in this specification or not shall comply with the requirements of the Occupational Health and Safety Act 85 of 1993 as amended. Sudden power losses will not have an adverse effect on equipment and shall not unduly delay return to operation after power is restored.

6. Codes of Practice, Regulations & Standards:

The tenderer shall specify which statutory or industry rules will be applied for the equipment to be working successfully and safely and shall indicate the designed life span.

7. Dimensional Parameters:

The tenderer shall describe the major physical dimensions that are required for ease of operation and installation.

8. Operational Parameters:

8.1 Environment:

The equipment will be required to operating in the climatic conditions of Bloemfontein, Durban, Germiston, Koedoespoort and Uitenhage:

8.2 Safety Features:

The tenderer shall indicate all the safety features installed on the equipment and describe fully its operational standard/s.

8.3 Controls:

The tenderer shall indicate the type of controls and layout to operate the equipment. This must also include backup and emergency systems.

9. Power Supply & Services:

The tenderer shall indicate the electrical power supply and air (if applicable) required operating the equipment.

10. Testing:

The tenderer shall indicate the performance/s standard which the equipment will be subjected to.

11. Specific Requirements:

	REQUIRED	DETAILS OF OFFER Comply (Yes) / Do not comply (No)
	Specification for the appointment of a service provider who will rent out storage bulk tanks, gas mixers , manifolds & vaporisers to various Transnet Engineering Workshops for the period of 5 years	
1.	**Scope of work:**	
1.1	Supply and installation of bulk storage tanks with all gauges, safety valves, and shut off valves for the different gas types used at the different locations.	
1.2	Supply and installation of vaporizers as required.	
1.3	Supply and installation of manifolds & regulators for the different gas types used at the different locations.	
1.4	Supply and install Telemetry Units on all Bulk gas storage tanks.	
1.5	Supply and installation of mixers as required.	
1.6	Connect the new bulk gas storage tanks to the existing gas pipe lines at all sites.	
1.7	Installation or repair of perimeter fence around bulk gas storage tanks.	
1.8	Supply and install all safety signage as required.	
1.9	Supply and install electrical connection as required.	
1.10	Inspection, Testing, Certification and Commissioning of the above mentioned installations.	
1.11	After installation maintenance and repairs.	

	REQUIRED	DETAILS OF OFFER Comply (Yes) / Do not comply (No)
2.	**Installation of bulk storage tanks:**	
2.1	Different types of bulk storages tanks is required to house the following gases: Argon, Carbon Dioxide, Liquid Petroleum Gas, Nitrogen and Oxygen. Refer to Annexure A for the details on type of gas to be stored and the capacity required.	
2.2	Risk assessment and method statement on how the tanks will be installed shall be shared with the Regional Plant Engineer before any installation work can commence.	
2.3	It shall be required that suppliers shall be responsible for any lifting machinery and lifting tackle for the installation of the bulk gas storage tanks. All riggers used for the installation shall be accredited.	
2.4	The bulk gas storage tanks should be installed above ground. Transnet could provide the dimensions, concrete thickness and concrete strength on some of the existing concrete plinths where the storage tanks will have to be mounted. Bidders to ensure that the existing concrete plinths could accommodate the new bulk storage gas tanks. (Bidders to do own assessment on plinths). Bulk storage gas tanks be secured to the plinths and should be strong enough to with stand intense winds.	
2.5	All bulk storage tanks shall be fitted with a GPRS enabled telecommunication level monitoring system. (To notify the gas supplier and user via SMS for refill when the tanks reaches 30% of its contents).	
2.6	Complete Control manifold shall be installed for each bulk gas storage tank.	
2.7	Mixers shall be installed that are capable of mixing at least three gases to any compositional requirement. Gas test certificate on the mixer outlet must be provided every time a new gas mixture is set. Thereafter a monthly gas mixture certificate must be provided. All these certificates must be according to EN ISO 10204 type3.1.	

	REQUIRED	DETAILS OF OFFER Comply (Yes) / Do not comply (No)
2.8	Complete detailed drawing regarding all equipment that needs to be installed for each bulk gas storage tank shall be handed over to the Regional Plant Engineer to sign off before any omission of any installation. This shall in no way absolve the contractor from professional responsibility.	
2.9	The bulk gas storage tanks, piping, vaporiser, control manifolds and mixer shall only be installed by registered and accredited personal. The installer should be registered as Design, installation, maintenance and repairs with SAQCC within applicable gas category. (Argon, Carbon Dioxide, Nitrogen and Oxygen).	
2.11	For LPG storage tanks and accessories – **Category, LP Gas or vapour installation at industrial premises** will be required. **(LPGSASA).**	
2.12	For LPG the contractor will have to submit a plan to the Local Fire Chief (Municipality) for approval before any installation can be done.	
3.	**Bulk storage Tanks:**	
3.1	Storage tanks that will be installed should be designed and constructed in accordance to with PD 5500 or ASME VIII. Any deviation from this design code must be presented and approved by the Regional Plant Engineer.	
3.2	The gas bulk storage tanks should also comply to the following act, regulations & standard:- • The Occupational Health and Safety Act – Act 85 of 1993 (As Amended) • SANS 347 - Standard Specification for categorization and conformity assessment criteria for all pressure equipment. • Pressure Equipment Regulations GNR.734 of 15 July 2009.	
4.	**Certificates:**	
4.1	Certificate of manufacture countersigned by an approved inspection authority.	

