

PART 3: SCOPE OF WORK

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C3.1: EMPLOYER'S WORKS INFORMATION

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1 Description of the works

1.1 Executive overview

Esselen Emergency Bypass Project at Esselen substation, Scope is to complete the outstanding Civil Work remaining and the Stringing & Cabling works at Esselen Substation. To be done in accordance with the attached scope of work dated 05 December 2018 as follows:

Outstanding Civil Works

- Complete the remaining foundations for the Isolators & related PI supports steelwork.
- Erect the main steelwork, columns and beams.
- Erect the Isolator supports.
- Reduce the PI supports already erected on site by half a meter for the clearance under the 275kV line in accordance with drawing 0.18/33561.
- Extend the new trench by $\pm 35\text{m}$ as per the drawing 0.18/17324 Sheet 4 Rev 2.
- Install the cable Sleeve as per the drawing 0.18/17324 Sheet 4 rev 2.
- The remaining fence to be installed in accordance with drawing 0.18/17324 Sheet 3 Rev 3.
- The existing paving is not completely laid in a small area between safety fence and kerbing, use the same paving blocks to match the existing paving.

Stringing & Cabling Works

- Install the 275kV Bypass Isolator
- Install the 132kV Isolator
- Complete all the stringing from Apollo 2 275kV line dropping down to tubes and from the 275kV Bypass isolator to tubes.
- Complete the stringing from the 88kV Feeder 11 (SAR Modder 2 TEE) Gantry to 275kV SAR Modder 2 TEE 1st Inline Strain Steel H-Pole.
- Re-string the 88kV Feeder 11 (SAR Modder 2 TEE) as per 0.18/17320 Sheet 45, Rev 5 using twin Bull (2 x 800mm²).
- Where missing, not installed or installed incorrectly: Install Earth Connections (2 x 10mm Copper Rods) as per 0.18/17324 Sheet 4 Rev 2.
- 2 X core cables to be pulled from the respective Isolators to the bay JB's (88kV Feeder 11 & 275kV Feeder 4) for the feeders.

1.2 Employer's objectives and purpose of the works

The objective of the project is to construct a permanent emergency bypass and the scope is to complete the remaining civil work and do the stringing & cabling works at Esselen Substation in accordance with the attached scope of work

1.3 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

AFC	Approved for construction
H V	High voltage
kV	Kilo volt
ORHVS	Operating Regulations for High Voltage Systems

2 Management and start up.

2.1 Management meetings

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk register and compensation events	As and when required	Site/Eskom Head Office	PM, QS, Site Supervisor, Contractor
Overall contract progress and feedback	Monthly on Site	Site	Employer, Contractor, Supervisor, and Grid Representatives
Inaugural meeting	Before or after safety and environmental files have been assessed and approved.	Site	PM, QS, Site Supervisor, EA, Grid safety and environmental representatives and the Contractor.
Toolbox talk and risk assessment	Daily on Site before work begins.	Site	Contractor and Site Supervisor.

Site inaugural meeting will be held two weeks prior to commencement of site activities and the contractor shall avail safety file 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. A contractor must avail himself to these meetings.

Meetings of a specialist nature may be convened 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

The Contractor shall at all times comply with the health and safety requirements prescribed by law as they may apply to the works. The Contractor shall comply with the health and safety requirements contained in the following documents:

- SHEQ policy – 32 727
- Eskom Procurement and supply chain management procedure – 32-1034
- SHE Requirements for the Eskom Commercial process – 32- 726
- Contractor health and safety requirements – 32-136
- Integrated SHE organisation: roles and responsibilities and statutory appointments – 32-296
- Life saving rules – 240-62196227
- Working at heights – 32-418
- Eskom Vehicle safety specification – 32-345
- Employer's Health and Safety requirements - TST32-136

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 aid 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 week days (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 Eskom transmission standard TST32-136 contractor safety in a high voltage environment.

