PART 3: SCOPE OF WORK

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C3.1: EMPLOYER'S WORKS INFORMATION

Contents

1 Description of the *works*

1.1 Executive overview

The works to be carried out according to the Eskom RTV Silicone Rubber Insulator Coating and Shed Extender Application Standard 240-56063877 revision 2.

The scope of works
The scope of work includes SUPPLY AND APPLICATION OF RTV SILICONE RUBBER RE-COATING (INCLUDING SHED EXTENDERS WHEN REQUIRED) ON PORCELAIN SURFACED EQUIPMENT AT CENTRAL GRID OLYMPUS ~~CAMDEN AND MATLA~~ SUBSTATION ~~is~~ as per the attached below standard documents:

- **240-56063877 RTV SILICONE RUBBER INSULATOR COATING AND SHED EXTENDER APPLICATION STANDARD**
- **240-56062705 RTV SILICONE RUBBER INSULATOR COATING AND SHED EXTENDER SUPPLIER STANDARD**

1.2 *Employer*'s objectives and purpose of the *works*

The electrical and mechanical performance of substation insulation plays a critical role in determining the reliability of a power network. The outdoor insulation needs to withstand the normal operating voltage under all conditions. Environmental conditions pose the greatest risk by depositing pollutants on the insulation, such as marine and industrial pollution.
The substations that are at a high risk of pollution flashovers are those located in proximity of the coast and/or a pollutant source such as heavy industry. ~~Majority of substations in the North-East Grid (Mpumalanga)~~ Olympus substation in Central Grid is ~~are~~ exposed to excessive pollution~~,~~ due to its proximity to an ~~the power stations,~~ industrial~~-~~ plant (ArcelorMmittal ~~Vanderbijlpark~~Vanderbijlpark Works – Olympus is located within the same yard~~plant's yard)~~~~smelters, waste and coal dumps and open cast mines~~.
Pollution combined with mist; Depending on the severity of the pollution levels, the wetting of the deposits causes an instantaneous conductive phenomenon which causes an extreme number of flashovers. This occurs on both powerline insulation and substation equipment leading to surface flashovers.
To combat surface tracking or flashovers, silicone coating should be applied on all insulators within the substation yard (as a temporary measure) or increase the creepage distance of all equipment through replacement of current equipment with new equipment of higher creepage rating.

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1.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
HV	High Voltage
PM	Project Manager
QS	Quantity Surveyor
EA	Engineering Assistant
kV	Kilo volt
ORHVS	Operating Regulations for High Voltage Systems
SANS	South African National Standards
EMP	Environmental Management Plan
SS	Site Supervisor

ITP	Inspection Test Plan

2 Management and start up.

2.1 Management meetings

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

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk register and compensation events	Weekly on Mondays at 10:00	Lines or substation referred in the scope of works	SS,RP and Contractor
Overall contract progress and feedback	Monthly on Mondays at 10:00	Lines or substation referred in the scope of works	*Employer*, *Contractor*, *Supervisor*, and Project Manager
Pre-Inaugural Meeting	After contract award	Lines or substation referred in the scope of works	PM, Contractor, Environmental Advisor, Safety advisor and SS
Compensation	When required	Lines or substation referred in the scope of works	PM, Contractor

Meetings of a specialist nature may be convened as specified elsewhere in this Works Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *works*. Records of these meetings shall be submitted to the *Project 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.

2.2 Documentation control

All correspondences must be addressed to the PM and all correspondence should be marked in sequential order. All internal documents will have as a reference, and the prefix will include the date and the number of correspondence in sequence

