

## PART 3: SCOPE OF WORK

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# Watershed Substation Refurbishment: Supply and installation of 275kV Tubular Busbar, 275kV Tubes post insulators, & Tubular busbar clamps

## C3.1: EMPLOYER'S WORKS INFORMATION

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Description of the *works*

## 1.1 Executive overview

### High level Project Scope of work

The works will comprise of construction in the 275kV yard for **supply & installation of 275kV Tubular Busbar, 275kV Tubes post insulators, & Tubular busbar clamps**, details per yard are as detailed below.

Contractor to read this in conjunction with the designs and specifications as listed of the works information.

### DETAIL SCOPE OF WORK

#### a. WASTE MATERIAL

- Construction rubble must be disposed of, as per Eskom's environmental and waste disposal procedures.
- Scrap steel and other material that will not be re-used will remain the property of Eskom, unless otherwise authorized, and is to be scrapped in accordance with Eskom's asset disposal procedures
- Contractor to ensure that excavated contaminated material is disposed of at a registered landfill site.

#### 1.1. Employer's objectives and purpose of the works

The objective is **to Supply and installation of 275kV Tubular Busbar, 275kV Tubes post insulators, & Tubular busbar clamps** equipment that has been identified for refurbishment, so as to renew the entire substation for the long term. As a result of the age of plant equipment at Watershed substation, Condition Criticality Risk Assessment (CCRA) was carried out in July 2014 to in order to ascertain the need for plant refurbishment. Refurbish all the aged and non-performing primary and secondary plant equipment.

#### 1.2. Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
AFC	Approved for construction
OBL	Outside battery limits
PM	Project Manager
QS	Quantity Surveyor
EA	Engineering Assistant
HV	High voltage
kV	Kilo volt
ORHVS	Operating Regulations for High Voltage Systems
SHEQ	Safety, Health, Environmental and Quality

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## **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:
Site Inaugural meeting	2 weeks prior works commencement	Watershed Substation	<i>Employer, Contractor, Supervisor, and core project team</i>
Risk register and compensation events	Weekly on Wednesday when necessary, at Watershed Substation or MS Teams	Watershed Substation or MS Teams	<i>Employer, Contractor, Supervisor, and core project team</i>
Overall contract progress and feedback	Monthly on Wednesday at Watershed Substation or MS Teams	Watershed Substation or MS Teams	<i>Employer, Contractor, Supervisor, and core project team</i>

The contractor shall avail safety file at the site inaugural meeting for auditing purposes.

Project progress meetings will be held once every fortnight on site in order to track work progress, safety, environmental and other issues. The contractor must avail himself to these meetings.

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**

The documentation supplied by the Contractor shall include be in both hard copy and electronic form. A minimum of three hard copies will be provided. Each document shall include, at a minimum, the following information:

- Title
- Status
- Revision
- References
- Purpose
- Description

### **2.3. Health and safety risk management**

In addition to the requirements of the laws governing health and safety, Eskom has additional requirements particular to the *works* and the Working Areas for this contract. Refer to the following documents as a minimum:

- The OHS Act 85/1993, its Regulations and incorporated SANS Codes

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- Eskom SHEQ Policy:32-727
- Eskom's Covid 19 Health and Safety Policy Statement: 240-155373927
- Health and Safety Specification: TPD PDPMAN-SP 84
- Working at Heights Standard: 32-418
- Life Saving Rules: 240-62196227
- Eskom Vehicle Safety Specification:32-345
- Eskom Substance Abuse, 32-37
- Eskom Occupational Health & Safety Incident Management Procedure, 32-95
- Eskom Employees Right of refusal to Work in an Unsafe Situation Procedure 240-43848327.
- Operating Regulations for High Voltage Systems Procedure: 32-846
- Hazardous Biological Agents Regulation, 2022

The authorization procedure for a permit to work shall be followed by the Contractor before commencing work on site. It is the Contractor's responsibility to ensure that a permit to work is obtained before access to the work can be given. It is the Contractor's responsibility to also ensure that the safety file has been audited by the Health and Safety Representatives before establishing site.

The Contractor must be in possession of current First Level 2 certificate. The Contractor's trucks must have a valid and current crane test certificate with the truck driver and crane operator's certificate. All tools must have valid and current test certificates, which must be produced two weeks before site establishment.

