Eskom	Scope Of Work	Generation

Title:	**Scope of Work for Cable Maintenance at Kriel Power Station for a period of five years**	Unique Identifier:	**MTS0057**
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1. Description of the *service*

1.1 Executive overview

The contract is for cable maintenance at Kriel power station for a period of 5 years. The scope includes cable installation, testing, tracing, fault-finding, commissioning, repairs and or replacement of power cables as well as telecommunication cables, including earthing systems and AWR overhead power lines

The contract will include provision of support and emergency breakdown services for Kriel Power Station

2. *Employer*'s requirements for the *service*

2.1 Service Information

The *Contractor* shall attend a monthly meeting to discuss any items arising in connection with the cable maintenance contract with the *Service* Manager and to complete the assessment.

3. Work scope

This is an all-inclusive maintenance package for Cabling. The contract will include provision of support and emergency breakdown services for Kriel Power Station plant as per the Service Information. Services rendered are for the duration of the contract, from the start date to the completion date.

3.1 *Employer*'s objectives and purpose of the service

The *Contractor* must be Authorized in terms of PSR and ORHVS to be able to perform activities covered in the scope of work, failing which a 10% will be deducted on monthly Gross labour charged effective after three months when the contract is in place/signed.

The service include cable installation, testing, fault-finding, tracing, commissioning, repairs and or replacement of power cables as well as telecommunication cables, including earthing systems and AWR overhead power lines at Kriel Power Station including the outside plant belonging to Kriel Power station.

The objective is to ensure that all Cabling receive the highest degree of attention in quality engineering, operational and maintenance, all of which is aligned to the South Africa National Standards (SANS).

The maintenance and management of such installations is to ensure that they are maintained and inspected to the highest degree in accordance with the SANS standards and the OHS Act, and to ensure that no injury or fatality will occur in relation to such installations that could have been anticipated or foreseen.

The service shall include all projects, outage work, routine maintenance, repairs, structural repairs, inspections & cleaning, support services, emergency breakdown services, statutory inspections, and defect correction during normal and abnormal condition or operation, to ensure the integrity of the installed cabling systems at Kriel Power Station.

The service shall include Earth mat testing in Kriel Power Station

The contractor shall through execution of the services ensure that all systems are safe and operational. These will include but not limited to all cabling systems and its sub system components.

Kriel Power Station operates on a 24-hour basis, 7 days per week in continuous load following mode.

The contractor will be required to work standby hours as requested by the Employer.

The Contractor provides all services, specialized tools and Equipment, specialist personnel, and all associated maintenance services to accomplish and execute the requirements of the Service Information. The Contractor provides specialist technical consulting services, which support the optimum and continuous operation of the Employer's assets.

The Services are performed on existing, and new installations and complies with good engineering and

maintenance practices and standards for fossil fuelled power plants and conforms to the legal, environmental and other Eskom specifications, procedures, standards and conditions prevailing at the Site. The contractor shall be able to issue COCs for all new installations in the plant

In these terms the contractor shall maintain and issue all legal and required certification to ensure

compliance.

The contractor will be required to assist with the switchgear panel wiring and busbar replacements during breakdown.

Maintenance will be carried out in the following categories: Corrective Maintenance systems, and Emergency Breakdown Repair Services of Cables for Electrical Maintenance & Projects at Kriel Power Station Is the maintenance carried out after a failure has occurred and is intended to restore an item to a state in which it can perform its required function.

Preventive Maintenance

Is the maintenance carried out at pre-determined intervals, or corresponding to prescribed criteria, and intended to reduce the probability of failure, or the performance degradation of an item.

Planned Maintenance

Is the maintenance performed during a planned (scheduled) outage of the specific plant or generating units.
Routine Maintenance

Is time-based maintenance work that is performed with the plant either on or off load.

General Overhaul

During this outage all plant having no redundancy is overhauled to ensure reliable and safe operation.

Mini General Overhaul

During this outage, only the following interventions will be attended to:

Those plant items with no redundancy and which will not remain reliable up to the next General Overhaul. Inspections of suspect plant items.

Opportunity Repairs

These are short outages between Overhauls to enable essential repairs and inspections to be executed. Legislation and Site regulations

The contractor supervises and manages the health and safety and gives access to other parties on equipment under the contractor's control in terms of these Regulations.

The contractor maintains records of authorised employees; manages re-authorisation and report statistics on monthly site report.

In addition to the South African National Standards applicable to cable systems, the following will be applicable to Eskom Kriel Power Station:

Any modification to a cable system or installation shall automatically be regarded as a modification, due to the life safety impact, and shall follow the appropriate requirements for the specific level of plant modification. (i.e.. That will result in any deviation from the established design base)

All breakdowns and callouts to the Contractor shall be logged in a call-out register, at a manned control room (EOD), with a reference number, time, date, and nature of defect for record purposes.