2.3 Health and safety risk management

NO WORK ON SITE WILL BE ALLOWED TO COMMENCE BEFORE ALL THE ACCESS PERMITS AND THE RELEVANT HEALTH AND SAFETY FILES ARE IN PLACE – ACCORDING TO THE ESKOM STANDARD **SHE Requirements 32-726 and 32-727** : (Occupational Health and Safety Requirements to be met by Eskom Transmission Employees, Contractors and Sub-Contractors during maintenance and construction work.)
The Contractor is to compile the complete SAFETY FILE according to Annexure 1 – Audit form in the Eskom Standard **SHE Requirements 32-726 and 32-727** Document and submit to Transmission Services Risk and Safety Department.. PLEASE NOTE that only once approval for the SAFETY FILE has been granted by Transmission Services Risk and Safety Department will arrangements for an Inaugural Meeting will be made to start Construction work on Site.
The Contractor must have an Eskom Certified and Authorized ORHVS person (Valid as requested by ESKOM) available on site at all times in accordance with Eskom Transmission Standard TST0015 - Training, Assessment and Authorisation of persons for the operation and maintenance of the power system. The authorization procedure for a permit to work shall be done before the Contractor commences work on site.
The Contractors Responsible person has to be Interviewed and Authorised by the relevant Regional personnel before any work can commence on Site.
The Contractor is responsible for setting out the works as shown on the drawings. Before any excavation is commenced, it will be the responsibility of the Contractor to ascertain from the “Engineering Assistant” the position of any existing services on site. Once these are indicated to the Contractor they shall be deemed “known”. Any costs incurred for repairs to any “known” services shall be for the Contractor’s account.
The Contractor shall establish a refuse control system. All waste is to be collected and disposed of as required by Eskom’s Environmental Policies and the Local Authority. All Hazardous waste to be stored separately and al waste must be disposed off at registered waste sites and certificates confirming type and amount to be submitted to Eskom. Separate bins must be provided on site for general and hazardous waste and must be clearly marked.
The Contractor shall make his own arrangements for the provision of accommodation for his employees. No accommodation or camping will be allowed on site.
The Contractor shall control his activities and processes in accordance with the Occupational Health & Safety Act No. 85 of 1993, and Eskom’s Safety Standard TST41-61: Occupational Health and Safety Requirements to be met by Eskom Transmission Employees, Contractors and Sub-Contractors during maintenance and construction work. Safety meetings are to be held regularly and copies of the minutes must be maintained and submitted to Eskom at the monthly progress meetings when requested.
The *Contractor* shall comply with the health and safety requirements contained in Annexure A of the Eskom’s Safety Standard TST41-61 to this Works Information.

2.4 Environmental constraints and management

The Contractor shall control his activities and processes in accordance with Eskom’s Environmental Policies, TST41-120 Rev2 and Eskom’s SHE Requirements 32-726 The EMP will provide the Aspects and Impacts that will require management and must be followed strictly. The Contractor shall prepare a separate mitigation plan for all environmental concerns raised through the EMP and in any other relevant forum. Environmental meetings between Eskom and the Contractor may be held regularly and copies of the minutes may be submitted to Eskom on request. The contractor is to provide monthly environmental reports and to send a flash report for any environmental incidences on site as soon as possible or within 24 hours to the SS and PM of any impact to the environment. ESKOM HOLDINGS SOC Ltd CONTRACT NO. _____ THE SUPPLY AND APPLICATION OF THE RTV SILICONE RUBBER INSULATOR COATING AT CAMDEN, MAJUBA, SOL, SASOL 2&3 AND GROOTVLEI SUBSTATIONS
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The *Contractor* shall comply with the environmental criteria and constraints stated in the Annexure B with Eskom’s Environmental Policies, TST41-120..

2.5 Quality assurance requirements

The Contractor shall control his activities and processes in accordance with Eskom's Quality Standard QM 58.
The Notification period for Eskom attendance to Witness & Hold points is 48 hours. These must be clearly indicated in the work programme submitted at the commencement of the work or after every progress review meeting. The SS will be responsible for the verification and signature of the ITPs which must be maintained by the Contractor and presented for signing promptly and regularly

2.6 Programming constraints

2.6.1 A detailed program with all the relevant Completion date will be discussed with the Contractor and approved by Eskom at the Inaugural meeting. The Contractor shall submit a comprehensive and fully detailed program within 1 week but **before** the Starting date after the program has been discussed with the contractor. The program shall be revised fortnightly and submitted to the PM for approval. If changes take place which affect the Completion date then a revised program must be submitted within 2 days. The Employer's key and milestone dates shall be indicated. **Note: Only MS Project format will be accepted**.
2.6.2 The following dates shall be clearly reflected on the programme:
Site inaugural date, starting and completion date for all activities as well as relevant key dates for hold or witness points. All relevant significant activities shall be shown in order to monitor the progress on site. The programme shall also reflect a 2 week period for inspection and correcting of Defects before the completion date.
2.6.3 Updated programmes must be available at all site meetings reflecting progress to date.
2.6.4 The contractor's trucks must have a **valid and current crane test certificate** with the truck driver and crane operator's certificate. All slings, shackles and crimping tools must have **valid and current test certificate**, which must be produced two weeks before site establishment.
2.6.5 The contractor is to have an Eskom certified and authorised **ORHVS** person available in each area where work is being performed at all times in accordance with Eskom transmission standard **TST41-61** contractor safety in a high voltage environment