The Contractor will only leave site once a written site instruction has been issued by an Eskom site representative. Working hours will be from 08h00 to 16h00 during weekdays (as per outages), weekend work to be carried out only on request by Eskom.

The Contractor is to have an Eskom certified and authorized person available in each area where work is being performed at all times in accordance with the Eskom ORHVS Procedure 32-846.

A detailed risk assessment with sufficient control measures must be done PRIOR commencement of any task on site by a competent risk assessor. The Contractor Supervisor shall ensure strict adherence to the Safe Work Procedures and the identified control measures. If needed the Contractor is to visit construction site at own cost before work commences to familiarise him/herself with the scope of work and develop a baseline risk assessment.

Before any excavation is commenced, it will be the responsibility of the Contractor to ascertain from Responsible Eskom site Representative the position of any existing services on site. Once these are indicated to the contractor they shall be deemed "known". Should the contractor damage to the services at any point during construction the contractor will be liable for repairs at their own cost..

The Contractor's attention is drawn to the fact that other contractors will be on site hence access and interfacing with them will be required. The Contractor shall allow safe access for other contractors and Eskom personnel when required. Where multiple contractors are working close by, contractors will be required conduct a joint risk assessment and communicate shared risks to their respective contractors.

The Contractor shall establish a refuse control system. All waste is to be collected and disposed of as required by Eskom and the local authority.

The Contractor shall make his own arrangements for the provision of accommodation for his employees.

## **2.4. Environmental constraints and management**

The *Contractor* shall comply with the environmental criteria and constraints stated in 240-146467524: TPD Environmental Tender Evaluation Report

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The Contractor is required to ensure that all goods, services or works supplied in terms of the tender/contract/order conform to

- all applicable environment legislation,
- EPC32-727: Eskom SHEQ Policy,
- ST32-726: SHE Requirements for the Eskom Commercial Process.
- 240-133087117: Environmental Incident Management Procedure
- Eskom Waste Management Standard 32-245
- Transmission Power Delivery (TPD) Waste Management Plan TDPMAN-PN-53
- TDPMAN-ST-37: Environmental Requirements for Contractors and /or Suppliers

The Eskom Transmission Environmental Management Programme provides the aspects and impacts that will require management and must be followed strictly. For tendering purposes, contractor shall prepare the **following method statements** for all environmental concerns raised through the Eskom Transmission Environmental Management Plan and in any other relevant forum such clarification meetings

- Water supply
- Waste management
- Storage of hazardous material
- Noise management
- Dust management
- Soil erosion
- Stormwater management
- Mixing of concrete
- Vehicle maintenance and refuelling (in case of an emergency)
- Vegetation clearance
- Accessibility of the site (access road)
- Equipment and construction material storage
- Topsoil management
- Rehabilitation

Any changes to the approved method statements / mitigation plan shall be reported and approved by Eskom Transmission Environmental representative and Project Manager prior to the commencement of work and during construction. The main supplier must ensure that all sub-contractors' environmental mitigation plan comply with legal and other requirements and includes all the environmental risks associated with the scope of work. The main (principal) contract shall define the specific system elements (risk) applicable to the subcontractor's scope of work or supply.

No environmental records shall be destroyed or discarded by the supplier. Eskom and the contractor shall agree that the supplier retains certain environmental records and provides Eskom with copies.

The Contractor is to send a flash report for any environmental incidents that have occurred on site as soon as possible or within 24 hours to the Environmental Advisor Contact person and PM, clearly stating any impact to the environment.

Waste generated for the Watershed refurbishment project must be disposed at a registered landfill site and contractor shall retain records of disposal. This includes waste generated during demolition of the existing type oil holding dam and existing septic tank.

Deviations from these requirements will be regarded as a non-conformance. Should there be a concern regarding environmental performance and non-conformance to environmental requirements, management engagements and interventions will be introduced to determine a means to addressing the shortfalls. Once these interventions have been explored and exhausted, then the Eskom supplier disciplinary process must be followed.

NB: The Contractor is to compile a complete environmental file. The file needs to be audited and approved by the Transmission Environmental Department, prior to commencement of work.



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### **2.5. Quality assurance requirements**

The following standards contain provisions that, through reference in this text, constitute provisions of this specification. At the time of publication, the revisions indicated were valid. All standards are subject to review, and parties entering into service agreements based on this specification are encouraged to investigate the possibility of applying the most recent revisions of the standards listed below. Information on currently valid national and international standards may be obtained from the Information Centre at Megawatt Park and Technology Standardisation Department.

