

SCOPE OF WORK

Tender No.:

Description: Foskor Mine –Capital Electrical Spares.

1 INVITATION TO TENDER

This document describes the scope of work for supply and delivery of Neutral Earthing Resistors (NERs) at Foskor as capital electrical spares.

2 COMPANY BACKGROUND

Foskor is one of the world's largest producers of phosphate rock (concentrate) and phosphoric acid. It is one of the world's few vertically integrated producers of phosphoric acid and is the second largest supplier to India, the world's largest consumer of phosphoric acid.

The Company owns and mines phosphate resources and beneficiates the mined material to produce a phosphate concentrate at Phalaborwa, in the Limpopo Province of South Africa. The phosphate concentrate is sold locally and also transported to the Richards Bay plant on the coast of Kwa-Zulu Natal to produce phosphoric acid, sulphuric acid and granular fertilisers MAP and DAP from phosphoric acid and is the leading supplier of fertilisers to South Africa. In all about 95% of the phosphoric acid is exported and the granular sales are divided between exports and local markets. Since 1951 Foskor has supplied more than 95% of South Africa's fertiliser requirements.

3 APPLICABLE STANDARDS

- a) Foskor Electrical COPs.
- b) Foskor's Engineering Specifications: EE-1, GE-1, and EC-1
- c) SANS 1274 Coating by powder coating Process
- d) SANS 1091 National colour standards for paints
- e) SANS 10201 Medium voltage earthing devices incorporating NECRTs, NECRs, and NERs.
- f) SANS 10200 Neutral earthing in medium voltage industrial power systems
- g) SANS 60255-127 Measuring relays and protection equipment
- h) SANS 61869-1, -2 & -3 Instrument transformers

4 SCOPE BACKGROUND

This scope of work outlines the requirement for the supply and delivery of 12 (Twelve) Neutral Earthing Resistors (NERs) at Foskor Phalaborwa.

Foskor's stock of spare Neutral Earthing Resistors (NERs) is currently depleted. These resistors are vital to Foskor's medium-to-high voltage electrical systems, as they protect transformers by reducing earth fault currents and triggering circuit breakers to isolate electrical faults. A typical NER unit is shown in Figure 1.



Figure 1. *Neutral Earthing Resistor.*

The following are the scope requirements and equipment specifications:

4.1 Scope

- a. Supply and delivery of nine (9) 550V NERs to Foskor Phalaborwa.
- b. Supply and delivery of two (2) 3300V NERs to Foskor Phalaborwa.
- c. Supply and delivery of One (1) 6600V NER to Foskor Phalaborwa.

4.2 Specifications

The summary and specifications for the NERs are as follows:

a) 550V NER Specifications

Description	Requirement
Rated voltage	550V
Cooling medium	Dry type
Enclosure material	Mild steel
Enclosure finish	Powder coated
Colour	Orange
Continuous current	10A for 10 sec
Protection Relay	1 Amp ADIT relay(110VAC)
Monitoring relay	NERM (110VAC)
CT ratio	100/1
Resistance	31 ohms
Ingress Protection	IP55 minimum
Mounting	Wall mount

b) 3300V NER Specifications

Description	Requirement
Rated voltage	3300V
Cooling medium	Dry type
Enclosure material	Mild steel
Enclosure finish	Powder coated
Colour	Orange
Rated fault current	12.5 A for 10 sec
Maximum current	300A
Protection Relay	1 Amp ADIT relay(110VAC)
Monitoring relay	NERM (110VAC)
CT ratio	100/1
Resistance	6.3 ohms
Ingress Protection	IP55 minimum
Mounting	Wall mount/ Floor Installation

c) 6600V NER Specifications

Description	Requirement
Rated voltage	6600V
Cooling medium	Dry type
Enclosure material	Mild steel
Enclosure finish	Powder coated
Colour	Orange
Continuous current	15 A for 10 sec
Maximum current	300A
Protection Relay	1 Amp ADIT relay(110VAC)
Monitoring relay	NERM (110VAC)
CT ratio	100/1
Resistance	12.7 ohms
Ingress Protection	IP55 minimum
Mounting	Wall mount/ Floor installation

5. LANGUAGE OF DOCUMENTS AND MANUALS

Note! - All Documents and Manuals must be in English

6. TRANSMITTAL OF DOCUMENTS AND MANUALS

Documents and Manuals to be submitted in the following formats:

Type of Document	Hard Copy	Electronic Format
Manuals	X	X
Drawings	X	X
Reports	X	X
Data Books	X	X
Software		X

Hard Copy: Book or binding arch file format and must be durable and of high quality.