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

The Contractor is to have an organisation chart on file clearly indicating all site specific key personnel, such as RP, Health and safety & Environmental reps, Site Foreman etc.
All key personnel must be appointed in writing and all appointments must be site specific, valid and kept on the site file at all times.

2.8 Invoicing and payment

Within one week of receiving a payment certificate from the *Project Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice showing the amount due for payment equal to that stated in the *Project Manager's* payment certificate.

The *Contractor* shall address the tax invoice to **Eskom Holdings SOC Limited, P O Box 1091, Johannesburg, 2000** and include on each invoice the following information:

- Name and address of the *Contractor* and the *Project Manager;*
- The contract number and title;
- *Contractor*'s VAT registration number;
- The *Employer*'s VAT registration number ~~4740101508~~;
- Description of service provided for each item invoiced based on the Price List;
- Previous, present and to date values per payment certificate;

- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;
- Any other information as may be required

Procedure for invoice payment:

Work done is assessed by the *Contractor* and *Employer* Quantity Surveyor (QS), after which the *Employer*'s QS and the *Contractor,* agree on the assessment and the amount to be invoiced. The *Employer* QS will then generate a payment certificate signed by both the *Employer*'s QS and *Employer*'s PM. A service entry/GR would be then generated for the jointly signed payment certificate by the *Employer* on SAP system. There is no need for the *Contractor* to append a GR on their invoice like in the past, the *Contractor* is only required to submit a correct soft copy of their invoice to InvoicesgrpcapitalPDP@eskom.co.za and it will be processed and paid.

2.9 Insurance provided by the *Employer*

As stipulated in the Contract Data.

2.10 Contract change management

All construction will be done in accordance with Eskom's policies, standards and design or drawings provided. No deviation from any design or drawing will be accepted, unless requested through the PM and approved in writing by the responsible Eskom designer.
All drawings to be used are as per the drawing register and statement of works

2.11 Provision of bonds and guarantees

The form in which a bond or guarantee required by the *conditions of contract* (if any) is to be provided by the *Contractor* is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

The *Employer* may withhold payment of amounts due to the *Contractor* until the bond or guarantee required in terms of this contract has been received and accepted by the person notified to the *Contractor* by the *Project Manager* to receive and accept such bond or guarantee. Such withholding of payment due to the *Contractor* does not affect the *Employer*'s right to termination stated in this contract.

2.12 Records of Defined Cost, payments & assessments of compensation events to be kept by the *Contractor*

The Contractor is to keep proof/invoices of all costs incurred for a compensation event and submit them to the Project Manager if requested.

2.13 Training workshops and technology transfer

As per SD&L requirements

3 Engineering and the *Contractor*'s design

3.1 *Employer*'s design

All construction will be done in accordance with Eskom's policies, standards and design or drawings provided. No deviation from any design or drawing will be accepted, unless requested through the PM and approved in writing by the responsible Eskom designer.
All drawings to be used are as per the drawing register and statement of works

3.2 Parts of the *works* which the *Contractor* is to design

Not applicable

3.3 Procedure for submission and acceptance of *Contractor*'s design

Not applicable

3.4 Other requirements of the *Contractor*'s design

Not applicable

3.5 Use of *Contractor*'s design

Not applicable

3.6 Design of Equipment

Not applicable

3.7 Equipment required to be included in the *works*

Not applicable

3.8 As-built drawings, operating manuals and maintenance schedules

The Contractor is to provide Eskom with detailed "as built" records where deviations have been made from construction drawings within 14 days after Completion.