All cable modernisation, refurbishment, replacement, and upgrades of a major component shall be managed so as to comply with the latest legislative requirements.

Where certain aspects of the maintenance, management, modification, or upgrade of cable services are contracted out, verification by experienced staff is required to ensure full compliance to legislation and applicable standards.

In cases where doubt exists, for whatever reason, in the correct identification of a cable to be worked on, such cable will be proven by all means, including "Spiking" until it could be verified for repairs. Local isolation procedure to be followed.

The competent Contractor shall have a formal risk assessment process, identifying risks associated with the Services rendered.

Kriel power station shall develop a maintenance strategy which shall include critical spares for the cable systems in order to minimise downtime.

The power station will ensure that the Contractor will implement a QCP for all activities carried out by the competent Contractor.

3.2 Maintenance

The contractor manages and maintains the Plant by adhering to all Legal, Site Regulations, Policies, standards, and Procedures when executing work. To this end the contractor ensures the following:

Disconnect power cables as per cable schedules.

Cable replacement shall include the removal of the cable which is being replaced as per cable schedules or already identified by others to be replaced.

Design, supply and install all new cable racks and mark up drawings. Only vertical runs are permitted when suspended in air.

Installation of new cabling, cable joint terminals & termination kits.

All personnel, equipment, spares or any material used to perform functions as outlined in this document shall be approved for use by the Employer and shall include but not limited to certification, expiration and qualification.

Repair, test, trace and join all 11kVAC, 3,3kVAC, 400/380VAC, 525VAC, 220VAC, 24VDC, 220VDC, 110VDC, and instrumentation UVG cables as per cable schedules.

Re-terminate existing cable ends (previously disconnected by others) on all new or replaced panels as & when required.

All Cables 11kVAC, 3,3kVAC, 380VAC, 220VAC, 24VDC, 220VDC from Units 1 to 6 and Common Plant installed, repaired, and removed Shall be tested first, the test results shall be within the specification and the employer must accept the result first before any work can continue.

Inspect, test and repair earthing cables on all the Units and Common Plant, when required.

All cables, joint terminals and terminations supplied, must be in accordance with all applicable requirements for standard and specification listed in Table 1. Issue Certificate of Compliance for the work done.

The *Contractor* shall also provide knowledge and recommendations on other plant falling within his field of expertise.

The *Contractor* issues a monthly report to the Service Manager as agreed between both parties. This report shall include all work done to date, work in progress (including the status) and future work if an order is already in place during the preparation of the report and any other work that the *Contractor* is busy with. The report also includes a copy of all the invoices issued during that month.

Investigate, identify, and report potential plant failures. Recommend actions, modifications, and system and process changes. Participate in investigations as required.

Ensure there is efficient overall organisation of personnel and services.

Any cable that is decommissioned or unused by the *Contractor* must be communicated to the Supervisor or his delegate to obtain information about storage or disposal of that cable.

During outages the *Contractor* shall assist with connection of DBs as well as lighting repairs

The contractor conforms to all prevailing legal requirements of the Republic of South-Africa, Eskom SOC Limited and Kriel Power Station Site legal requirements. With special reference but not limited to the following:

Occupational Health and Safety Act 85 of 1993 as amended and its regulations. SANS 10400: National Building Regulations

Plant Safety Regulations (PSR) 36-681 - Generation Plant Safety Regulations GGPP0592: Generation Policy: Power Station Plant Classification

OPG 0159-02: Eskom manual: Classification Guideline

Compensation for Occupational Injuries and Diseases Act 130 of 1993 as amended. National Environmental Management Act 107 of 1998 as amended.

National Environmental Waste Act 59 of 2008 as amended. National Water Act 36 of 1998 as amended.

Eskom procedures and safety requirements set out in Safety, Health and Environmental specifications, Document 004 4830.

Eskom procedure 32-95 in regards with the management of safety, health and environmental incidents

Any other act or procedure deemed necessary or applicable if the work includes some toxic and/or hazardous substances during normal and routine maintenance activities stipulated in this document. In this case the Contractor handles such hazardous substances in accordance with the applicable regulations and procedures and is disposed of by the contractor in accordance with the applicable law.

