

Document reference	Title	No of pages
	This cover page	1
C3.1	<i>Employer's Works Information</i>	13
C3.2	<i>Contractor's Works Information</i>	1
	Total number of pages	15

C3.1: EMPLOYER'S WORKS INFORMATION

Contents

Part 3: Scope of Work	1
C3.1: Employer's works Information	2
1 Description of the works	5
1.1 Executive overview	5
1.2 <i>Employer's</i> objectives and purpose of the <i>works</i>	5
1.3 Interpretation and terminology	5
2 Management and start up.	6
2.1 Management meetings	6
2.2 Documentation control	6
2.3 Health and safety risk management	6
2.4 Environmental constraints and management	7
2.5 Quality assurance requirements	7
2.6 Programming constraints	7
2.7 <i>Contractor's</i> management, supervision and key people	8
2.8 Invoicing and payment	8
2.9 Insurance provided by the <i>Employer</i>	8
2.10 Contract change management	9
2.11 Provision of bonds and guarantees	9
2.12 Records of Defined Cost, payments & assessments of compensation events to be kept by the <i>Contractor</i>	9
2.13 Training workshops and technology transfer	9
3 Engineering and the <i>Contractor's</i> design	9
3.1 <i>Employer's</i> design	9
3.2 Parts of the <i>works</i> which the <i>Contractor</i> is to design	9
3.3 Procedure for submission and acceptance of <i>Contractor's</i> design	9
3.4 Other requirements of the <i>Contractor's</i> design	9
3.5 Use of <i>Contractor's</i> design	9
3.6 Design of Equipment	9
3.7 Equipment required to be included in the <i>works</i>	9
3.8 As-built drawings, operating manuals and maintenance schedules	10
4 Procurement	10
4.1 People	10
4.1.1 Minimum requirements of people employed on the Site	10
4.1.2 BBBEE and Preferencing scheme	10
4.2 Subcontracting	11
4.2.1 Preferred subcontractors	11

4.2.2	Subcontract documentation, and assessment of subcontract tenders	11
4.2.3	Limitations on subcontracting	11
4.2.4	Attendance on subcontractors	11
4.3	Plant and Materials	11
4.3.1	Quality	11
4.3.2	Plant & Materials provided “free issue” by the <i>Employer</i>	11
4.3.3	<i>Contractor’s</i> procurement of Plant and Materials	11
4.3.4	Spares and consumables	11
4.4	Tests and inspections before delivery	11
4.5	Marking Plant and Materials outside the Working Areas.....	11
4.6	<i>Contractor’s</i> Equipment (including temporary works).....	12
5	Construction.....	12
5.1	Temporary works, Site services & construction constraints	12
5.1.1	<i>Employer’s</i> Site entry and security control, permits, and Site regulations.....	12
5.1.2	Restrictions to access on Site, roads, walkways and barricades	12
5.1.3	People restrictions on Site; hours of work, conduct and records.....	12
5.1.4	Health and safety facilities on Site	12
5.1.5	Environmental controls, fauna & flora, dealing with objects of historical interest	12
5.1.6	Title to materials from demolition and excavation.....	13
5.1.7	Cooperating with and obtaining acceptance of others.....	13
5.1.8	Publicity and progress photographs	13
5.1.9	<i>Contractor’s</i> Equipment	13
5.1.10	Equipment provided by the <i>Employer</i>	13
5.1.11	Site services and facilities	13
5.1.12	Facilities provided by the <i>Contractor</i>	13
5.1.13	Existing premises, inspection of adjoining properties and checking work of Others	14
5.1.14	Survey control and setting out of the <i>works</i>	14
5.1.15	Excavations and associated water control.....	14
5.1.16	Underground services, other existing services, cable and pipe trenches and covers	14
5.1.17	Control of noise, dust, water and waste.....	14
5.1.18	Sequences of construction or installation	14
5.1.19	Giving notice of work to be covered up.....	14
5.1.20	Hook ups to existing works	14
5.2	Completion, testing, commissioning and correction of Defects.....	14
5.2.1	Work to be done by the Completion Date	14
5.2.2	Use of the <i>works</i> before Completion has been certified	15
5.2.3	Materials facilities and samples for tests and inspections	15
5.2.4	Commissioning	15
5.2.5	Start-up procedures required to put the <i>works</i> into operation	15
5.2.6	Take over procedures	15

5.2.7	Access given by the Employer for correction of Defects	15
5.2.8	Performance tests after Completion	15
5.2.9	Training and technology transfer	15
5.2.10	Operational maintenance after Completion	15
6	Plant and Materials standards and workmanship	15
6.1	Investigation, survey and Site clearance	15
6.2	Building works.....	15
6.3	Civil engineering and structural works.....	16
6.4	Electrical & mechanical engineering works	16
6.5	Process control and IT works	16
7	List of drawings.....	16
7.1	Drawings issued by the <i>Employer</i>	16
C3.2	Contractor's Works Information.....	16