A complete safety and risk assessment must be done BEFORE the contractor starts works on site. The Site Supervisor will be monitoring the works continuously to ensure strict adherence to Safety rules. If needed, the contractor is to visit the site at the Contractor's own cost before work commences to familiarize with the scope of works and to assess any safety issues.

Before any excavation is commenced, it will be the responsibility of the Contractor to ascertain from the Site Supervisor 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 allow safe access for other contractors and Eskom personnel when required.

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.

Copies of the Valid Eskom ORHVS Certificates are to be submitted with the tender documents.

The contractor is to compile a complete Safety File. The file needs to be audited and approved by the Transmission Services Risk and Safety Department in Central. Contact person:

Buks De Klerk, Contact No. +27 83 788 3665

PLEASE NOTE that only once approval for the SAFETY FILE has been granted by Transmission Services Risk and Safety Department, can the contractor commence with the works.

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 Contractor shall make his own arrangements for the provision of accommodation for his employees. No

accommodation or camping will be allowed on site.

2.4 Environmental constraints and management

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, Authorisations, EPC32-727: Eskom SHEQ Policy, ST32-726: SHE Requirements for the Eskom Commercial Process and Project Specific Environmental Management Plan (EMP).

The Eskom EMP provides 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. The contractor must develop method statements based on the EMP. All developed method statements must be approved by the Employer.

Any changes to the approved EMP shall be reported and approved by (BUER) and Project Manager prior to the commencement of work and during construction.. The supplier must ensure that all sub-contractors' environmental management programmes comply with the contract shall define the specific system elements applicable to the subcontractor's scope of work or supply.

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 send a flash report for any environmental incidences that has occurred on site as soon as possible or within 24 hours to the SS /Grid Environmental and PM clearly stating any impact to the environment.

Contractor must now sign-off TRM-FM-0038 – Eskom Holdings Transmission division contractor environmental compliance Proformas.

If waste is generated during project, it must be disposed at a registered site and contractor shall retain records of disposal.

Deviations from these requirements will be regarded as a non-conformance. Should there be a concerns 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.

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 Grid Environmental Advisor clearly stating any impact to the environment.

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

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.

2.6 Programming constraints

A comprehensive and fully detailed programme is to be submitted within the seven (7) days after the inaugural meeting 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.

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.

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

The following details shall be shown on or attached to each Invoice to show how the amount due has been assessed:

The Contractor shall address the tax invoice to ESKOM HOLDINGS SOC LIMITED (Reg No. 2002/015527/06) and include on each invoice the following information

- Name and address of the Contractor and the Employer's Agent;
- Contractor's VAT registration number;
- The Employer's VAT registration number 4740101508;
- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;
- Other amounts to be paid to the Contractor;
- Less amounts to be paid by or retained from the Contractor;
- The change in the amount due since the previous payment being the invoiced amount - excluding VAT, the VAT and including VAT;

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

All quantities claimed must be verified and signed by the site supervisor on the 20th of each month or within 1 week after each sectional completion and the signed BOQ must accompany the invoice which should be submitted to the PM before the 25th of each month. Late invoices will be deferred to the following month and no concessions will be made.

2.9 Insurance provided by the *Employer*

Refer to Core Clause 87.1

2.10 Contract change management

Where standard forms are available they should be used

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*

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.

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

2.13 Training workshops and technology transfer

Not applicable

3 Engineering and the *Contractor's* design

3.1 *Employer's* design

The *Employer* has designed for the works; the *Contractor* is mainly doing construction only. Eskom has designed the new foundations as detailed on the relevant drawings listed on this document and the quantities are given in the bill of quantities.