Soft Copy: Manuals, Reports and Data Books – Word, Excel, PDF, etc.

Drawings – AutoCAD and hand delivered.

Storage – Compact Disk or Data traveller

7. SPECIFICATIONS, PROCEDURES, REQUIREMENTS AND RESPONSIBILITIES

The successful Bidder is expected to:

- 1) Comply with all the requirements of FOSKOR COP 25, Service Provider Control.
- 2) Supply requested equipment, labour, and expertise to provide to install, commission, train and maintain as specified in this scope of work.
- 3) Be a recognized expert, who specializes in the supply, installation, commissioning in LV and HV networks.
- 4) Collect from the source of issue and deliver to the work site all required spares, materials, consumables, and every item issued for the work to be completed successfully.
- 5) Be responsible for the cost of his/her appointed sub-service providers and inspectors.
- 6) The Appointed Bidder shall indicate all work or part thereof to be handled by the subcontractor.
- 7) The Bidder shall report any other defects and irregularities noted during the execution of allocated work.
- 8) All reporting shall be done in writing and in an acceptable format.
- 9) The Bidder shall ensure that all service, supervision, quality checks are of acceptable standard.
- 10) The Bidder shall provide, if requested, all applicable documentation to this SOW and Tender Evaluation Criteria
- 11) The Bidder shall guarantee all rendered services for period at least 12 months after date of acceptance (any exclusion shall be highlighted and agreed by both parties in writing before acceptance. If no agreement is reached, all services rendered shall be considered guaranteed as stipulated)

8. QUALITY REQUIREMENTS

The supplier must give at least guarantee of 1 year, and therefore any defects that occur within one year from the date of delivery of the NERs will be rectified or repaired by the supplier free of charge.

- (1) The Bidder must provide the necessary quality management systems and plans to ensure that the quality of the work complies with the requirements of this scope of work.
- (2) The Bidder shall during all phases of this project comply with the FOSKOR approved Quality Assurance Plan
- (3) The Bidder shall be responsible for all the resources required for executing the Quality Management System including but not limited to, developing the Quality Assurance Plan & performing the Quality Control measures to ensure that the deliverables comply to the specifications & standards mentioned in the scope of work.
- (4) Any change requests / additional work resulting due to inadequate quality management system will be to the account of the Bidder.
- (5) FOSKOR might appoint a third party for Quality Control Inspections
- (6) The Bidder may have to provide an approved quality system for all work executed. This will include the following but is not limited to:
 - i. Quality plan
 - ii. Quality Assurance
 - iii. Quality control

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- (7) Foskop envisage a complete quality System driven by the Bidder and this system/plan will be approved by Foskop and the appointed engineer (if applicable).
- (8) Foskop may appoint a third party to measure and control Foskop's interest in the terms of quality in this contract, and the Bidder is expected to work in conjunction with this company.
- (9) Hold points will be discussed and finalized with the successful Bidder based on the approved Quality plan.