4 Procurement

4.1 People

4.1.1 Minimum requirements of people employed on the Site

People employed on site shall have all relevant documents as required by law for employment within the country, i.e. relevant work permits and identifications.
All staff must be vetted through the Grid Security Manager's office according to the Grid code.
All workers will be subject to ad hoc breathalyser tests at all times when on duty
All workers must wear seat belts at all times when travelling while on Eskom business.

4.1.2 BBBEE and preferencing scheme

Change of Broad Based Black Economic Empowerment (B-BBEE) status
Where a change in the *Contractor's* legal status, ownership or any other change to his business composition or business dealings results in a change to the *Contractor*'s B-BBEE status, the *Contractor* notifies the *Employer* within seven days of the change.
The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Project Manager* within thirty days of the notification or as otherwise instructed by the *Project Manager*.
Where, as a result, the *Contractor's* B-BBEE status has decreased since the Contract Date the *Employer* may either re-negotiate this contract or alternatively, terminate the *Contractor*'s obligation to Provide the Works.
Failure by the *Contractor* to notify the *Employer* of a change in its B-BBEE status may constitute a reason for termination.

4.1.3 Accelerated Shared Growth Initiative – South Africa (ASGI-SA)

The *Contractor* complies with and fulfils the *Contractor's* obligations in respect of the Accelerated and Shared Growth Initiative - South Africa in accordance with and as provided for in the *Contractor*'s ASGI-SA Compliance Schedule stated below
.
[Insert the agreed ASGI-SA Compliance Schedule here]

The *Contractor* shall keep accurate records and provide the *Project Manager* with reports on the *Contractor*'s actual delivery against the above stated ASGI-SA criteria. [Elaborate on access to and format of records and frequency of submission etc.]

The *Contractor*'s failure to comply with his ASGI-SA obligations constitutes substantial failure on the part of the *Contractor* to comply with his obligations under this contract.

4.2 Subcontracting

4.2.1 Preferred subcontractors

The Contractor/Supplier to appoint own subcontractors and ensure they comply with all Eskom SHEQ requirements.

4.2.2 Subcontract documentation, and assessment of subcontract tenders

The use of the **NEC suite of Contracts** is recommended for subcontracting in order to enable a similar sub-contractor management.

4.2.3 Limitations on subcontracting

The *Sub-Contractors* will also be required to conform to the *Employer*'s SHEQ requirements

4.2.4 Attendance on subcontractors

The *Sub-Contractors* will also be required to conform to the *Employer*'s SHEQ requirements .

4.3 Plant and Materials

4.3.1 Quality

Refer to attached quality documents (TST41-168 Quality Assurance for Procurement of Assets, Goods and Services)
The contractor shall remain responsible for the quality of all the plant used and materials supplied. If the contractor's supplier is used for the manufacturing and erection of any steel work the contractor must ensure that the quality is in line with Eskom's requirements. Any non-conformance must be rectified.

4.3.2 Plant & Materials provided "free issue" by the *Employer*

Not applicable

4.3.3 *Contractor*'s procurement of Plant and Materials

Materials must be ordered in time. Delays as a result of lack of material which could have been avoided will result in delay damages being effected. Schedules must be updated and forwarded to the Project Manager as per agreement

4.3.4 Spares and consumables

Specify any constraints on how the *Contractor* is to order, codify, expedite, freight, import, transport to Site and any other requirements for delivery and storage before installation. The *Employer* may require warranties from suppliers to be in favour of the *Employer* and not just to the *Contractor* during the life of the contract. Also include requirements for vendor data which the *Employer* may need after Completion of the whole of the *works*. THIS IS A VERY IMPORTANT SECTION IN PROCESS PLANT AND UTILITY PROCUREMENT CONTRACTS.

4.4 Tests and inspections before delivery

All the testing required by Eskom will be as per specifications indicated in this document shall be done by the *Contractor/Supplier*.
All structural steelwork is to be inspected by the Contractor and Eskom Quality Representative before being delivered to site and should have a certificate from the Galvanizer stating the coating thickness.

4.5 Marking Plant and Materials outside the Working Areas

The *Contractor* shall mark all Equipment, Plant and Material which is destined for the works as indicated in the Specifications.

4.6 *Contractor*'s Equipment (including temporary works).