3.3 Table 1

Item	Title	Revision
1	Eskom ESKASAAU7: Quality Requirements for the Procurement of Assets, Goods and Services.	Latest
2	SANS 1339 SABS 1339 2010 4 Electric cables - Cross-linked polyethylene (XLPE) insulated cables for rated voltages 3,8/6,6 kV to 19/33 kV	Latest
3	SANS 1507-1 SABS 1507-1 2007 1.01 Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) Part 1: General	Latest
4	SANS 1507-2 SABS 1507-2 2007 1.01 Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) Part 2: Wiring cables	Latest
5	SANS 1507-3 SABS 1507-3 2007 1.01 Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) Part 3: PVC	Latest
6	SANS 1507-4 SASS 1507-4 2009 1.02 Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) Part 4: XLPE Distribution cables	Latest
7	SANS 1507-5 SASS 1507-5 2009 1.02 Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) Part 5: Halogen-free distribution cables	Latest
8	SANS 1507-6 SASS 1507-6 2007 1.02 Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) Part 6: Service cables	Latest
9	SANS 97 SASS 97 2010 7 Electric cables - Impregnated paper- insulated metal-sheathed cables for rated voltages 3,3/3,3 kV to 19/33 kV (excluding pressure assisted cables)	Latest
10	SANS 529 SASS 529 2007 3 Heat-resisting wiring cables	Latest
11	SANS 808 SASS 808 1967 1 Cable glands for use on flameproof enclosures (Ex d)	Latest
12	SANS 876 2009 1 Cable terminations and live conductors within air-filled enclosures (insulation co-ordination) for rated a.c. voltages from 7,2 kV up to and including 36 kV	Latest
13	SANS 10142-1 SASS 0142-1 2009 1.07 The wiring of premises Part 1: Low-voltage installations	Latest
14	SANS 10142-2 2009 1 The wiring of premises Part 2: Medium-voltage installations above 1 kV a.c. not exceeding 22 kV a.c. and up to and including 3 000 kW installed capacity	Latest

15	Eskom Requirements for control and power cables for power stations Unique Identifier:240-56227443	Latest
16	NWS 1220: Specification for cable junction and reduction boxes for power stations.	Latest
17	Drawing 0.00/1310: Standard power and control cable code	Latest
18	Eskom NWS 1058: Safety on Construction Sites: Requirements which Contractors must comply with	Latest
19	Eskom NWS 1007/P: The Management of Construction, Commissioning and Hand-Over of Plant	Latest
20	Eskom NWS 1525: Specification for Control and Instrumentation Cables	Latest
21	Eskom NWS 1674: Drawing Acceptance	Latest
22	Eskom NWS 1024: Specification for Panel Hardware and Components for Electronic Equipment	Latest
23	Eskom GGS 0349: Quality Assurance	Latest
24	Eskom GGR0992 Plant Safety Regulations	Latest
25	Eskom Kriel 7.1/PR/03 KKS and Labeling - Camden Procedure	Latest
26	Eskom 0.54 393 Rev 22 Eskom Earthing Standard Drawings	Latest
27	36-946 WI for electrical drawings and documentation	Latest
28	36-944 General drawing standard WI	Latest
29	GGS0315 Standard drawing practice	Latest
30	36-947 WI for C&I on drawings and documentation	Latest
31	GGG0450 Guideline to acceptance of contractor drawings	Latest
32	36-943 Engineering drawing office and engineering document standard.	Latest
33	SANS 1574-1 Electric flexible cables with solid extruded dielectric insulation Part 1: General	Latest

34	SANS 1574-2 Electric flexible cables with solid extruded dielectric insulation Part 2: PVC insulated flexible cables for domestic, office and similar environments (cords)	Latest
35	SANS 1574-3 Electric flexible cables with solid extruded dielectric insulation Part 3: PVC-insulated cables for industrial use	Latest
36	SANS 1574-4 Electric flexible cables with solid extruded dielectric insulation Part 4: Rubber-insulated cables for domestic, office and similar environments	Latest
37	SANS 1574-5 Electric flexible cables with solid extruded dielectric insulation Part 5: Rubber-insulated cables for industrial use	Latest
38	SANS 1339 Electric cables - Cross-linked polyethylene (XLPE) insulated cables for rated voltages 3,8/6,6 kV to 19/33 kV	Latest
39	SANS 1411-1 Materials of insulated electric cables and flexible cords Part 1: Conductors	Latest
40	SANS 1411-2 Materials of insulated electric cables and flexible cords Part 2: Polyvinylchloride (PVC)	Latest
41	SANS 1411-3 Materials of insulated electric cables and flexible cords Part 3: Elastomers	Latest
42	SANS 1411-4 Materials of insulated electric cables and flexible cords Part 4: Cross-linked polyethylene /XLPE\	Latest
43	SANS 1411-5 Materials of insulated electric cables and flexible cords Part 5: Halogen-free, flame-retardant materials	Latest
44	SANS 1411-6 Materials of insulated electric cables and flexible cords Part 6: Armor	Latest
45	SANS 1411-7 Materials of insulated electric cables and flexible cords Part 7: Polyethylene /PE\	Latest

3.4 Contact Persons

The Service Manager, his/her delegates (other departments using the Contract), and, if outside the Employer's working hours, the most senior person on shift or standby manager are identified as those authorised to call out the Contractor as required to perform the works.