9. LEGISLATIVE REQUIREMENTS

- 1) The successful or appointed Bidder shall comply with:
 - (a) The Mines Health and Safety Act with Regulations (Latest revision)
 - (b) The National Road Traffic Act with Regulations (Latest revision)
 - (c) All applicable national and international legislative requirements and regulations.
 - (d) Foskop (Pty) Ltd. COP (Compendium of Procedures) No. 25 for Service Provider Control (Available on request)
 - (e) Foskop (Pty) Ltd. COP (Compendium of Procedures) No. 59 for Trackless Mobile Machinery (Available on request)
 - (f) All Foskop procedures and policies applicable to the successful application of the contract. (Available on request)
- 2) The successful or appointed Bidder shall comply with the following Environmental Specifications, Policies and Procedures:
 - a) COP 41 Housekeeping and workplace organisation
 - b) COP 49 Waste Management
 - c) COP 51 Resource conservation, energy, and materials
 - d) COP 70 Storage of petroleum products and other hazardous material
 - e) National Environmental Management Act 107 of 1998 (NEMA)
 - f) National Environmental Management Waste Act 59 of 2008 (NEMWA) as amended.
 - g) The successful Bidder shall include in his/her SAFETY FILE, and comply with, the following documents:
 - i. Environmental Aspect and Impact Register (Applicable to this contract).
 - ii. Environmental Objectives and Targets (Applicable to this contract).
 - iii. Waste Management Plan (Applicable to this contract).
 - iv. FOSKOR Atmospheric Emissions License (Copy available on request)
 - v. FOSKOR Waste Management Licence (Copy available on request)

vi. FOSKOR Water Use Licence (Copy available on request)

3) Before entering and operating a service vehicle (Own vehicle) on the Foskop site, the appointed Bidder shall:

- a) Ensure that his driver/s are in possession of a valid national driver's licence for the specific class of vehicle to be used on site.
- b) Ensure that his service vehicle complies to the requirements of Foskop COP 59, Trackless Mobile Machinery, before entering a red-flag area (i.e phosphate and magnetite stockpile areas).

Minimum requirements: Vehicle fitted with conspicuity marking standards according to DMR (Department Mineral Resources) guideline for vehicle visibility livery, rotating orange strobe light, buggy-whip flag and 9.0 kg SANS approved fire extinguisher.

- c) The appointed Bidder shall, before entering and operating a vehicle on the Foskop premises:
 - i. Obtain permission from the Foskop Safety & Security manager to operate his nominated service vehicle/s on the Foskop site. (Forms will be provided)
 - ii. Obtain a certificate of fitness from the Foskop Light Vehicle maintenance workshop supervisor or appointed Foskop inspector for his nominated service vehicle/s. Inspections conducted daily between 08:00 and 08:30 and between 13:30 and 14:00 (Excl Fridays) at the Light Vehicle Maintenance workshop.
 - iii. Submit the above permission and COF in at the main security office for issue of a vehicle access disk.
- d) Ensure that the service vehicles have been inspected (Daily) in accordance with the Foskop standard (COP 59) to ensure that they are safe and fit for use. (Forms will be provided)
- e) See Foskop COP 59, Trackless Mobile Machinery for details.

4) Before entering and operating/working on the Foskop site the appointed Bidder shall ensure that his driver/workmen are:

- a) Briefed on the required task and have been informed of any abnormal conditions/situations.
- b) Physically, emotionally, and mentally fit to perform their duty.
- c) Issued with the necessary PPE (Personal Protective Equipment) to safely operate his service vehicles and perform the duty of maintaining, servicing, inspecting of mobile equipment.
- d) Before commencement of work:
 - i. All tools and equipment shall have been inspected and tested to be in a good and safe working order.
 - ii. All workmen have participated in the completion of a standard Foskop site risk assessment (Commonly known as a HIRA or Hazard Identification and Risk Assessment) and taken appropriate actions to mitigate any identified hazards.

5) The Bidder shall perform NO lifting or rigging tasks. (Request assistance from the requesting Foskop supervisor)

- 6) Before entering and operating/working on the Foskor site the appointed Bidder shall ensure that their portable electrical equipment have been tested and declared safe to use by the Foskor electrical services workshop.
- 7) Although every effort has been made to ensure that the information contained within this document is correct, it remains the responsibility of the bidder to verify actual status and site conditions. (A site visit can be arranged)

10. MINIMUM CRITERIA FOR PERMITTING CONTRACTORS ON SITE

A. BACKGROUND

Foskor (Pty) Ltd would like to ensure that all Bidders are aligned with our goals to improve our SHEQ performance whilst ensuring compliance with the legal framework in which Foskor operate.

To achieve this, Foskor would like to draw attention to some of the minimum requirement that must be in place before any order is placed with a supplier of services without limiting or distracting from the full SHEQ requirements, Engineering Standards or Codes of Practices.