In the event of conflict between documents invoked here and the contents of this specification, the contents of this specification shall be considered to have preference. Such conflict shall be pointed out to the Employer for confirmation.

- Eskom NWS 1674 - "Standard Specification for approval of drawings submitted by Contractors and Contractors."
- Project Quality plan

The Employer requires that the Contractor operate a quality management system as stated in the Scope.

The Employer requires that the Contractor provide a quality policy statement and quality plan which complies with requirements stated in the Scope.

Nonconformity reports raised by Eskom and issued against the supplier shall be investigated by the supplier as a matter of urgency in order to determine the root cause, corrective action measures, as required, with implementation time frames. A formal response shall be submitted to Eskom for its review, evaluation, and acceptance, within a maximum of 14 calendar days from the date of issue of the nonconformity and should be aligned with the site requirements/procedure.

### **2.6. Programming constraints**

A comprehensive and fully detailed programme is to be submitted within the time frames stated in the "Data by Employer" section and should be in MS Project format, indicating all milestones and critical dates. This programme must first be approved by the Project Manager and must be updated monthly or as requested by the Project Manager. Only MS Projects format will be allowed.

The following dates shall be clearly reflected on the programme:

Starting and completion dates 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 or in the workshop. The programme shall also reflect a 2-week period for inspection and correcting of Defects before the completion date.

Updated programmes must be available at all site meetings reflecting progress to date.

The Contractor shall include all stages including deliverables per stage in the programme. The programme shall be submitted to the Employer for acceptance in MS Projects format.

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

The Contractor is to submit an organogram showing all key people involved in the contract 7 days after contract award. All key personnel must be appointed in writing, must be current for the specific site and area of work and must be kept on file.

### **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.

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The *Contractor* shall address the tax invoice to Eskom Holdings SOC Ltd 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;

Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;  
(add other as required)

The contractor must submit an FRI within 2 weeks of contract award.

Details on how to submit invoices and additional information:

- Ensure that the Eskom order number is clearly indicated on your invoice together with the line number on the order you are billing for.
- All Electronic invoices must be sent in PDF format only.
- Each PDF file should contain one invoice; or one debit note; or one credit note only as Eskom's SAP system does not support more than one PDF being linked into workflow at a time.
- Your E-mail may contain more than one PDF file (e.g. 2 invoices on 2 separate PDF files in one e-mail)
- Send all invoices in PDF to Accounts Payable Department: [Invoiceseskomlocal@eskom.co.za](mailto:Invoiceseskomlocal@eskom.co.za) and a copy to the Project Manager
- If there is Cost Price Adjustment (CPA) on your invoice we recommend that you issue a separate invoice for CPA so that if there are any issues on the CPA the rest of the invoice can be paid while resolving the CPA issues.
- Your company can request a park invoice report from the Finance Shared Services (FSS) contact center which can then be followed up and corrected. You are welcome to forward the details of invoices corrected to the FSS contact center.

The following wording needs to appear on the invoice: "Your invoice is encrypted in order to comply with SARS requirements that invoices and statements sent electronically are tamperproof."

- If there is Cost Price Adjustment (CPA) on your invoice we recommend that you issue a separate invoice for CPA so that if there are any issues on the CPA the rest of the invoice can be paid while resolving the CPA issues.
- Introduction of electronic invoicing does not guarantee payment but will ensure visibility of all invoices and ensure that no invoices get lost. If the goods receipt is not done the invoice will be parked and the system will automatically send an e-mail to the end user to do the goods receipt. This is also tracked by Eskom through the park invoice report.
- Your company can request a park invoice report from the Transmission Power Delivery Projects Finance Team which can then be followed up and corrected. You are welcome to forward the details of invoices corrected to the FSS contact center.

Once the invoice has been sent; all communication regarding the payments should be addressed with the Project Manager and Project Finance Team, Zama Ncamphalala (Project Accountant) +27 11 516 7746, Doreen Segopa (Project Accountant) +27 11 800 5641 and Tumelo Aphane (Project Accountant) +27 11 800 5437.

No communication regarding payment should be sent by the Contractor/Supplier directly to Accounts Payable.

The Contractor attaches the detailed assessment of the amount due to each tax invoice showing the Price for Work Done to Date for each item in the Price List for work which he has completed.