The Contractor ensures that the Contractor, his site manager or his delegate is on site during office hours. The Contractor's site manager or his/her delegate has full signing authority and is authorised to make binding decisions. The Contractor, his site manager or his delegate is reachable per telephone, after hours for any emergencies.

The Contractor notifies the Service Manager of his/her contact telephone numbers by the starting date.

The Contractor notifies the Service Manager of a change of Contractor's telephone number one week before such changes takes effect.

Any work, for which the Contractor has received more than 24 hours' notice, this can be within office hours or outside of office hours.

Any activity for which the Contractor has to come to work to complete projects assigned to him. This can be outside of office hours.

A reasonable response period to be available at site for Normal or Emergency work shall be deemed to be one hour from time of notification for any event as deemed necessary by the Service Manager or his/her delegate.

Within 24 hours the *Contractor* reports to the power station or any other site for meetings, seminars, conferences, etc. as notified by the Service Manager

Contractor to adhere to the following documentation within the Service Information:

- ORHVS – Regulations – EPC – 32-846
- 36-681 Rev01 – Plant Safety Regulations
- RLR0037 – Management and control of the Declared Outage Permit
- Driven Machinery Regulations 1988
- Project Controls Requirements – 240-85065548

Electrical Installation Regulations to be adhered to, all electrical boards must be inspected and tested before connecting to a power supply and then a CoC must be issued.

3.5 Interpretation and terminology

The following abbreviations are used in this Service Information:

3.6 Abbreviations

Abbreviation	
NEC	New Engineering Contract
TSC	Term Service Contract
CDSS	Contractor Document Submission Schedule
AWR	Ash Water Return
MV	Medium Voltage
LV	Low Voltage
ORHVS	Operating Regulation for High Voltage System
PSR	Plant Safety Regulations
CoC	Certificate of Compliance
DB	Distribution Boards
PD	Partial Discharge

3.7 Definitions

Comprehensive Report: means a certificate as contemplated in the relevant health and safety standard incorporated internal to these Regulations.

Modification: means any alteration to a plant system affecting the control, load, travel or safety thereof.

Operator: means a person who is selected, trained, assessed, and authorised in terms of legislation to operate specific equipment.

Work /Services is the physical activities carried out, and is interpreted as per the definition stated in the NEC 3 of June 2005.

4. Corrective, Routine and Preventative maintenance requirements

4.1 Labelling

The contractor adheres to the requirements stipulated in document 004/4682, inspects and maintains on continuous basis all labelling of electrical equipment and plant under his control to ensure the following: All electrical cables shall be correctly labelled as per document 004/4682.

All non-labelled or defective labelling related the *Contractors* Scope of Work shall be reported to the *Employer*. The Service provider will provide new labelling which shall then be affixed to the equipment identified.

4.2 Small Power and Distribution Cubicles

The contractor manages, inspects, and maintains on a monthly basis all Kriel distribution boards installed to ensure that:

All cabling, trunkings, cable racks and support systems are securely installed, earthed, bonded and

supported to the required standards.

All defects noted on the electrical and civil infrastructures are reported, and notifications created on SAP, scheduled and work executed to ensure compliance.

Statutory Testing of Assets, Plant, and Equipment Wherever applicable to Cables and new Installations:

Refer to latest revision of Document 229/12263, "Statutory Plant and Equipment'.

The above referenced documentation is based on the requirements to comply with the Occupational Health and Safety Act No 85 of 1993. Ensure that all the Statutory Maintenance requirements are being managed and maintained.

Statutory Plant and Equipment: "Means any plant safety or protection device and any plant, structure, item or equipment referred to in the OHS Act "Regulations," and for which there is a specific technical action and/or inspection periodicity".

The *Contractor* adheres to, maintains the assets, Plant, or Equipment of the *Employer* to ensure that:

Statutory inspection and testing intervals of assets as per legal requirement is carried out; the registers are current; Repairing of defective equipment is to its original designed state.

4.3 Electrical Drawings

The Contractor manages and maintains all System drawings under his control.

This will include updating of Wiring diagrams, Single line, Cable block diagrams and schedules, Schematic diagrams, and the like, whenever any changes or replacements were affected, through an engineering instruction or modification, where the equipment was not a "One to One" replacement.

The creation or updating of drawings, cable schedules, schematics, single line diagrams, etc.

The contractor shall "Red Line" a working Copy and submit it to the Electrical Engineering department. The contractor ensures that drawings are available when fault finding, and repairs are carried out.

4.4 Works Management and Control

The contractor manages and maintains all systems under his control by ensuring that: The contractor adheres to the Works Management procedures.