The requirements (both commercial and safety) must therefore be read in harmony and implemented without conflicting or compromising each other. This document is designed to communicate to all Bidders as well as Foskor departments the absolute minimum requirement that is needed to ensure compliance with the Foskor standards as well as the MHSA. The requirements for permitting suppliers on site will differ depending on a number of considerations such as the nature of the services, consideration for the Health and safety risk as per the scope of work, the reason for inclusion on the data base and the capacity.

The guidelines is applicable to all Bidders that perform work on the Foskor Phalaborwa site for a duration exceeding 5 days per year (either continuous or total days)

B. SCOPE OF WORK

The scope of work determines the nature of the services that are procured and thus the absolute minimum requirement that is needed to ensure compliance with the Foskor standards as well as the MHSA. It is therefore imperative that the SHEQ requirements are clearly defined in enough detail at the start of the procurement process, namely in the scope of work.

C. SHEQ REQUIREMENTS

i. PPE

Any Bidder that does not provide employees with his/her own personal protective equipment, use it incorrectly or use damaged PPE or equipment in the opinion of an authorised Foskor official, will be prevented from entering the Foskor site.

All Bidders must ensure that the workers wear the PPE in accordance with the project area's requirements or as required by Foskor.

11. SITE GEOGRAPHY

The plant is located at Phalaborwa, Limpopo, South Africa

A. AMBIENT CONDITIONSS

- Ambient temperature

Summer	35 Degrees Avg	50 Degrees Max
Winter	17 Degrees Avg	2 Degrees Min

- Site Altitude: 380m
- Prevailing wind direction: Generally South Easterly - Maximum design velocity 40m/s (144km/h)
- Very dusty conditions
- Average annual rainfall = 540 mm

12. FOSKOR GENERAL ENGINEERING SPECIFICATIONS

The below-mentioned general engineering specifications shall be consulted prior to finalization of any design or specification).

 FOSKOR LIMITED	GENERAL ENGINEERING SPECIFICATIONS INDEX			DOC NO: Index REVISION: 0 ISO 9001 REF: 7.5.1 ISO 14001 REF: 4.4.6 OHSAS18001 REF: 4.4.6
DOCUMENT NUMBER	DOCUMENT TITLE	REVISION NUMBER	DATE REVISED	LOCATION
GS001	General Design Information	0	01/11/2011	
GS002	Engineering drawings	0	01/11/2011	
GS003	Quality control procedures for general fabrications	0	01/11/2011	
GS004	Site work associated with civil construction works	Future		
GS005	Concrete and formwork	0	01/11/2011	
GS006	Masonry and building work.	Future		
GS007	Plate and workshop fabrications	0	01/11/2011	
GS008	Welding standards and procedures	0	01/11/2011	
GS009	Structural fabrication and erection.	0	01/11/2011	
GS010	General Mechanical Equipment	Future		
GS011	Piping	0	01/11/2011	
GS012	Pressure vessels	0	01/11/2011	
GS013	Painting and Protective coatings	0	01/11/2011	
GS014	Rubberlining	0	01/11/2011	
GS015	Fencing	0	01/11/2011	
GS016	Roofing and side cladding	0	01/11/2011	
GS017	Fuel for use in combustion engines	0	01/11/2011	
GS018	Lubrication	0	01/11/2011	
GS019	Bund walls for liquid containment	0	01/11/2011	
GS020	General Purpose Valves	0	01/11/2011	
GS021	Gearboxes	0	01/11/2011	
GS022	Repair of Chain blocks and Lever hoists	0	01/11/2011	
GS023	Slurry Pumps	Future		
GS024	Overhead Cranes	Future		
GS025	Conveyors	Future		

Contrator /Supplier - Please ensure that you have the latest copy of Specifications before any activity is committed