A tax invoice shall be submitted on completion of the works in the format required. A breakdown of all work completed during the previous period shall be attached. Invoicing and relevant details will be discussed at

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site hand-over meeting. Payments will be processed once all completion certificates and invoices are submitted

**2.9. Insurance provided by the *Employer***

Refer to data by *Employer* Z13

**2.10. Contract change management**

Not applicable

**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, Proforma and Guarantees.

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, payment & assessments of compensation events to be kept by the Contractor**

Defined costs are actual costs incurred by the Contractor. These costs should not include profit or company overheads. All compensation events will only be paid on defined costs plus fee as provided by the Contractor under "data by Contractor" Part C1.2b of the contract.

In an event of labour costs, the Contractor is required to provide pay slips of the employees used. The labour mark-up indicated in this contract will be added to these actual costs to form the final value of the compensation event.

In the event that the Contractor is required to supply anything other than people, the Contractor is required to provide a copy of his Contractors invoice. The profit and overhead mark-up indicated in this contract will be added to these actual costs to form the final value of the compensation event.

Copies of payslips and Contractors invoices are to accompany the requests for compensation events.

The Contractor shall under no circumstances refuse additional work on the basis of costs as defined above. Copies of all Compensation Events and supporting documentation shall be kept and provided to Eskom when required.

**3. Engineering and the *Contractor's* design****3.1. *Employer's* design**

Eskom has designed the new foundations, steel structures, earthworks and terracing, etc as detailed on the relevant drawings and specification.

**Watershed Substation Refurbishment: Supply and installation of 275kV Tubular Busbar, 275kV Tubes post insulators, & Tubular busbar clamps****3.2. Parts of the *works* which the *Contractor* is to design**

The Contractor is to design any temporary works required to construct the works if not provided in the designs.

In the case where Eskom requires the contractor to design some parts of the works. It will be communicated and relevant procedures and process will be applicable.

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

In the case where Eskom requires the contractor to design some parts of the works. It will be communicated and relevant procedures and process will be applicable.

**3.4. Other requirements of the *Contractor's* design**

In the case where Eskom requires the contractor to design some parts of the works. It will be communicated and relevant procedures and process will be applicable.

**3.5. Use of *Contractor's* design**

In the case where Eskom requires the contractor to design some parts of the works. It will be communicated and relevant procedures and process will be applicable.

**3.6. Design of Equipment**

Not applicable

**3.7. Equipment required to be included in the *works***

The Contractor to provide necessary equipment to execute the works on site.

**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**

The Contractor shall comply with the Employer's site requirements in the use of labour for the works.

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All people employed on site by the Contractor shall have Police clearance before work on site can commence. The Contractor's employees shall be sober on site and may be subjected to random breathalyser tests.

### **Local production and content**

As per DTi guidelines {PPPFA act section 9, paragraph 9(1)} Steel forms part of the designated commodities with a threshold of 100%. As a result tenderers are required to fill in, sign and submit local content declaration forms to confirm their local spend on steel. Failure to do as stated above and to meet the threshold as set by DTi will disqualify a tenderer.

Material	Threshold %
Steel	100%
Cement	100%

### **4.1.2. BBBEE and preferencing scheme**

The Contractor shall comply with the Employer's Broad Based Black Economic Empowerment (B-BBEE) or preferencing scheme measures

### **Pre-qualification criteria for preferential procurement will apply as follows:**

- (a) a tenderer subcontracting a minimum of 30% to: EME/QSE that are B-BBEE level 1 to 2.

### **4.1.3. Supplier Development, Localisation and Industrialisation (SDL&I)**

The *Contractor* complies with and fulfils the *Contractor's* obligations in respect of the SDL&I in accordance with and as provided for in the *Contractor's* SDL&I Compliance Schedule stated below:

The *Contractor* shall keep accurate records and provide the *Project Manager* with reports on the *Contractor's* actual delivery against the above stated SDL&I criteria. The Contractor shall keep accurate records and provide the Project Manager with reports on the Contractor's actual delivery against the above stated SDL&I criteria.

The *Contractor's* failure to comply with his SDL&I obligations constitutes substantial failure on the part of the *Contractor* to comply with his obligations under this contract.