	REQUIRED	DETAILS OF OFFER Comply (Yes) / Do not comply (No)
4.2	Test Certificates from an Approved Inspection Authority.	
4.3	Material certificate.	
4.4	Non-Destructive Testing (NDT) certificates for all welds in tension.	
4.5	Pressure test report for vessel.	
4.6	Level gauge calibration certificate.	
4.7	Calibration certificate of pressure gauges.	
4.8	Calibration certificates for pressure relieve valves.	
4.9	Any pressure regulation certification not mention above.	
4.10	COC. Certificate of Compliance for installation.	
4.11	**Note:** All calibration certificates shall be issued by an approved SANAS accredited Laboratory.	
5.	**Vaporizers:**	
5.1	Vaporizers shall be designed and manufactured in accordance with ASME B31.3. Any deviation from this design code shall be presented and approved to the Reginal Plant Engineer.	
5.2	Vaporizers shall be selected for the desired pressure and flow rate.	
5.3	All atmospheric conditions shall be taken in consideration for the design and selection of any vaporizer.	
5.4	Vaporizers shall be properly secured and installed.	
6.	**Mixers:**	
6.1	Mixers shall be installed as per user requirement.	
6.2	Mixers shall be selected accordingly to flow rate and gas mixture percentage.	

	REQUIRED	DETAILS OF OFFER Comply (Yes) / Do not comply (No)
6.3	Mixers shall be calibrated to ensure that the required gas mixture is achieved.	
6.4	All mixers shall be calibrated on a monthly schedule to ensure that the correct gas mixtures are obtained during the contract period.	
7.	**Bulk storage enclosed area:**	
7.1	Bidders to ensure that the areas where any bulk gas storage tanks are installed is properly enclosed. This shall meet the minimum requirements as per legislation. The existing fences must be repaired if damaged.	
7.2	Enclosure shall be equipped with lockable entrance gates to the facility for refilling and maintenance and inspection on the installed equipment.	
7.4	Spare set of gate keys for each bulk gas storage site shall be handed over to the Reginal Plant Engineer. Keys shall be clearly marked to ensure no confusion arise of which key are for which site.	
8.	**Signage:**	
8.1	All bulk gas storage tank areas shall be equipped with the necessary safety signage as required by legislation.	
8.2	Signage shall be mechanically secured that they do not fall off within the contract period. Signage indelible and only removable by deliberate intent.	
8.3	Signage shall be UV. Resistant and shall not fade for a minimum period of five years.	
9.	**Electrical Connections and Earthing:**	
9.1	Transnet Engineering shall supply a supply point for any electrical equipment that needs to be connected to the bulk gas storage tanks for safe operation or monitoring.	

	REQUIRED	DETAILS OF OFFER Comply (Yes) / Do not comply (No)
9.2	Suppliers shall be responsible for all electrical cables, distribution boards, circuit breakers, overload protecting and earthing for the safe operation of the bulk gas storage tanks.	
9.3	The electrical installation from the point of supply to the point of control and consumption shall be done by the supplier.	
9.4	All earthing and bonding shall be done by contractor.	
9.5	An electrical Certificate of Compliance shall be issued to Transnet for each Electrical installation done.	
9.6	Electrical installation shall be done and certified by a Master Installation Electrician. Proof of Registration and certification shall be provided.	
9.7	Earth testing reports shall be handed over to Transnet Engineering to ensure sound mechanical earthing has been achieved.	
10.	**Connecting of bulk gas storage tanks to gas lines:**	
10.1	It is required that all new bulk gas storage tanks are connected to the existing gas lines at all Transnet Premises.	
11.	**Maintenance:**	
11.1	Maintenance of the gas bulk storage tank facility will be responsibility of the contractor.	
11.2	In case of breakdowns, contractor must avail himself within an hour after a call has been logged.	
11.3	Contractor must have employees working standby for afterhours break downs. Standby personnel must be at Transnet facility within an hour after a called was logged.	
11.4	A maintenance schedule must be shared with Transnet Maintenance Planners.	

	REQUIRED	DETAILS OF OFFER Comply (Yes) / Do not comply (No)
12.	**Inspection & Testing**:	
12.1	Annual Inspection and testing will be carried out by the contractor.	
12.2	An inspection & testing schedule must be shared with Transnet Maintenance Planners.	
13.	**Calibration:**	
13.1	Calibration of all equipment that needs calibration should be carried out by the contractor.	
14.	**General:**	
14.1	Any bidder who is sourcing goods or services from third party must "Indicate so via a valid signed agreement with the third party" describing the goods and service in details including the validity period of the agreement.	

12. Installation and Commissioning:

A detailed program (project-plan/gantt-chart) shall be submitted with the tender, indicating the main activities and periods necessary up to handover. The bidder shall submit with their tender a detail erection and installation procedure.

The contractor shall be fully responsible for any damage caused to all supplied equipment and to Transnet Engineering's assets during the installation, testing and commissioning. The supplier shall conduct a risk assessment as to identify anything that might hinder the installation of the equipment.