Not applicable

4.7 Cataloguing requirements by the *Contractor*

Not applicable

5 Construction

5.1 This part of the Works Information addresses constraints, facilities, services and rules applicable to the Temporary works, Site services & construction constraints

5.1.1 *Employer*'s Site entry and security control, permits, and Site regulations

The *Contractor* shall comply with all the requirements of SHE specification, Environmental Management Plan (EMP) and all relevant statutory requirements.
The security vetting of workers, safety and environmental training of workers and Induction courses will be done at the Substation and additional time should be provided to meet these requirements.

5.1.2 Restrictions to access on Site, roads, walkways and barricades

Although not anticipated, where the restrictions might be applicable the *Contractor* will be required to comply with these restrictions.
There will strictly be NO movement outside the barricaded area unless escorted by authorized HV Plant personnel.

5.1.3 People restrictions on Site; hours of work, conduct and records

The normal working hours shall be weekdays from 07:30 am to 04:30 pm.
The *Contractor* should keep records of his people on site including those of his sub-contractors which the *Project Manager* or *Supervisor* have access to at any time. These records may be needed when assessing compensation events Basic conditions of employment will be adhered to

5.1.4 Health and safety facilities on Site

There are no Toilet facilities available on site. The *Contractor* is to provide his own toilet facilities on site and ensure that these facilities are kept in a clean condition to Eskom's satisfaction. No work on site will be allowed to commence before the toilet facilities are available on site. The *Contractor* shall comply with all the requirements of SHE specification and all relevant statutory requirements.

5.1.5 Environmental controls, fauna & flora, dealing with objects of historical interest

The *Contractor* shall comply with all the requirements of the EMP and all other statutory requirements.
The Contractor shall comply with the environmental requirements as stipulated in TST 41-120 (Environmental Requirements for the Procurement of Assets, Goods and Services). The contractor must also comply with the following environmental procedures:
- EPC32-727: Eskom SHEQ Policy
- ST32-726 - SHE Requirements for the Eskom Commercial Process for additional requirements or co-operate projects
- The contractor must adhere to the attached Environmental Management Plan and draw up his method statements based on the attached Environmental Management Plan.

Waste generated during project must be disposed at a registered site and contractor shall retain records of disposal.
The illegal transporting, handling, purchasing and selling, poaching and killing of fauna and flora will not be tolerated. Offenders will be prosecuted. All fauna kills as a result of the activities of the contractor must be reported to the project leader /environmental advisor within 24 hours.
The *Contractor*, in and about the execution of the *works*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his subcontractors, employees and others under the ***Contractor's*** direction and control, likewise observe and comply with the foregoing.
The Contractor has no title to an object of value or of historical or other interest within the Site. The Contractor notifies the Project Manager when such an object is found and the Project Manager instructs the Contractor how to deal with it. The Contractor does not move the object without instructions

5.1.6 Title to materials from demolition and excavation

The *Contractor* shall make his own arrangements, to the approval of the *Supervisor* and the Local Authorities, for the disposal of all surplus material and construction waste resulting from the *works.* Disposal of all waste (Building, Hazardous and Domestic) must be in accordance with the CEMP.
All the materials from excavation and demolition must be disposed of by the Contractor except it's expressly stated by the PM or the relevant staff from Grid at the beginning of the contract.
Therefore all copper and steel will be stored at a designated area by the EA. And all rubble and other materials must be classified, weighed and transported to the dumping site

5.1.7 Cooperating with and obtaining acceptance of Others

It will be the responsibility to work mutually with all other contractors and personnel sharing the working area at any one time during the construction Phase. The *Contractor* will be required to integrate with other contractors, as well as *the Employer*'s personnel during construction. It is expected that cooperation will be given when this happens during the project construction.

5.1.8 Publicity and progress photographs

This **is not allowed** except with prior arrangement with the *Employer*'s *Project Manager* and media department.
Cameras are completely prohibited from use at the Substation. Where there is need to take work progress photographs it will be the responsibility of the Contractor to seek the permission to use a camera on site.

5.1.9 ***Contractor*'s Equipment**

All equipment must be registered in the equipment register as per TCT41-61. All people and vehicles entering and leaving Eskom sites will be signed in at the gates and periodically subjected to searches.