1 Description of the works

1.1 Executive overview

The scope of work is the replacement of the 275Kv Buszone at Mersey Substation. The work will be carried out during outages which have been planned over periods of time, one line at a time. The scope is detailed in the detail design document that will be provided. The refurbishment work will comprise of the following:

- Replacement of existing 275Kv Buszone with new Phase 6 Buszone, 6BZ-2410, 24 Bay scheme (3 panels)
- Installation of New cables as per the Preliminary cable block.
- On completion, removal of the 275Kv Buszone Panel and old Cables as per the preliminary cable block.

The contractor is also required to remove old buszone panel and cables in the control room at Mersey Substation for storage and scrapping by Eskom. A designated area will be provided and storage must be in accordance with Eskom requirements.

1.2 Employer's objectives and purpose of the works

The project was triggered as a result of high card failure rate at Mersey, the reports "Mersey Substation- 275kV Buszone Protection Replacement" and "Engineering Report Phase 3 Buszone"; Report Number PDRP_2013-184.

Mersey substation is situated in the East Grid near the town of Pietermaritzburg. The substation was commissioned back in 1970 as part of the introduction of the 400kV strengthening into the Durban area and Drakensberg Pump Storage integration into the KZN network. The substation was initially the 400/275kV transformation and the predominant source as the rest of the networks were at 275kV. The importance has continue although additional 400kV injection points into the 275kV network have been added at Venus and Hector. Mersey substation is an important link for the Durban customer load networks and a key node.

The Grid Code – Network Code section 5.1.5 makes it mandatory for all Transmission Busbars to be equipped with the appropriate busbar (Bus Zone) protection systems.

The 275kV Bus Zone at Mersey is a Siemens Phase 3 3BZ2400 commissioned in 1995 (over 26 years old), when there was refurbishment done at the substation.

- One of the original Phase 3 bus zones installed on the Transmission network.
- A micro-processor bus zone scheme, consisting of numerous electronic cards (SBK, BSZ1-3, EAK1-5). The SBK card is the main processor card and the entire decision making process happens in this card. The other cards are for the bays and zoning.

1.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
PM	Project Manager
QS	Quantity Surveyor
EA	Engineering Assistant
AFC	Approved for construction

HV	High voltage
kV	Kilo volt
ORHVS	Operating Regulations for High Voltage Systems
QC	Quality Control

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:
Pre-inaugural meeting.	1 week after contract is signed.	MS Teams	<i>PM</i> and company Director
Inaugural meeting	After safety and environmental files have been assessed and approved.	Mersey Substation or MS Teams	<i>PM, QS, Site Supervisor, EA, QC, PQA, Grid safety and environmental representatives and the Contractor.</i>
Toolbox talk and risk assessment	Daily before work begins.	Mersey Substation	<i>Contractor and Site Supervisor.</i>
Risk register and compensation events	As necessary.	Mersey Substation Site and MS Teams	<i>PM, Contractor and Site Supervisor.</i>
Overall contract progress and feedback	Bi-Weekly on site at 10:00.	Mersey Substation and MS Teams	<i>PM, QS, Contractor, Site Supervisor, and Grid representatives.</i>

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 correspondence is to be addressed to the Project Manager with a sequential numbering system.

2.3 Health and safety risk management

No work will commence on site before all the Access Permits and the relevant Health and Safety files are in place – according to the Eskom standard 32-726 and 32-136.

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 Standard 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 High Voltage Plant personnel before any work can commence on Site.

Copies of the Valid Eskom ORHVS Certificates, not expiring before the contractual end date, are to be submitted with all tender returnable.

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 is to be stored separately and all waste must be disposed off at a registered waste site and certificates confirming the classification and quantity are 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 32-726 and 32-136, as amended: 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, safety and environmental requirements.

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. Contact person: Reginald Shezi, Cellular phone +27 72 485 6055.

2.4 Environmental constraints and management

The Contractor shall control his activities and processes in accordance with Eskom's Environmental Requirements. 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 that has occurred on site as soon as possible or within 24 hours to the SS and PM clearly stating any impact to the environment.

The Contractor shall comply with legal and other environmental requirements.

The contractor is to comply with a site specific EMP and to inform the site supervisor and PM of any impact to the environment immediately after such an occurrence.