The contractor creates on SAP (or any other recognised method such as Operations Suite), a notification for each work activity that requires execution through the Works management Planner; The Contractor creates notifications through continuous Plant inspections.

The Contractor schedules the work up to 4 weeks in advance, ensuring that the required equipment and spare parts are available for execution of the services.

The contractor signs off the works orders, detailing the condition as found, the status after repairs, and the activities carried out to the plant to restore it to a state in which it can perform its required functions.

4.5 Planned Maintenance

The *Contractor* manages and maintains the Plant scheduled for Planned Maintenance by adhering to all Legal, Site Regulations, Policies, Standards and Procedures when executing services under Planned Maintenance. To this end the *Contractor* ensures that.

The *Contractor* is familiar with the condition of the Plant under his control and submits the plan of required maintenance for approval, and arrangement for Plant to become available.

The *Contractor* submits the plan, and in concurrence with the Employer, drafts a detailed Scope of Work for the service to be executed.

The *Contractor* drafts an (ITP) Inspection and Test Plan for each Critical activity to be executed on the plant.

Each activity shall be consulted to determine the necessity of the ITP.

The *Contractor* notifies the Quality Control department, the Employer, and the Client (Engineering) of all Witness, and Hold points that needs to be signed off, before he carries on with the Service.

The *Contractor* executes all services as detailed in the Engineering Scope of Work; The Contractor provides all means to execute the services as per the Scope of Work.

The *Contractor* signs off the works orders, detailing the condition as found, the status after repairs, and the activities carried out to the plant to restore it to a state in which it can perform its required functions.

The *Contractor* ensures that, included into the Planned Maintenance works package, the requirements of Corrective, Routine and Preventative maintenance requirements, whichever part is applicable, is executed with the Detailed Scope of Work requirements, set out under Planned Maintenance.

Mini General Overhauls and General Overhauls (Outages)

The *Contractor* manages and maintains the Plant scheduled for the Overhaul or Outage by adhering to all Legal, Site Regulations, Policies, standards, and Procedures when executing work under Outages. To this end the *Contractor* ensures that.

The *Contractor* submits the plan, and in concurrence with the Employer, drafts a detailed Scope of Work for the service to be executed.

The *Contractor* drafts an (ITP) Inspection and Test Plan for each Critical Activity, Plant and Level 1 Plant to be maintained. Each activity shall be consulted to determine the necessity of the ITP.

The *Contractor* notifies the Quality Control department, the Employer, and the Client (engineering) of all Witness, and Hold points that needs to be signed off, before he carries on with the services.

The *Contractor* provides all means to execute the service.

The *Contractor* strips down plant, clean, inspects, repair, replace, and rebuilds the plant to its original state to restore it to a state in which it can perform its required functions.

The *Contractor* makes use of the Original Equipment Manufacturer Specifications and Requirements to

restore plant and equipment to its original state.

Any missing or stripped fixture or fitting will be replaced.

All equipment, parts, or spares that is removed or stripped down from the service shall be counted, listed, bagged, tagged, stored, and signed into, and signed out of, a predetermined outage storage area. It will be the responsibility of the Contractor to account for each item of the services.

The *Contractor* shall have check sheets, and registers updated at all times to assist in this regard.

The *Contractor* signs off the works orders, detailing the condition as found, the status after repairs, and the activities carried out to the plant to restore it to a state in which it can perform its required functions; Compile an Outage report for all the activities covered in an outage and keep records (filed) with an additional copy made available to the *Employer*.

Make Certificates (Calibration, test reports, etc.) available and provides copies to the *Employer* upon

request.

The *Contractor* manages the access and permits on behalf of the *Employer* on plant under his control.

The *Contractor* ensures that, included into the Outage works package, the requirements of - Corrective, Routine and Preventative maintenance requirements, whichever part is applicable, is executed with the Detailed Scope of Work requirements, set out under Outage Services.

4.6 Engineering Services as Required by Eskom Generation

The *Contractor* is responsible for Engineering services and labour as follows: Verify the performance matching requirements of replacement equipment and parts.

Inspection and testing prior to and after repairs, recording, reporting, and making recommendations and providing the necessary information where applicable.

The *Contractor* is required to provide detailed breakdown reports clearly stating the contributory and root.

causes of the failure, Evaluation of parts for possible re-use.

Select, design and procurement of new components, ensuring that replacement insulation systems and other material are compatible with the existing materials. If the replacements parts are not exactly as the originals, the *Contractor* demonstrate that the replacement meets or exceeds the capability of the original in all essential requirements with approval from the Employer.

The *Contractor* must ensure that the employer and others required (as determined by the Employer) are.

present during dismantling, testing and assessment to inspect any evidence of failure or aspects of defective design or workmanship uncovered. Ensure that correct photographic records are made.

