

SCOPE OF WORK

The scope of work provides the requirements for the supply, removal, installation and replacement of all C&I cables, junction boxes, cable trunking, labelling, termination blocks, lugs, plugs as well as fibre optic cabling and related accessories used at Lethabo Power station. The supply of the cables and associated items shall comply with C&I cable standards and cable installation as per original design. Lethabo Power Station makes use of multiple cable types, cable trunking, junction boxes, termination lugs and plugs of various types and sizes. The services required is on as and when required basis, i.e., during online operations, opportunity maintenance, interim repairs (IR) or general overhaul (GO). The execution of the works for all plant areas (Units and Outside plant) shall be carried out by four Semi-Skilled, four Mechanics and an Authorised Supervisor (C&I Technician) who will provide the service required but not limited to the following:

- 1 Report to Contract Manager at Lethabo Power Station on as and when required basis
- 2 Provide a standby team of not less than one Supervisor, two C&I Mechanics and two Semi-Skilled for any emergencies or after-hours activities that might be required to be executed. In the event of an emergency, it might be required to work 12-hour shifts
- 3 Ensure the availability of at least two (2) Authorised Supervisors (AS's) for the duration of the service period
- 4 The semi-skilled employees who will be assisting with executing the SOW shall have a minimum of a matric certificate / N3 certificate with at least 2 years' experience
- 5 The qualifications of the Supervisor shall be a National Diploma 3 years' experience (L/C) OR N3 with at least 6 years' experience in a similar industry
- 6 The qualifications & experience of the mechanics who will be executing the SOW shall have a minimum qualification N3 (Artisan) with at least more than 2 years' experience in a similar industry
- 7 Inspect, identify and draft a report indicating all damages cabling that need to be removed, (Supervisor)
- 8 Plan work to be executed two days in advance for all planned activities related to this service contract
- 9 Provide a report based on the analysis of critical plant defects identified during the provision of the services
- 10 Provide the required resources for any major events, e.g. fire related incidents where cables, junction boxes and related accessories have been burnt or damaged which need to be removed, replaced, terminated and tested with the intention of returning the plant back to service within the shortest duration possible
- 11 Provide a report based on the analysis of critical plant defects identified during the provision of the services
- 12 Draft (where necessary) and supply all required cables and consumables
- 13 Draft and supply all required C&I copper and fibre optic (glass and plastic) cabling reports
- 14 Provide copper and fibre optic cabling termination tools and any other tools required for the execution of the works
- 15 The contractor shall provide specialised tools and equipment such as, OTDR for Fibre optic testing, ProfiTrace or equivalent for Profibus, Asi Diagnostic tools for Asi Cables, Standard continuity testers (with calibration certificates)

- 16 Supply, install and replace junction boxes with their internals (DIN mounting plate and termination blocks) as per original design
- 17 All junction boxes, cable glands, etc shall be of an approved standard (IP65 or I66) water and weather tight proof
- 18 All connections at junction boxes, field instruments and marshalling cabinets must be made using compression crimp connectors when required
- 19 All cables shall have identification tags at each end These tags will bear the cable number as listed in the cable schedule
- 20 Supply, install, replace and terminate all types of C&I cables in the plant and equipment room
- 21 All materials supplied shall be new, appropriate for the design purpose and installed according to the manufacturer of the material
- 22 The service provider's personnel executing the work activities shall have the necessary knowledge, skills, and competencies required to execute the task in order to avoid delays and the business failing to meet its customers' expectations
- 23 To assess and manage risks pertaining to the management of work or activities that may hamper the achievement of set objectives, resulting in the risks materialising and subsequently non-achievement of the plant operational objectives
- 24 To use authentic parts that guarantees compatibility and performance consistency with the control system
- 25 The service provider is required to conduct in-process inspections and tests to satisfy that all requirements of the SOW are met When in-process inspections are not conducted, products and services that do not conform to the specifications may be handed over to the client resulting in reworks, delays, and cost escalations
- 26 Supplier to adhere to agreed-upon lead times when providing products or services (Realistic timeframes, Contingency Plans, Regular Updates, Post-Delivery maintenance)
- 27 All cabling and associated work shall be executed in accordance with the Eskom approved standards, codes of practice and the manufacturer's recommendations The following Eskom standard needs to be adhered to
 - (a) Generation Requirements for Control and Power Cables for Power Stations Standard (240-56227443)
 - (b) Control & Instrumentation Field Enclosures and Cable Termination Standard (240-56355815)
- 28 The cable glands used shall be appropriate for the cable
- 29 Provide transportation to carry materials in, out and around in the station during work execution
- 30 The contractor shall use the correct tools to remove and /or terminate all types of cables, copper, and fibre
- 31 The contractor shall ensure housekeeping is conducted after work execution
- 32 Work with engineering, maintenance and any other stakeholders to ensure that all work is executed as per the scope determined

The scope of work for the supply and installation of fibre optic cabling and accessories includes the following

1. Project Planning & Design

- Site survey and assessment of existing infrastructure
- Determining cable routes and network layout

- Preparing detailed engineering drawings and as-built documentation
- Compliance with industry standards (e.g., ISO/IEC 11801, TIA/EIA-568, ITU-T G 652)

2. Material Supply

- Fiber optic cables (single-mode and multi-mode)
- Fiber optic patch panels, enclosures, and distribution frames
- Optical Fiber connectors, adapters, and splicing accessories

3. Installation Works

- Ducting, racking and conduit installation for underground fibre
- Overhead fibre installation using poles or aerial methods
- Fiber cable pulling, routing, and securing within cable trays, conduits, or ducts
- Splicing and termination at both ends (fusion splicing or mechanical splicing)
- Fiber patching to active equipment such as switches, routers, and ODFs

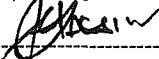
4. Testing & Commissioning

- Optical Time Domain Reflectometer (OTDR) testing for signal loss and attenuation
- Power meter and light source testing to verify transmission performance
- Fiber continuity and insertion loss testing
- Troubleshooting and rectification of any connectivity issues

5. Documentation & Handover

- Providing as-built drawings and test reports
- Labelling of fibre optic cables and termination points
- Submission of warranty and maintenance documentation

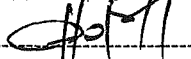
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Date 02/10/2025

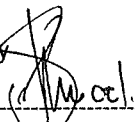
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