Records are to be kept of Equipment on Site including whether it is owned or hired. This includes any scaffolding, rigs, heavy lifts and cranes.

5.1.10 Equipment provided by the ***Employer***

Any equipment provided by Eskom must be used with very reasonable care. Any breakages will be for the account of the contractor. No equipment shall be provided by the *Employer*

5.1.11 Site services and facilities

The *Contractor* must make their own provision for any water (drinking and construction) requirements on site. A site for the Contractor's yard will be provided adjacent to the site of the works where possible. The Contractor shall not occupy any area on site other than what's allocated to him.
The contractor shall supply all plant and materials to complete the works.
Water and electricity is normally available on site. The contractor shall provide all connections, extensions and additional supply points necessary for the works. Adequate and/or continuous supply is not guaranteed and no claims for delay or standing time as a result of insufficiencies or failures will be considered. Any measures which the contractor may require to maintain continuity and quality of supply shall be arranged by him at his own expense.
The contractor will supply their own office equipment, including telephones and fax machines

5.1.12 Facilities provided by the *Contractor*

The *Contractor* is to provide the following items to facilitate the *Employer's* site *Supervisors* project administration within four weeks of contract award:

a) As per instruction by the Project Manager for provision made in the Bill of Quantities.

The *Contractor* shall provide sanitary amenities, first aid and firefighting facilities as required by the Occupational Health and Safety Act.

The *Contractor* keeps records of the following and submits copies of these records to the *Supervisor* weekly:

- Number of personnel by category and/or trade on site on a daily basis.
- Detailed list of equipment by category on site on a daily basis with an indication of it's working condition i.e. working order, under repair, working but standing idle etc.
- Weather conditions as agreed with the *Supervisor* on a daily basis.

A risk register is to be kept by the *Contractor* in which all events are recorded. Records of events that could give rise to Compensation Events are to be kept up to date for inspection by the *Supervisor* and/or *Project Manager* at all times and this is to be kept in a risk register. This is not for inspection purposes but for management as per core clause 16.

5.1.13 Existing premises, inspection of adjoining properties and checking work of Others

The Work is to be carried out next to an existing HV yard and the *Contractor* is to take note of the surrounding foundations, equipment and buildings. Work will be undertaken in the existing live substation environment, and care needs to be taken by the *Contractor* for all these live condition at all times.

5.1.14 Survey control and setting out of the *works*

All known services will be pointed out to the Contractor after which extreme care will be required while working in that area. Any damage of known pipes, cables or other services must be reported to the site supervisor and the damaged service must be restored at the cost of the Contractor under the supervision of either the EA or SS.
The Contractor is responsible for setting out the works.

5.1.15 Excavations and associated water control

Excavations shall only be done using machinery after careful assessment of the existing underground services and with the consensus of the EA and SS.
All necessary precautions shall be taken to ensure that deep excavations are safe and that the sides are stable, if not they shall be battered. All excavations are to be properly barricaded at all times.

5.1.16 Underground services, other existing services, cable and pipe trenches and covers

All known services will be pointed out to the Contractor after which extreme care will be required while working in that area. Any damage of known pipes, cables or other services must be reported to the site

supervisor and the damaged service must be restored at the cost of the Contractor under the supervision of either the EA or SS.

5.1.17 Control of noise, dust, water and waste

Refer to the SHE specification, EMP and any other statutory requirements.

5.1.18 Sequences of construction or installation

This will be determined by the *Contractor* and the *Site Supervisor* during execution and approved by the Project Manager.
Site clearance
Set up compliance with safety requirements (including temporary earth)
Erect the scaffolding
Cleaning of equipment
Coating of equipment
Testing/inspection
Removal of scaffolding

5.1.19 Giving notice of work to be covered up

After construction the *Contractor* is to rehabilitate any damage caused to the environment to the satisfaction of the *Supervisor*. The remedial works are to be "signed-off" by both parties before acceptance.

5.1.20 Hook ups to existing works

The contractor will work in the existing yards. Installing equipment as per the specifications

5.2 Completion, testing, commissioning and correction of Defects

5.2.1 Work to be done by the Completion Date

On or before the Completion Date the *Contractor* shall have done everything required to Provide the Works except for the work listed below which may be done after the Completion Date but in any case before the dates stated. The *Project Manager* cannot certify Completion until all the work except that listed below has been done and is also free of Defects which would have, in his opinion, prevented the *Employer* from using the *works* and Others from doing their work.