Establish the suitability of equipment to achieve the life extension required by the *Employer*. Perform

tests, investigation, and calculation required for this purpose.

Shall eliminate weaknesses. Submitting a written report recording the defects and detailing the extent of repair and work required to achieve the life extension specified by the *Employer.* Obtaining the *Employer's* prior agreement in writing for the extent of repair and work to be done.

Where changes to designs are made, producing details of the design, working drawings, repair instructions and procedures, as well as all necessary amendments to operating and maintenance manuals; producing agreed procedures for works inspection and tests, and site commissioning and testing, all with details of acceptance criteria to be attained. Producing reports or test certificates detailing actual results attained.

Producing quality plans for the activities concerned before commencing work. Producing progress reports as required periodically by the Employer.

Submit details of the redesign, drawings and documentation to the Employer for agreement.

Produce a consolidated report on all aspects of the services, incorporating all reports, data, acceptance criteria, and quality assurance records.

4.7 Test Certificates

Provide a data pack with complete tests and Certificates after completion of any major services; Have records of all certificates for tools and test equipment or as required by the *Employer*.

Ensure that test equipment calibration is valid for the period in which work is executed. Certificates to be made available and certification shall be executed by an approved test facility.

4.8 House keeping

All workplaces must be kept clean at all times, Interface with other contractors to ensure compliance. Discard waste in correctly allocated coloured waste bins.

Ensure that plant worked on is cleaned before clearance of any permit. Training

The *Contractor* provides training to his personnel. The *Contractor* provides a list, as directed by the Service Manager, of recommended training activities including duration and location for acceptance by the Service Manager.

All relevant courses must be attended as required on contractor's account.

The Employer shall only be responsible for training courses as provided by the Employers business unit. Such courses include the PSR, ORHVS, BBSO etc.

Compile a required Training matrix for employees under his control.

Attends required courses as stipulated by the *Employer.* Record Keeping

Record keeping shall be managed by the relevant maintenance and engineering sections to ensure

retrievably archived plant history on site, to the degree of detail necessary for plant condition and diagnosis. The necessary history information shall not be solely entrusted to off-site service providers or other off-site organisations. A copy of all records shall be made available to the Employer upon request.

4.9 Safety Risk management

The contractor adheres to the following requirements: Basic Conditions of Employment Act No 75 of 1997.

Occupational Health and Safety Act and Regulations No 85 of 1993.

National Environmental Management Act 107 of 1998. National Road Traffic Act 93 of 1996.

32-37 Eskom Substance Abuse Procedure.

32-136 Contractor Health and Safety Requirements 240-62196227 Life- saving Rules.

32-95 Environmental, Occupational Health and Safety Incident Management Procedure

32-727 SHEQ Policy

32- 418 Working at Heights Procedure

240-62946386 Vehicle and Driver Safety Management Procedure 32-520 Risk Assessment procedure

Plant Safety Regulations

All contractors shall, before commencement of the project ensure that all their employees are familiar with the relevant Eskom Kriel, SHE documentation that is applicable to contract services.

4.10 Completion Communication

Completed task must be communicated to the Service Manager; *Contractor* informs and gives feedback on progress.

Reports as requested shall be handed in not later than close of work every Friday.

All work done must be accompanied by signed of QCPs by the relevant people at the hold and witness points.

4.11 Meetings

All relevant meetings must be attended.

Attends Daily Electrical Maintenance Department Feedback meetings.

Attends other meetings as required and directed by the Service Manager, Interfaces with the Employer's internal organization.

Interfaces with other contractors that may perform work for the Employer.

Attends Monthly scheduled contract meeting.

4.12 Specialized Tools and Test Equipment

Contractor must provide all required tools to execute the requirements.

All tools that need certificates must have valid certificate to comply with safety requirements.

Integration with the Employer's organization Kriel

The *Contractor* Provides the Works in an integrated manner with the Employer's organization at Kriel Power Station. To this end the Contractor:

Performs the day-to-day planning and scheduling of all activities on SAP.

Maintains all required SAP and other maintenance procedures.

Attends to plant breakdowns, until completed, unless otherwise agreed with the Service Manager; Provides personnel for standby on a 24-hour basis, in accordance with his conditions of service to perform required services.

Provides personnel that will be authorised, by the Employer, in Plant Safety Regulations (PSR), ORHVS,

or other as is relevant to perform duties required as deemed necessary by the Employer, Spares requisition from the Employer's main store, in liaison with the Service Manager.

Assist in the processes to identify goods/equipment and spares needed to effectively maintain the electrical plant as to minimize downtimes.

