



SCOPE OF WORK AND SPECIFICATIONS

SUPPLY AND DELIVERY OF 44 kV SURGE ARRESTERS

1. COMPULSORY REQUIREMENTS:

The following schedules shall be returned with the tender document which shall be evaluated:

- *Requirements as per the technical functionality*

2. General

- The purpose of this Scope of Work is to appoint a suitably qualified Contractor to supply and deliver a metal-oxide, gapless surge arresters on the 44 kV incoming supply of a 3 kV DC traction substation. The surge arresters shall protect the substation's high-voltage equipment against lightning and switching overvoltages.

3. Subcontracting

- 3.1 The Contractor shall not make use of any sub-Contractor to perform the works or parts thereof without prior permission from the Project Manager.

4. Financial

- 4.1 Payments shall be made for fully functional equipment only
- 4.2 All prices quoted shall be fixed and firm for the duration of the contract
- 4.3 If the Contractor fails to complete the Services within the time stipulated in this Contract for completion of Services or a part or portion of Services, the Contractor shall be liable to the Employer for an amount calculated at 0.3% of the Contract Price per delayed Day per order, which shall be paid for every Day which shall elapse between the time for due completion and completion of the

relevant Services. However, the total amount due under this sub-clause shall not exceed the maximum of 10% of the Contract Price.

4.4 The imposition of such penalty shall not relieve the Contractor from its obligation to complete Services or from any of its obligations and liabilities under the Contract.

4.5 Rates supplied in the BOQ shall be used to calculate the final payment for equipment.

5. The following activities form part of the scope of work:

5.1. Supply and delivery of Six (6) 44 kV nominal system, 42 kV rated voltage, 33.6 kV continuous operating voltage, metal-oxide gapless surge arrester, 10 kA nominal discharge current, 100 kA high-current impulse, Line Discharge Class 2 and 40 kA pressure-relief capability, suitable for an effectively earthed system and compliant with Transnet Freight Rail BBB0845 and SANS 60099-4.

5.2. The delivery address is Metrorail Electrical depot, 1 Store road Germiston.

5.3. 44kV Surge arresters Technical Specification

5.3.1. Nominal system voltage 44 kV

5.3.2. Rated voltage, U_r 42 kV

5.3.3. Continuous operating voltage, U_c 33.6 kV

5.3.4. Nominal discharge current 10 kA (8/20 μ s)

5.3.5. High-current impulse 100 kA (4/10 μ s)

5.3.6. Line discharge class Class 2

5.3.7. Pressure relief capability 40 kA

5.3.8. TOV, 1 second 48.3 kV

5.3.9. TOV, 10 seconds 45.7 kV

5.3.10. Residual voltage – steep current impulse 123 kV

5.3.11. Residual voltage – 10 kA lightning impulse 111.8 kV

5.3.12. Residual voltage – 500 A switching impulse 90.8kV

6. Measurement of Quality of materials

6.1 The works shall be quantified by the contractor with the assistance of PRASA personnel, the payment will be subject to the rates submitted in the tender.

6.2 Where the condition of the material does not meet the standard as per the specifications, PRASA has the right to reject such material.

7. General

- 7.1 Should any claim arise due to damage caused by any action of work by the Contractor to property of PRASA and his employees or any other person/s, the Contractor shall be held liable to settle such claims at his own cost.
- 7.2 The contractor shall provide transport, equipment, tools, consumables, supervision, protection, and labour necessary to successfully complete the contract.

8. Safety

- 8.1 The Contractor shall comply with requirements of safety legislations and regulations in all respects.
- 8.2 All drivers shall be in possession of valid driver's licenses and Public Drivers Permits (PDP) where applicable. Crane operators will be required to have a valid Crane Operator's certificate. All vehicles shall be roadworthy.
- 8.3 The Contractor shall be responsible for all protective clothing and –equipment for his employees. All employees required to climb structures shall be issued with suitable harnesses.
- 8.4 The contractor shall be responsible for security of personnel and material onsite as well as during transit.
- 8.5 All work shall always comply with the E7/1 Specification attached hereto.
- 8.6 Normal protection measures in accordance with the Protection Manual shall apply.
- 8.7 An effective safety procedure to be followed by all personnel on any work site in the case of approaching rail traffic shall be compiled by the Contractor and implemented before any work commences. This procedure shall be updated whenever the need arises, and any changes shall be communicated to all employees on a works site before work proceeds.
- 8.8 It is the requirement of this contract that the contractor should provide PRASA with a detailed safety plan prior to being issued with a site access certificate, in accordance with the latest version of the OHS Act and the SPK7 and the E4E.