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*

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

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

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

4.1.3 SKILLS DEVELOPMENT LOCALISATION & INDUSTRIALISATION – SDL&I

The *Contractor* complies with and fulfils the *Contractor's* obligations in respect of the Skills Development, Localisation and Industrialisation in accordance with SDL&I Matrix as provided for in the *Contractor's* SDL&I Compliance Schedule stated below

Local to South Africa targets are applicable as per below Matrix:

Site TABLE 1: SUPPLIER DEVELOPMENT AND LOCALISATION COMPLIANCE MATRIX FOR SUPPLIERS AND CONTRACTOR				
Criteria	Weight (%)	Total Target (%)	Proposed Target (%)	Total Overall Weighted Score
Local Content to South Africa	75%	100%	0%	0,00%
Skills development	25%			0,00%
Total	100%			0,00%
	Total Supplier Development and Localisation Score			0,00%

Skills Development

TABLE 2: SKILLS DEVELOPMENT COMPLIANCE MATRIX						
OFO Occupational Group	Weight (%)	Target Number of Persons to be Trained (Local to South Africa)	Proposed Number of Persons to be Trained (Local to South Africa)	Target Number of Persons to be Trained (Local to Site)	Proposed Number of Persons to be Trained (Local to Site)	Total Weighted Score
	100,00%	0	0	1	0	0,00%
Total	100,00%	0	0	1	0	0,00%

NB: Development of skills is set aside for **local to Site people** and proof of skills development to be submitted to the Employer

Supplier to populate and propose targets (separately) in the SDL&I Matrix provided which is formulae based.

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.

4.2 Subcontracting

4.2.1 Preferred subcontractors

The *Contractor* submits the names of each proposed subcontractor to the *Employer* for acceptance. The *Contractor* does not appoint a subcontractor until the *Employer* has accepted him.

4.2.2 Subcontract documentation, and assessment of subcontract tenders

The NEC system is compulsory for all subcontract documentation

4.2.3 Limitations on subcontracting

Not applicable

4.2.4 Attendance on subcontractors

The *Contractor* is responsible for providing the Works as if he had not 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 QM58 as amended. Quality requirements are described in the Project Quality Plan document number TB-PQA&QC-TX-PQP-2009

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

Not applicable

4.3.3 *Contractor's* procurement of Plant and Materials

Not applicable

4.3.4 Spares and consumables

Not applicable

4.4 Tests and inspections before delivery

Not applicable

4.5 Marking Plant and Materials outside the Working Areas

Not applicable

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

Not applicable

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 Eskom's Construction Safety, Health and Environmental Management 32-136.

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. Please contact Ms Gladys Motaung 011 871 2397 or 083 278 8052 to arrange for an interview for authorization.

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.

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 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.

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

The *Contractor* shall control his activities and processes in accordance with Eskom's Environmental Requirements TST41-120.

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

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.

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 his own 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* will submit 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.

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.

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

The contractor to take note of the surrounding equipment and buildings during construction. The work will be carried out on the access road to the substation.

5.1.14 Survey control and setting out of the works

The *Contractor* is responsible for setting out the works as shown on the drawings

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

Accommodation of traffic during construction
Prepare crusher run mix with cement stabilisation as per the works information
Spray emulsion
Close potholes with asphalt cold mix
Clean excessive duct and fallen leaves
Blinder should then be applied
Apply single coat of slurry

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 *Contractor* will work in the existing HV Yard, 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
	As build 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

Not applicable

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 outstanding or incorrect items.

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

Not applicable.

5.2.10 Operational maintenance after Completion

Not applicable.

6 Plant and Materials standards and workmanship

This section of the Works Information contains all the specifications for the work which is left behind; the permanent works. It is likely to be the largest section by far and may even be compiled in volumes, e. g. Section 6 Volume 1: Civil Engineering Works. In design and construct contracts, it may be compiled in accordance with systems within the *works*; e. g. Section 6 Volume 4: Crushers.

Because practice varies widely between employers it is not practical in a general template such as this to deal with all arrangements. Only the discipline based section subheadings are provided below in the order the *works* are likely to be constructed together with some notes of a general nature.

6.1 Investigation, survey and Site clearance

Some contracts may require the *Contractor* to carry out further investigation of existing facilities or of the Site before commencing final design. There could be constraints on Site clearance especially in pipeline or transmission grid servitudes.