Skills development will not be a weighted criterion, but tenderers will be encouraged to propose training initiatives in terms of the skills required for this project. Eskom will apply a penalty of 2.5% of the contract value for failure to meet SDL&I obligations after agreement is reached. For the duration of the contract, Eskom will retain 2.5% of every invoice (excluding VAT) as security for the fulfilment of all SDL&I Obligations. The retained amounts shall only be released to the contractor upon fulfilment of all SDL&I obligations at the end of the contract. Alternatively, the contractor shall submit a bond equivalent to 2.5% of the contract value and shall only be released to the contractor upon fulfilment of all SDL&I obligations

## **4.2. Subcontracting**

### **4.2.1. Preferred subcontractors**

The Employer reserves the right to approve all subcontractors that the Contractor intends to enter into subcontracts with in order to make sure that the subcontractor complies with operational standards.

**Watershed Substation Refurbishment: Supply and installation of 275kV Tubular Busbar, 275kV Tubes post insulators, & Tubular busbar clamps****4.2.2. Subcontract documentation, and assessment of subcontract tenders**

The NEC suit is compulsory for all subcontract documentation.

**4.2.3. Limitations on subcontracting**

The Contractor shall not subcontract more than twenty five percent (25%) of the whole of the contract.

**4.2.4. Attendance on subcontractors**

The *Contractor* is responsible for providing the Works as if no work is subcontracted.

**4.3. Plant and Materials****4.3.1. Quality**

The *Contractor* shall control his activities and processes in accordance with Eskom's Quality Requirements for Procurement of Assets, Goods & Services QM 58, as amended. Quality requirements are described in the Project Quality Plan document number TB-PQA&QC-TX, as amended.

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

Not applicable

**4.3.3. *Contractor's* procurement of Plant and Materials**

The contractor is to procure any plant and material necessary to execute the works on site.

**4.3.4. Spares and consumables**

Not applicable

**4.4. Tests and inspections before delivery**

All structural steelwork as well as fencing and lighting poles is to be inspected by the *Contractor* before being delivered to site and should have a certificate from the Galvanizer stating the coating thickness. The requirements are also indicated on the Project Quality Plan document number TB-PQA&QC-TX-PQP-2009 and QM 58.

**4.5. Marking Plant and Materials outside the Working Areas**

Not applicable

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

**Watershed Substation Refurbishment: Supply and installation of 275kV Tubular Busbar, 275kV Tubes post insulators, & Tubular busbar clamps**

The contractor is to ensure that they have the necessary equipment and temporary works required to execute the works on site.

## **5. Construction**

### **5.1. Temporary works, Site services & construction constraints**

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

Entry to the site is governed by the Grid's Engineering Assistant and the Contractor shall adhere to all regulations given. All employees are to sign the Workers declaration on entering and leaving the working area. The Contractor is to have an Eskom certified and authorized ORHVS person available on site at all times in accordance with ORHVS Procedure 32-846.

The authorized ORHVS person is to have a valid first aid level 2 certificate. The authorization procedure for a permit to work shall be done before the Contractor commences work on site. It is the Contractor's responsibility to ensure that the authorization procedure for a permit to work is obtained before access to the work can be given. The Contractor will be required to have an Eskom certified and authorized ORHVS person available in each area where work is being performed.

#### **5.1.2. Restrictions to access on Site, roads, walkways and barricades**

Access on site is restricted to the area in which the Contractor is working and which has been barricaded. Strictly no movement outside the barricaded working area unless escorted by authorized HV Plant personnel. The majority of the work is to be performed in the live HV Yard and the contractor will take all necessary precautions and work in conjunction with Eskom personnel.

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

The Contractor is to supply Eskom with Police clearance for all the employees on site before Work commences. The normal working hours shall be from 07:30 am to 04:30 pm. Any work done outside this duration must be arranged through the senior HV Plant supervisor. The maximum speed limit on site is 40 km/h.

#### **5.1.4. Health and safety facilities on Site**

There are no ablution facilities available on site. Contractor to provide their his own ablution and dining facilities in accordance with the TPD Health and Safety Specification. Refer to Clause 24 -***Contractor's Site Facilities*** in the Health and Safety Specification. No work on site will be allowed to commence before the ablution facilities are available on site.

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

The Contractor shall control his activities and processes in accordance with TDPMAN-ST-37: Environmental Requirements for Contractors and /or Suppliers. The Contractor shall establish a refuse control system. All waste is to be collected and disposed of as required by Eskom and the Local Authority.