SPECIFICATION NUMBER	REVISION	TITLE
GV - 1	Latest Revision	General Engineering Specifications Mine Health & Safety Act for contractors
GV - 2	Latest Revision	Conditions for admission to and employment within the Foskor works
GM - 3	Latest Revision	Surface preparation and protection specification
GM - 2	Latest Revision	Engineering Specifications – Mechanical erection
GS - 1	Latest Revision	Engineering Specifications – Structural steel work, plate work, fabrication, and installation.
GC-1	Latest Revision	Engineering Specifications – Civil, excavation and concrete work
GC-3	Latest Revision	Engineering Specifications – Packing and grouting
GQ-1	Latest Revision	Engineering Specifications – Quality control
GI-4	Latest Revision	Instrumentation specifications
GA - 2	Latest Revision	Recording of underground services & structures
GS - 2	Latest Revision	Metal roofing & cladding of structures
GM - 1	Latest Revision	Mechanical Equipment
GM - 5	Latest Revision	Pipe standards
GM - 6	Latest Revision	Engineering drawing & document requirement
Foskor Electrical Specifications	Latest Revision	Foskor Electrical Specifications
Applicable FOSKOR COP's	Latest Revision	Applicable FOSKOR COP's

ELECTRICAL SPECIFICATIONS		
SPECIFICATION NUMBER	REVISION	TITLE
EE-1	Latest Revision	Motor Control Centre & Switchgear
EE-2	Latest Revision	Squirrel Cage Induction & Wound Rotor Motors
EE-11	Latest Revision	Power Factor Correction Equipment
GE-1	Latest Revision	Design Criteria for Electrical Installations
GA-1	Latest Revision	Procedures for Enquiries & Tenders
GD-1	Latest Revision	General Requirements for Design, Project Management & Tenders
GD-2	Latest Revision	Engineering Change Order (E.C.O) Procedure
GM-1	Latest Revision	Mechanical Equipment
GM-5	Latest Revision	Pipe Standards
GM-6	Latest Revision	Engineering Drawing & Document Requirements

GM-8	Latest Revision	Surface Protection
GM-3	Latest Revision	Painting & Surface Protection of Steel
GS-1	Latest Revision	Structural Steel work & Plate work Fabrication & Erection
GQ-1	Latest Revision	Quality Control
GI-1	Latest Revision	General specifications & Procedures
GI-2	Latest Revision	Installation & Commissioning
GI-3	Latest Revision	General Equipment Specification
GI-4	Latest Revision	Field Instrumentation Specification

13. PROJECT MANAGEMENT - SERVICE PROVIDER

- 1) Nominate a single window of communication to Foskop.
- 2) Attend meetings as agreed during the project kick off meeting.
- 3) All meetings will be held at FOSKOR offices, unless otherwise stated.
- 4) The Bidder to provide updated project management plans on progress as defined by the Foskop Project Engineer

14. GENERAL CONDITIONS

- Extension on the promise completion or Milestone date may be requested but needs to be approved by Foskop. The contractor should be in possession of a formal document issued via Foskop Procurement indicating that this request was approved
- Any additional works not defined in the order needs to be approved by Foskop in writing before any work commence

Description	Condition	Duration
Penalties	0.5 % per Week	Late Delivery after promised completion date
Performance Bond	0% of Contract Value	0 Year after completion
Retention	5 % of Contract value	Release after 12 months of Commissioning of the system
Type Of Contract	None	None
Escalation	None	None

A. DELIVERY

On delivery of the NERs, the contractor will issue Foskop with a Project file with all work done, evidence and the Handover certificate which will be signed off by:

- i. Bidder's site representative
- ii. Foskop representatives

The handover certificate will be accompanied by the following document.

- i. Quality file
- ii. Design documents

- iii. Manuals and drawings

15. TENDER EVALUATION CRITERIA

As part of the process to assist with the evaluation of the bidder's proposal/quotation and to make an informed decision in the awarding of this tender, the following shall be adhered to

- 1) The following tender evaluation criteria will be used for adjudicating the Contractor submitted tender.
- 2) Provide the required documentation as requested in the "Proof / documents to be submitted" column of the Pre-qualification, Technical and Commercial evaluation tables below. Be specific when submitting documents by ensuring it answers the item specified in their respective Annexures e.g. Information required to be filed under Annexure A, shall be filed, and submitted under Annexure A,
- 3) Please use the annexure number as indicated to identify proof submitted.
- 4) Failure to submit the relevant documentation as requested in the Evaluation criteria document may lead to a disregard of the submitted tender.