6.2 Building works

Not applicable

6.3 Civil engineering and structural works

Title	Date or revision	Tick if publicly available
Eskom Standard Specifications		
Construction Safety, Health and Environmental Management 32-136	Latest Rev.	✓
Eskom Cardinal Rules 32-421	Latest Rev.	✓
Safety, Health and Environmental (SHE) Policy 32-94	Latest Rev.	✓
32-726 SHE Requirements for Eskom Commercial Process	Latest Rev.	✓
(SHE) Policy 32-727	Latest Rev.	✓
Smoking Procedure 32-36	Latest Rev.	✓
Vehicle and Driver Safety Management 32-93	Latest Rev.	✓
Eskom Vehicle Safety 32-345	Latest Rev.	✓
Working at Heights 32-418	Latest Rev.	✓
TST41-120 Environmental Requirements for the Procurement of Assets, Goods and Services.	Latest Rev.	✓
TST0015 Training, assessment and authorization of persons for the operation & maintenance of the Power System Contractor Safety in a High Voltage Environment	Latest Rev.	✓
TPC41-283 Non Conformance Procedure	Latest Rev.	✓
Occupational Health and Safety Act No. 85 of 1993	Latest Rev.	✓
QM58 Quality Requirements for Procurement of Assets, Goods & Services.	Latest Rev.	✓
Eskom Particular Specifications		
EPS 1 Specification for Earthmat	Attached	
EPS 2 Specification for Stone surfacing of yard	Attached	
EPS 3 Variations and Additions to Standardised Specifications	Attached	
Standardised Specifications		
SABS 1200 Standardised Specification for Civil/Electrical		✓

Engineering Construction		
SANS 2001 CC1:2007 Construction Works Part CC1: Concrete Works (structural)		✓
SANS 2001 CS1:2007 Construction Works Part CS1: Structural steelwork		✓
NWS 1058 Safety at Construction Sites		✓

ESKOM PARTICULAR SPECIFICATIONS

EPS.1 SPECIFICATION FOR EARTHMAT

Not applicable

1. MEASUREMENT AND PAYMENT

The rates as scheduled in the Bill of Quantities shall cover the cost of all activities, labour, materials and testing required for the provision of the relative item in accordance with the drawings and specification.

EPS.3 Variations and Additions to Standard Specifications

SABS 1200 A (1986) GENERAL

VA-A 2 INTERPRETATIONS

Not applicable

VA-A 3 MATERIALS

VA-A 3.1 QUALITY

Add:

The Contractor shall at his own expense supply and provide all the Constructional Plant, Temporary Works, materials for both temporary and permanent works, labour and supervision, transport to or from the site and in and about the Works and everything required for the construction, completion and maintenance of the Works. The Contractor shall ensure that all the foregoing constituent parts of the Works are to the standard and quality elsewhere specified in these documents or where not specified to the highest quality available and shall also ensure they are suitable for purpose intended by the Employer.

The Contractor shall be responsible for the strength and quality of all materials used and workmanship employed and for the stability of the permanent works and the temporary works and the fact that the Employer has not objected during the construction period to any materials and/or workmanship employed by the Contractor and even though such materials and/or workmanship has been inspected by the Supervisor shall not relieve the Contractor of such responsibility.

VA-A 5 CONSTRUCTION

VA-A 5.1 SURVEY

Setting out of the Works

Add:

Survey reference marks and bench marks supplied by Eskom shall be to a datum defined in writing and or on the drawings.

VA-A 5.2 WATCHING, BARRICADING, LIGHTING AND TRAFFIC CROSSINGS

The requirements for watching, barricading, lighting, etc. shall be as follows:

Every excavation, which is accessible to the public, including other contractor's or Eskom personnel, or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered shall be:

- (a) protected by a barrier or fence consisting of not less than two ropes or wires stretched at heights of 600 mm and 1 200 mm between poles or standards, of strength adequate to safely contain pedestrians and as close to the excavation as is practicable; and
- (b) provided with red warning lights or any other clearly visible boundary indicators at night or when visibility conditions are poor.