2.5 Quality assurance requirements

The Contractor shall control his activities and processes in accordance with Eskom's Quality Assurance Standard QM58: Supplier contractor quality requirements specification

The Notification period for Eskom attendance to Witness & Hold points is 48 hours. The Witness & Hold points must be clearly indicated in the work programme submitted at the commencement of the work or after every progress or review meeting. The Site Supervisor will be responsible for the verification and signature of the Quality Inspection and Test Plans (ITPs) which must be maintained by the Contractor and presented for signing promptly and regularly.

2.6 Programming constraints

A high level Construction Program indicating the various durations of the Scope of Work is to be submitted by the Contractor with the Tender documents. This must clearly show that the contractor can execute this work by the end date.

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. The contractor must show how he plans to allocate resources to mitigate for risk of delays due to rain. **Note: Only MS Project format will be accepted**

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.

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

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
Transmission Finance
PO Box 2252
Westville, 3630

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)

Add procedures for invoice submission and payment: Payment certificate to be signed before invoicing. Invoice will be e mailed to Eskom Finance Shared services.

2.9 Insurance provided by the Employer

As stated in "Format A" available on <http://www.eskom.co.za/c/101/insurance-policies-procedures/> (See Annexure B for basic guidance).

2.10 Contract change management

Where standard forms are available they should be used.

2.11 Provision of bonds and guarantees

Not applicable

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

Not Applicable

3 Engineering and the *Contractor's* design

All construction work will be done in accordance with Eskom's policies, standards and design or drawings provided. No deviation will be accepted unless requested through the PM and approval is received in writing.

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 used must be as per the drawing register.

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, operating manuals and maintenance schedules within 14 days after Completion.

4 Procurement

4.1 People

4.1.1 Minimum requirements of people employed on the Site

All people employed on site by the Contractor shall be vetted through the Grid Security Manager's office according to the Grid code before accessing site.

All workers will be subject to ad hoc breathalyser tests at any time when on duty.

All workers must wear seat belts at all times when travelling in their vehicles while on Eskom business.

4.1.2 BBBEE and Preferencing scheme

In terms of the Preferential Procurement Policy Framework Act (PPPFA) THE 80/20 scoring system will be applicable for this contract. B-BBEE and CIDB level requirements are stated in the Invitation to Tender letter. Failure to submit B-BBEE certificates will result in the tenderer not qualifying for preferential points.

4.1.3 Skills Development Localisation and Industrialization (SDL&I)

The below SDL&I is applicable to this contract and the contractor 's obligation are:

SITE TABLE 1: SUPPLIER DEVELOPMENT AND LOCALISATION COMPLIANCE MATRIX FOR SUPPLIERS AND CONTRACTOR					
Criteria	Weight (%)	Total Target (%)	Proposed Target (%)	Total Weighted Score	Overall
Local Content to South Africa	75%	100%	100.00%	25.00%	
Skills development	25%			25.00%	
Total SD &L score				100.00	

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
Cable Joints/Installers	40,00%	1	0	1	0	0,00%
Trainee Foreman	60,00%	1		0		
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

A retention of 2.5.% per invoice will apply upon verifying SDL&I commitments after the first quarter of the contract and will be released upon submission of full compliance-.proof.

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 subcontracts are recommended for all subcontract documentations

4.2.3 Limitations on subcontracting

The contractor is to subcontract not more than 25% of the work, unless permission has been granted by the Employer.

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. (QM58: Quality Requirements for Procurement of Assets, Goods & 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 steel work the contractor must ensure that the quality is in line with Eskom's requirements. Any non-conformance must be corrected before the handing over.

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

Not applicable

4.3.3 *Contractor's* procurement of Plant and Materials

The following procedures will be required from the Contractor

- Procurement procedure
- List of suppliers
- Quality plan
- Receipt storage and presentation of material on site

Security personnel are to be advised at least 24hours before any delivering of material take place on site. Failure to do so may result in delays that will to the contractors account.

4.3.4 Spares and consumables

Not Applicable

4.4 Tests and inspections before delivery

As per Quality Advisor's requirements, i.e. All structural steelwork is to be inspected by the Contractor and verified by the quality representative of the Employer before being delivered to site and should have a certificate from the Galvanizer stating the coating thickness. For verification purposed, the contractor must notify the Project Manager two weeks before delivery of structural steelwork.

4.5 Marking Plant and Materials outside the Working Areas

Not Applicable

4.6 Contractor's Equipment (including temporary works).

To be provided by the contractor

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.

The Contractor is to supply Eskom with Police clearance for all the employees on site before Work commences. All clearances must be sent to John Sibiya **078 886 0721** prior to accessing the site.

The contractor is to provide security at the contractor's camp and on the alternate towers at the site of construction.