	Item of work	**To be completed by**
	Any outstanding work as listed in the Completion & Handing Over Certificates.	Within 2 weeks after Completion or as indicated in the Completion certificate.

5.2.2 Use of the *works* before Completion has been certified

To allow for the erection of electrical equipment some parts of the bays may need to be made available to the equipment suppliers before the works are completed. This will be managed by the Site Supervisor to ensure harmony and coordination of all on-going works.

5.2.3 Materials facilities and samples for tests and inspections

Take-over of The Works will be in accordance NEC procedures in conjunction with Eskom Transmission standard for substation inspection TST 41-638. The *Contractor* advises the *Supervisor* when the *Works* is available for final inspection and provides assistance.

5.2.4 Commissioning

Detailed commissioning procedure and compliance certificate shall be issued by the Contractor. Final certificate of compliance shall be issued by the contractor to the Employer after Completion.

5.2.5 Start-up procedures required to put the *works* into operation

Not applicable

5.2.6 Take over procedures

Take-over of The Works will be in accordance NEC procedures in conjunction with Eskom Transmission standard for substation inspection TST 41-638. The *Contractor* advises the *Supervisor* when the *Works* is available for final inspection, and provides assistance. The Take Over will be done after all the works have been completed .After all the outstanding work has been completed the PM will organize for a Take Over certificate to be signed with the Contractor.

5.2.7 Access given by the *Employer* for correction of Defects

The Project Manager will arrange for the HV Plant to allow the Contractor access to part of the works which has been taken over if needed to correct a Defect. After the works have been put into operation, the HV Plant may require the Contractor to undertake certain procedures before such access can be granted.

5.2.8 Performance tests after Completion

The procedure for performance test is specified under the project quality plan document

5.2.9 Training and technology transfer

This to be in compliance with the SD&L requirements and commitments

5.2.10 Operational maintenance after Completion

Not Applicable

6 Plant and Materials standards and workmanship

Title	Revision	Tick if publicly available
General Specifications:		
Health and Safety requirements TST41-61		
Environmental requirements TST41-120		
Eskom SHEQ Policy (EPC 32-727)		
SHE Requirements for the Eskom Commercial Process (additional SHE requirements) ST32-726		
Site regulations and access control **Occupational regulations for high voltage standard (ORHVS)**		
Eskom's Quality Assurance Standard QM58.		√
Eskom's Quality Assurance Standard Qm58 Quality Requirements for Procurement of Assets, Goods & Services		
Technical specifications:		
EPS 4 As Built Drawings		
EPS 2 Specification for earth mat		
EPS 5 Electrical		
EPS 6 Environmental (EMP)		
EPS 6 Environmental (EMP)		
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6.1 Investigation, survey and Site clearance

Not Applicable.

6.2 Building works

Not Applicable

6.3 Civil engineering and structural works

Not Applicable

6.4 Electrical & mechanical engineering works

Not Applicable

6.5 Process control and IT works

Not Applicable

6.6 Other [as required]

7 List of drawings

7.1 Drawings issued by the *Employer*

This is the list of drawings issued by the *Employer* at or before the Contract Date and which apply to this contract.

Note: Some drawings may contain both Works Information and Site Information.

Drawing number	Revision	Title
~~0.18/1833303.36-689~~	~~145~~	~~Olympus ODCamden Station Electric Diagram~~
~~0.47/3636~~	~~25~~	~~Matla Station Electric Diagram~~

C3.2 *CONTRACTOR*'S WORKS INFORMATION

This section of the Works Information will always be contract specific depending on the nature of the *works*. It is most likely to be required for design and construct contracts where the tendering contractor will have proposed specifications and schedules for items of Plant and Materials and workmanship, which once accepted by the *Employer* prior to award of contract now become obligations of the *Contractor* per core clause 20.1.

Typical sub headings could be

a) *Contractor*'s design
b) Plant and Materials specifications and schedules
c) Other

This section could also be compiled as a separate file.