9. Measurements and payments

- 9.1 Claims for payment will be made monthly.
- 9.2 Any rejected material will not be paid.
- 9.3 All rates in the schedule of quantities must be made per unit as requested and should be an all-inclusive rate.

9.4 The rate quoted by the Tenderer(s) and accepted by PRASA must hold well till the completion of the work and shall not be subject to any escalation due to increase in the local market rates for materials & labour. No claim on this account whatsoever shall be entertained at any stage including the extended period.

9.5 The amount of the Preliminaries to be included in each monthly payment certificate shall be assessed as an amount prorated to the value of the work duly executed in the same ratio as the preliminaries bears to the total of prices excluding any contingency sum, the amount of the Preliminaries and any amount in respect of contract price adjustment if provided for in the contract.

10. Payment Certificate

10.1 On or after the assessment date, the Supervisor and the Contractor will together assess the quantities of the progress on each item in the Bill of Quantities and complete the Progress Assessment Detail form, where after the Progress Assessment Certificate will be issued.

10.2 The Contractor shall then submit a VAT invoice and attach the above Progress Certificate for payment by the Employer.

10.3 Contractor to provide the Employer with the necessary details regarding banking details to enable the Employer to make electronic payments.

11. PRICING AND THE WORKS.

11.1 The contractor is required to provide firm prices/ rates for material for the duration of the contract.

11.2 The contract period shall be inclusive of the delivery and warranty period of 12 months of the supplied material.

11.3 The costs for normal servicing shall be reflected separately and shall be paid quarterly for the duration of the service period.

12. PENALTIES

12.1 If the Contractor fails to complete the Services within the time stipulated in this Contract for completion of Services or a part or portion of Services, the Contractor shall be liable to the Employer for an amount calculated at 0.05% of the Contract Price per delayed Day per order, which shall be paid for every Day which shall elapse between the time for due completion and completion of the relevant Services. However, the total amount due under this sub-clause shall not exceed the maximum of 10% of the Contract Price.

- 12.2 The imposition of such penalty shall not relieve the Contractor from its obligation to complete Services or from any of its obligations and liabilities under the Contract,
- 12.3 PRASA may set off or deduct from the fees due to the Contractor any penalty amounts due and owing by the Contractor in terms of clause 4.3

13. Handing over

- 13.1 The handovers shall be for each portion of the work when the Electrical System is tested and commissioned to the satisfaction of the Technical Manager, in accordance with the details as set out in the handing over documentation of PRASA.

BILL OF QUANTITIES

Item	Description	Unit	Qty	Unit Cost	Total Cost
1.	Supply and delivery of 44 kV metal-oxide gapless surge arrester, 42 kV Ur, 33.6 kV Uc, 10 kA, Class 2	Each	6	R.....	R.....
		TOTAL EXCL. VAT			R.....
		VAT @ 15%			R.....
		GRAND TOTAL			R.....

Technical functionality

CRITERIA	WEIGHT	SCORES
Organizational Experience (N.B. Provide for each successfully completed project/s in the following sequence: Copy of an appointment letter/s(on a company letterhead), description of the project, Client name, Client. Contact (i.e., email and office number), Project start date, project end date, extension of time where applicable, contract value inclusive of VAT. Furthermore, attach completion certificate signed by client or letter from the client confirming successful completion of the project.)	50	Score will be based on successfully executed and completed similar projects supply and delivery and/or Supply and installation of surge arresters within 5 years 1: Zero (0) Similar Projects/non-submission/incomplete submission= 0 2: 1 Similar project = 10 points 3: 2 Similar projects =20 points 4: 3 Similar projects= 30 points 5: 4 Similar projects = 40 points 6: 5 and above Similar projects=50 points
Delivery commitment A bidder shall provide a letter on company letterhead signed by the duly authorized official committing to deliver the materials within 4 weeks.	50	No information provided = 0 points. 1: Letter provided with a delivery period > 4 weeks = 10 Points 2: Letter provided with a delivery period ≤ 4 weeks = 50 points

Bidders shall score a minimum of 70 points to proceed to the next stage