VA-A 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES

Add:

Adequate prior notice in writing by Eskom of the existence of any services shall be deemed sufficient to make such services "known" to the Contractor.

VA-A 5.6 POLLUTION

Add:

A refuse control and removal system shall be implemented by the Contractor. All construction waste shall be collected and removed from site. Refuse may only be disposed of in recognised registered disposal sites.

VA-A 5.9 SITE TO BE LEFT CLEAR

At all times prior to the completion of the Works and including the period of maintenance the Contractor shall be solely responsible for maintaining the site in a clean, tidy and safe condition to the satisfaction of the Supervisor and is deemed to have made due allowance in the contract prices therefore. Eskom shall be entitled to instruct the Contractor at any time to remove any excess materials, debris, rubbish and the like from the site and the Contractor shall forthwith comply with such instructions and at no extra cost to the Employer.

On completion of the Permanent Works the Contractor shall, at his own expense, remove all surplus excavated materials, debris, unused materials, temporary erections and plant save that required for maintenance work which shall be removed, as aforesaid, on completion of the whole of the Works. However no means, appliances, guards or other things provided in presence of the Machinery and Occupational Safety Act or for securing the safety of persons may be removed if such removal constitutes a change to the safety of persons.

VA-A 5.10 DIMENSIONS

Dimensions on the Drawings are to be considered correct even if not drawn to scale. No dimensions shall be obtained by scaling.

VA-A 7.5 CONTROL TESTS

The Contractor shall carry out, at his own cost, such tests as he considers necessary to satisfy himself that his work is sound. He shall also carry out such tests as have been specified and are included in the rates, and submit the results to Eskom.

Eskom may order such additional tests as it considers necessary to prove compliance with the Specification. The cost of such additional tests shall be borne:

- (a) by the Employer if the result of the additional test indicate that the Works or the part of it that was subjected to the tests comply with the applicable requirements, and
- (b) by the Contractor if the results indicate that the Works or the said part of it do not so comply.

VA-A 8 MEASUREMENT AND PAYMENT

VA-A 8.2 PAYMENT

VA-A 8.2.1 FIXED AND VALUE RELATED ITEMS

Delete ...in a single payment in terms of the first..... and replace with ...pro-rata payment in terms of each progress certificate

VA-A 8.2.2 Time-related Items

Delete and replace with:

Payment for time-related items will be effected as follows only after payment for the relevant fixed charge item if any has been made.

Subject to the provisions of SABS 1200 A clauses 8.2.3 and 8.2.4, payment of incremental amounts (calculated by the division of the remainder of the tendered sum by the number of months required to complete the site activities for which the relevant sum was tendered) will be authorised in each of the subsequent progress certificates until the sum tendered has been paid, provided that the Employer shall be entitled to amend the amount to be paid in respect of time-related items in the event of:

- (a) extension of time being granted in accordance with the contract.
- (b) adjustment to the time-related items in accordance with the terms of contract.
- (c) delays caused by the Contractor for which no extension of time will be granted under the contract.

ADD NEW CLAUSES:

VA-A 8.9 RATES INCLUSIVE OF CONTRACTOR'S OBLIGATIONS, LIABILITIES AND RESPONSIBILITIES

The rates and prices contained in the Preliminary and General Section of the Bills of Quantities shall, together with the remainder of the Bills of Quantities, be deemed inclusive of all the Contractor's obligations, liabilities and responsibilities whether or not they are expressly described therein.

VA-A -8.10 ADJUSTMENT TO PRELIMINARY AND GENERAL ITEMS

Adjustment to fixed and value related amounts will be made on the following basis only: -

- a) The first 15% variance to the contract value will not be subject to P & G adjustment.

- b) If the final contract value varies by more than 15% in relation to the original contract value, the preliminaries shall be adjusted in proportion to the amount by which the difference exceeds 15% of the original contract value.
- c) No other adjustments shall be made.

EPS 4 SPECIFICATION FOR FENCING

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

C3.2 *CONTRACTOR'S* WORKS INFORMATION

Not applicable