#### **5.1.6. Title to materials from demolition and excavation**

**Watershed Substation Refurbishment: Supply and installation of 275kV Tubular Busbar, 275kV Tubes post insulators, & Tubular busbar clamps**

All the materials from excavation and demolition must be disposed of by the Contractor except where expressly stated by the PM or the relevant staff from the Grid. All rubble and other materials must be classified, weighed and transported to a registered dumping site.

**5.1.7. Cooperating with and obtaining acceptance of Others**

The Contractor's attention is drawn to the fact that other contractors will be on site and access and interfacing with them will be required. The Contractor shall allow safe access for other contractors and Eskom personnel when required.

The site is situated near communities. Therefore the contractor may be required to liaise with local authorities for community stability purposes in and minimizing interruption of executing the works..

**5.1.8. Publicity and progress photographs**

Warning signs and notices must be clearly displayed at all sites where work is taking place. It is the responsibility of the Contractor to ensure that all its workers and visitors adhere to all signs.

No photographs are to be taken without the permission of the E.A.

**5.1.9. Contractor's Equipment**

All equipment must be registered in the equipment register and as per 32-136. The Contractor is responsible for insurance of his equipment. The Contractor is to take stock of his material and equipment on a regular basis and any shortage to be reported to the Project Manager immediately, stating if it is hired or owned.

**5.1.10. Equipment provided by the Employer**

Not applicable

**5.1.11. Site services and facilities**

All the water necessary for construction purposes must be provided for by the Contractor. It is the Contractor's responsibility to test any water before using it for construction purposes. The Contractor to submit a test Certificate for the water used on site. Electricity is available on site. The Contractor shall provide all connections, extensions and additional supply points necessary for the works. 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 shall provide everything else necessary for providing the Works.

**5.1.12. Facilities provided by the Contractor**

The Contractor supplies all plant and materials required for providing the Works. There are no Office or Telephone facilities available on site. The Contractor is to provide his own facilities on site and ensure that these facilities are kept in a clean condition to Eskom's satisfaction

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

For work that 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.



**Watershed Substation Refurbishment: Supply and installation of 275kV Tubular Busbar, 275kV Tubes post insulators, & Tubular busbar clamps****5.1.14. Survey control and setting out of the works**

The Contractor is responsible for setting out the works.

**5.1.15. Excavations and associated water control**

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**

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.

**5.1.17. Control of noise, dust, water and waste**

The Contractor shall control his processes and procedures so as to minimise noise and dust. All waste is to be collected and disposed of as required by Eskom and the Local Authority.

**5.1.18. Sequences of construction or installation**

Some of the works will be impacted by outages. The contractor will discuss outages with the PM to schedule the works accordingly. Contractor to ensure security of the site and equipment when working on the terrace extensions.

**5.1.19. Giving notice of work to be covered up**

The Contractor is to give the Site Supervisor at least 3 days' notice before covering up the work

**5.1.20. Hook ups to existing works**

The earthing of the new foundations is to be connected to the existing yards earthing. The new oil dam drainage should be connected to the existing oil drainage for the transformers. The sewer piping to be connected to the new sewer connections. The modified security fence to be connected to the existing fence.

**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.

## **Watershed Substation Refurbishment: Supply and installation of 275kV Tubular Busbar, 275kV Tubes post insulators, & Tubular busbar clamps**

	<b>Item of work</b>	<b>To be completed by</b>
	As built drawings	Within 14 days after Completion

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

To allow for the erection of electrical equipment some parts of the feeder 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**

Not applicable

### **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**

The *Contractor* is to arrange an inspection at least 1 week before completion to inspect and identify any defective work.

Upon completion of the works, a formal take over by the employer will take place after correction of identified defects.

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

The Project Manager arranges for the Employer to allow the Contractor access to and use of a part of the works which has been taken over if needed to correct a Defect. After the works have been put into operation, Entry to the site is governed by the Grid's Engineering Assistant and the Contractor shall adhere to all regulations given.

### **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**

**Watershed Substation Refurbishment: Supply and installation of 275kV Tubular Busbar, 275kV Tubes post insulators, & Tubular busbar clamps**

Not applicable.

**5.2.10. Operational maintenance after Completion**

Not applicable

**6. Plant and Materials standards and workmanship****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]**

Not applicable

**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.