A. TECHNICAL EVALUATION CRITERIA

Technical Criteria Description	Max. % Contr.	Proof/documents to be submitted	Proofs and supporting documents must correspond to the sequence of the annexures
1. Experience			
a) Previous supply of NER related equipment Scoring: • No proof for supply of equipment submitted-----0% • Proof for supply of equipment submitted -----25%	25%	Provide proof with • project technical description • valid contact numbers of client of the previous supply and delivery of NER/Transformers/NEC/NECRT.	Annexure A
b) Previous factory reports Scoring: 550V test report-----5% 3300V test report-----5% 6600V test report-----5%	15%	Provide previous NER factory test report for 550V, 3300V 6600V.	Annexure B
2. Quality and Assurance			
a) Quality documents for the NER manufacturing Scoring: • Quality Planning-----7.5% • Quality assurance-----7.5% • Quality Control -----7.5% • ISO 9001 Certificate-----7.5%	30%	• Provide quality plan, assurance and control for the manufacturing of the NERs. • Provide ISO9001 certificate from the manufacturer of the NERs.	Annexure C
3. Operational Capabilities			
a) Lead time Scoring: >10 weeks-----10% 9-10 weeks-----20% =/<8 weeks-----30%	30%	Provide the lead time for the supply and delivery of the Neutral Earthing Resistors (NERs) to the Foskor site, measured from the date of official order placement.	Annexure D
To qualify for the second evaluation phase (commercial) your company need to score a minimum of 70% on the technical evaluation			

16. PRICING SCHEDULE

Tender No.:Scope of Work: Capital Electrical Spares

Description: Foskor Mine – Capital Electrical Spares (Supply and Delivery of Neutral Earthing Resistors)

Pricing conditions:

- A. Quotation prices to be valid for at least the duration of the contract period.
- B. Attached to the official quotation, the bidder is to submit a detailed description of intended rate increases if any. (as an example, increases based cpi adjustments)
- C. If any minimum requirements may alter or added for whatever reason, they will be brought to the attention of the bidder before the closing date for the submission of tenders or be added and highlighted on the tender.
- D. Any other optional support or guarantee not mentioned in this scope may be noted on the official tender.
- E. Any additions to the scope (based on the knowledge and experience) should be conspicuously indicated and quoted accordingly.
- F. Amendments, corrections, or alternatives necessary for legal and/or technical compliance should be clearly stipulated in a company cover letter.
- G. Please only make use of this pricing schedule for pricing
- H. Failure to submit your company's bid on this pricing structure will result in the immediate disqualification.

A. UNITS OF MEASUREMENT

The units of measurement described in the Bill of Quantities are metric units. Abbreviations used in the Bill of Quantities are as follows:

%	–	Percent	m ³	–	cubic metre
h	–	Hour	m ³ .km	–	cubic metre-kilometre
ha	–	hectare	mm	–	millimetre
kg	–	kilogram	MN	–	meganewton
kℓ	–	kilolitre	MN.m	–	meganewton-metre
km	–	kilometre	MPa	–	megapascal
km-pass	–	kilometre-pass	No.	–	number
kPa	–	kilopascal	P C sum	–	Prime Cost sum
kW	–	kilowatt	Prov. sum.	–	Provisional sum
ℓ	–	litre	sum	–	lump sum
m	–	metre	t	–	ton (1 000 kg)
m ²	–	square metre	W/day	–	Workday
m ² .pass	–	Square Metre-Pass			

B. PRICING SCHEDULE / SCHEDULE OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT PRICE (R)	TOTAL AMOUNT (R)
1	Supply 550V NER	9		
2	Supply 3300V NER	2		
3	Supply 6600 V NER	1		
4	Delivery to Foskor Phalaborwa			
5	Other (Please specify)			
TOTAL VALUE				

All price alterations must be signed for by the bidder confirming that such changes were made by the Bidder.

PLEASE NOTE THAT PRICE CHANGES WITHOUT A SIGNATURE WILL LEAD TO THE DISQUALIFICATION OF THE BID SUBMITTED.

NOTE: The onus lies with the tenderer to make sure that all formulas and calculations are correct. Calculation errors discovered during the evaluation process will be logged as a non-conformance and the tender/quotation will therefore be disregarded.