4.13 Excavations and associated water control

In areas up to 1 m and greater is required to be excavated, an excavation permit will be required. Existing electrical cables and fibre optic cables are exposed prior to commencement of excavation work in this area. Ensure the correct routing of cables is identified prior to starting excavation. Cable and service scanning shall be conducted, and a comprehensive report shall be submitted prior to the start of excavation. Where deemed satisfactory by the Employer and the respective Engineering Department, the report need not be submitted prior to start of excavation.

4.14 Commissioning

It will be required of the contractor to do commissioning or safety testing. It will be the liability of the contractor to draw up quality documentation and inspection sheets to safely commission plant under his control.

5. Management strategy and start up.

5.1 The *Contractor*'s plan for the *service*

The *Contractor* will submit a plan to the Service Manager for acceptance within the period stated in the service agreement.

Requirements which are to be incorporated into the *Contractor*'s plan:

- Document 240-85065548 requirements

5.2 Management meetings

Regular meetings of a general nature may be convened and chaired by the *Supply Manager* as follows:

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk registers and compensation events	Discussions to take place as soon as a risk is notified	*Service Manager's* office	*Contractor*, *Service Manager,* Co-ordinator and Contracts Supervisor
Daily Outage Progress	Daily 10:00am during outages	Outage Boardroom	Outage Execution Manager, Planner, *Service Manager,* Co-ordinator, and Contract Supervisors
Daily Planning Meeting	Daily 7:30 am	EMD Boardroom	Electrical Maintenance team and Contract supervisor/manager
Daily Safety Toolbox Talks	Daily before work starts on site with signed attendance registers by *Contractor's* employees and signed off minutes by the Contractor's Site Manager	Contractors Yard	*Contractor* and his employees

Contractor Monthly Safety Meeting	Monthly as scheduled by Risk and Assurance	MS-Teams	Contract Manager
Plant Safety Walk down	Tuesdays 09:00am	EMD Tea room	All employees
Contractors Meeting	Daily 15:00pm during outages	*Service Manager's* office	Outage Co-ordinator, *Contractor,* *Contractor* Planner and Supervisor

If the *Contractor* can't attend any meeting his feedback should be formally communicated through to the *Service Manager.*

The *Contractor* will provide a detailed feedback report daily accurate feedback on the status of *service* carried out by the *Contractor*. This report should indicate accurate progress of *service* and if any constraints are experienced, the *Contractor* to communicate with the *Service Manager* and mitigate the risks with action plans.

Meetings of a specialist nature may be convened as specified elsewhere in this Service Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *service*. Records of these meetings shall be submitted to the *Service Manager* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

5.3 *Contractor*'s management, supervision, and key people

The *Contractor* to provide a key list of personnel who will carry out the work on site with their qualifications attached. A company organogram will be needed by the Service Manager to communicate accordingly to comply with the NEC3 Term Services Contract communication structures. Contractor to refer to Kriel Power Station Contractor SHE Requirements

5.4 Provision of bonds and guarantees.

Not Applicable

5.5 Documentation control

Documentation requirements covers the life cycle of the project from the initial engineering stages through to installation and commissioning including operating, maintenance and the training stages of the project. Not only must these documents be comprehensive and complete but comply with strict document control and revision procedures.

The *Contractor* is responsible to plan the supply of the documentation during the various project stages and to provide the documentation in accordance with the *Contractor* Document Submission Schedule (CDSS). A document is thus any written or pictorial information describing, defining, specifying, or certifying activities, requirements, procedures or results.

All the drawings issued by the *Employer* for this contract is copyright protected and are not to be copied by the *Contractor.*

It is the responsibility of the *Contractor* to update any drawings that may have changed due to modifications on the plant. These drawings should be submitted and registered correctly by the *Contractor* to the drawing office at Kriel Power Station.

The *Contractor* submits all documentation on a formal transmittal form to the *Service Manager.*

All manuals, documents, drawings and engineering documentation shall be presented in British English in both software and hardware.

All Communications will be always filed and kept on site as it is crucial to have the correct communication structures. These communication documents should at all times adhere to the NEC 3 Term Service Contract communication requirements.

Contractor Document Submission Schedule (CDSS)

Document Name/Description	**Date/Time documents to be submitted**
Baseline risk assessment	A month before start of the work
QCP's	Before commencement of any work
Contractor's Safety file	Two weeks before start of work
Inspection report	24 hours after stripping activity
Technical report and data pack	Within 14 days of completion of the services

5.5.1 MATERIALS FACILITIES AND SAMPLES FOR TESTS AND INSPECTIONS

The *Contractor* shall ensure that surfaces to be protected are inspected to evaluate extent of surface preparation for which he will be responsible. All inspection arrangements with Kriel Power Station Engineering Department will be made 24 hours in advance.