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

The Contractor is to adhere to the procedures as prescribed in Access to Farms TPC41-340 and the Fencing Act 31 of 1963.

Site access shall be to liaise with Eskom PM

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

The Contractor is to adhere to the procedures as prescribed in Access to Farms TPC41-340 and the Fencing Act 31 of 1963.

The Contractor is to supply Eskom with Police clearance for all the employees on site before Work commences.

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 in accordance 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.

The Contractor is to adhere to the procedures as prescribed in Access to Farms TPC41-340 and the Fencing Act 31 of 1963.

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.

5.1.6 Title to materials from demolition and excavation

The contractor is also required to remove old buszone panel and cables in the control room at Mersey Substation for storage and scrapping by Eskom. A designated area will be provided and storage must be in accordance with Eskom requirements.

5.1.7 Cooperating with and obtaining acceptance of others

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

The Contractor is to adhere to the procedures as prescribed in Access to Farms TPC41-340 and the Fencing Act 31 of 1963.

5.1.8 Publicity and progress photographs

To be executed as per Quality Advisor's requirements.

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 and electricity necessary for construction purposes must be provided for by the Contractor. No water and electricity will be available. Should there be any available 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. It is the Contractor's responsibility to test any water before using it for construction purposes. The Contractor is required to submit a Test Certificate for the water used on site.

The Contractor shall provide everything else necessary for providing the works.

5.1.12 Facilities provided by the *Contractor*

The Contractor supplies specific plant and materials required for providing the work.

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 in accordance to Eskom's and the landowner'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 in accordance to Eskom's satisfaction. No work on site will be allowed to commence before the toilet facilities are available on site.

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.

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

The Work is to be carried out on the Line servitude which is adjacent to properties owned by farmers. The contractor is to take note of this and ensure that all gates that are opened are closed and to adhere to the rules of the owners of the adjacent properties.

The Contractor is to adhere to the procedures as prescribed in Access to Farms TPC41-340 and the Fencing Act 31 of 1963.

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

Not Applicable

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

Not Applicable

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

Contractor is to provide a sequence with timelines and project plan within 1 week after the contract is awarded.

5.1.19 Giving notice of work to be covered up

Not Applicable

5.1.20 Hook ups to existing works

Hooks up to existing work must be done as per Safety Requirement, "Working at Heights", 32 – 418.

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
	Not Applicable	

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

Clause 35.2 in ECC3 and 35.3 in ECC2 provide that the Employer may use any part of the works before Completion has been certified but if he does so he takes over the part of the works except if the use is for a reason stated in the Works Information. This will be managed by the Site Supervisor to ensure harmony and coordination of all on-going works. The Employee will take possession of the line on a daily basis and return to service. The Contractor is to take note that the work will be done utilising a daily outage.

5.2.3 Materials facilities and samples for tests and inspections

Not Applicable

5.2.4 Commissioning

Commissioning is as per Eskom requirements.

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

Submission and on approval of Suppliers Safety File and Project Plan including the Inspection Test Plan.

5.2.6 Take over procedures

The Contractor is to arrange an inspection at least 2 weeks before completion to inspect and identify any outstanding or incorrect items. The take-over procedure will be in adherence to Eskom Policies and Requirements.

5.2.7 Access given by the Employer for correction of Defects

The Contractor is to adhere to the procedures as prescribed in Access to Farms TPC41-340 and the Fencing Act 31 of 1963.

5.2.8 Performance tests after Completion

Visual inspections are to be carried out by Eskom representative as per Inspection Test Plan.

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

6.1 Investigation, survey and Site clearance

The Contractor is to notify the Project Manager in writing of any additional corroded members, nuts, bolts, washers and associated hardware which have been identified and not included in the original Scope of Work. This must be done within 1 week of identification. A decision will be taken by the Project Manager finalising the way forward in writing within 1 week of notification from the Contractor.

6.2 Building works

Not Applicable

6.3 Civil engineering and structural works

6.4 Electrical & mechanical engineering works

a) Specifications

Title	Date or revision	Tick if publicly available
Employer's Health and Safety Requirements- 32 – 726 and 32 - 727	Latest Rev	✓
SANS 10280 Overhead power lines for conditions prevailing in South Africa	Latest Rev	✓
The design and construction of overhead power lines – 240 -	4	✓
Eskom Standard Specifications		
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.	✓
QM – 58 Eskom Suppliers Quality Requirements Specification	Latest Rev.	✓
Eskom Particular Specifications		
Not Applicable		

6.5 Process control and IT works

Not Applicable

7 List of drawings

7.1 Drawings issued by the *Employer*

The Mersey Buszone substation drawings Eskom copyrighted. The contractor is to acquire drawings from the copyright owner.

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.