6. LABOUR REQUIREMENTS

Note RATES SHOULD BE IN LINE WITH THE METAL AND ENGINEERING INDUSTRIES BARGAINING COUNCIL(MEIBC)					
CABLE REPAIRS AND MAINTENANCE AT KRIEL POWER STATION FOR A PERIOD OF FIVE YEARS					
Item No	**Description**	**UoM**	**Qty**	**Rate**	**Amount**
	SECTION NO :-1				
100	**PRELIMINARY & GENERALS**				
101	Site Establishment	Item	1		
102	Health and Safety File	Sum	1		
103	PPE (Including archflash PPE)	Yearly	5		
104	Medicals & Induction	Yearly	5		
105	Transport	Monthly	60		
106	Tools & Equipment	Item	1		
107	Standby allowance	Days	1 825		
108	Site De-Establishment	Item	1		
	TOTAL - P & G				
200	**LABOUR (NORMAL HOURS)**				
201	Site Manager x 1	hr	9 600		
202	Supervisor x 1	hr	9 600		
203	Technical Support x 1	hr	9 600		
204	Administrator x 1	hr	9 600		
205	Skilled Electrician x 4	hr	38 400		
206	Storeman x 1	hr	9 600		
207	SHEQ Officer x 1	hr	9 600		
208	Semi-skilled worker x 5	hr	48 000		
209	General worker x 5	hr	48 000		
	SUBTOTAL-NORMAL HOURS				

300	**OVERTIME (SATURDAY)**				
301	Site Manager x 1	hr	1 300		
302	Supervisor x 1	hr	2 400		
303	Technical Support x 1	hr	200		
304	Skilled Electrician x 4	hr	4 000		
305	Semi-skilled worker x 5	hr	4 500		
	SUBTOTAL -OVERTIME SATURDAYS				
400	**OVERTIME (SUNDAYS & PUBLIC HOLIDAYS)**				
401	Site Manager x 1	hr	500		
402	Supervisor x 1	hr	1 100		
403	Technical Support x 1	hr	100		
404	Skilled Electrician x 4	hr	2 000		
405	Semi-skilled worker x 5	hr	2 500		
	SUBTOTAL -OVERTIME SUNDAYS & PUBLIC HOLIDAYS				
500	**PLANT (WET RATE)**				
501	Truck 8 ton with crane & bucket	Day	180		
502	LDV 1 ton	Days	1 320		
503	Test Vehicle	Day	600		
	SUBTOTAL FOR PLANT				
	TOTAL-MAINTENANCE				
-	**OUTAGE**	-	-	-	-
600	**PRELIMINARY & GENERALS**	-	-	-	-
601	Health & Safety File	Per Outage	15		
602	Transport during Outages (all employees)	Km	162 000		
603	Medicals & Induction	Yearly	5		
604	PPE (Including Arch flash clothing)	Yearly	5		
605	Tools & Equipment	Sum	1		
606	Accommodation for Outage	Per Day	1 395		

	SUBTOTAL FOR PRELIMINARY & GENERALS				
700	**LABOUR Normal hours (As and when required-During Outages) 15 outages for 3 months each**				
701	Skilled Electrician x 5	hr	36000		
702	Semi-skilled worker x 5	hr	36000		
	SUBTOTAL FOR NORMAL HOURS				
800	**LABOUR Saturdays (As and when required-During Outages)**				
801	Skilled Electrician x 5	hr	2500		
802	Semi-skilled worker x 5	hr	2500		
	SUBTOTAL FOR PLANT				
900	**LABOUR Sundays and public holidays (As and when required-During Outages)**	-	-	-	-
901	Skilled Electrician x 5	hr	1500		
902	Semi-skilled worker x 5	hr	1500		
	SUBTOTAL FOR OVERTIME - SUNDAYS & PUBLIC HOLIDAYS				
	TOTAL -OUTAGE SECTION				
	SUMMARY				
	MAINTENANCE				
	OUTAGE				
	TOTAL				

6.1 Labour Requirements

	Description	Experience Required
6.1	Site manager	5 years' experience; qualified technician with National Diploma Electrical
6.2	Supervisor/Technical support	5 years related experience; qualified technician (N:Diploma electrical engineering)
6.3	Safety Officer	1-year related experience; Matric; Samtrac
6.4	Artisans/Skilled Electricians	2 years related experience; qualified electrician (red seal);
6.5	Semi-Skilled	1-year related experience

7. Authorisation

This document has been seen and accepted by:

Name	Designation
Kgosi Ntsheroa	Electrical Maintenance Department Manager
Evah Malofha	Senior Advisor Technical Support
Thapelo Leteane	Electrical Senior Technician

8. Revisions

Date	Rev.	Compiler	Remarks
January 2025	0	E Malofha	Document compilation

9. Development Team

The following people were involved in the development of this document:

- Evah Malofha