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C3.1: EMPLOYER'S WORKS INFORMATION

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1 Description of the works

1.1 Executive overview

The Transmission Project Delivery department is responsible to deliver and manage projects that are key to the shareholder compact. Key to these is the construction of new transmission lines and substations, in support of Eskom and Transmission's service delivery goals. The need for the construction of Medupi Witkop 400kV Transmission Lines (Section A, B, C and D) is as a result of an increase in demand for reliable electricity supply in the Grid.

A project was initiated and is currently in execution for the Medupi Power Station Integration into the Transmission Grid. System Operations did the required stabilities studies and determined that additional endeavours and infrastructure will be required in order to retain transient stability when faults are experienced close to Medupi and Matimba.

Medupi Witkop Section D:

Construction of 45km of the Medupi Witkop 400kV Transmission Line from tower 432 to tower 536, as per the relevant profiles and line route map including the closing span between tower 431- tower 432 and tower 536– Gantry. Construction will be done in accordance to detailed design report and line specification. The work to be covered by this project will include but not limited to the following: foundations installation, tower steel supply, assembly and tower erection, Line stringing with phase conductor, earth wire and OPGW, regulating and clamping from tower 432 to tower 536, including miscellaneous items, rehabilitation and Line handover. The contractor to string section between tower 431 and tower 432, needs to temporarily backstay the structure before stringing.

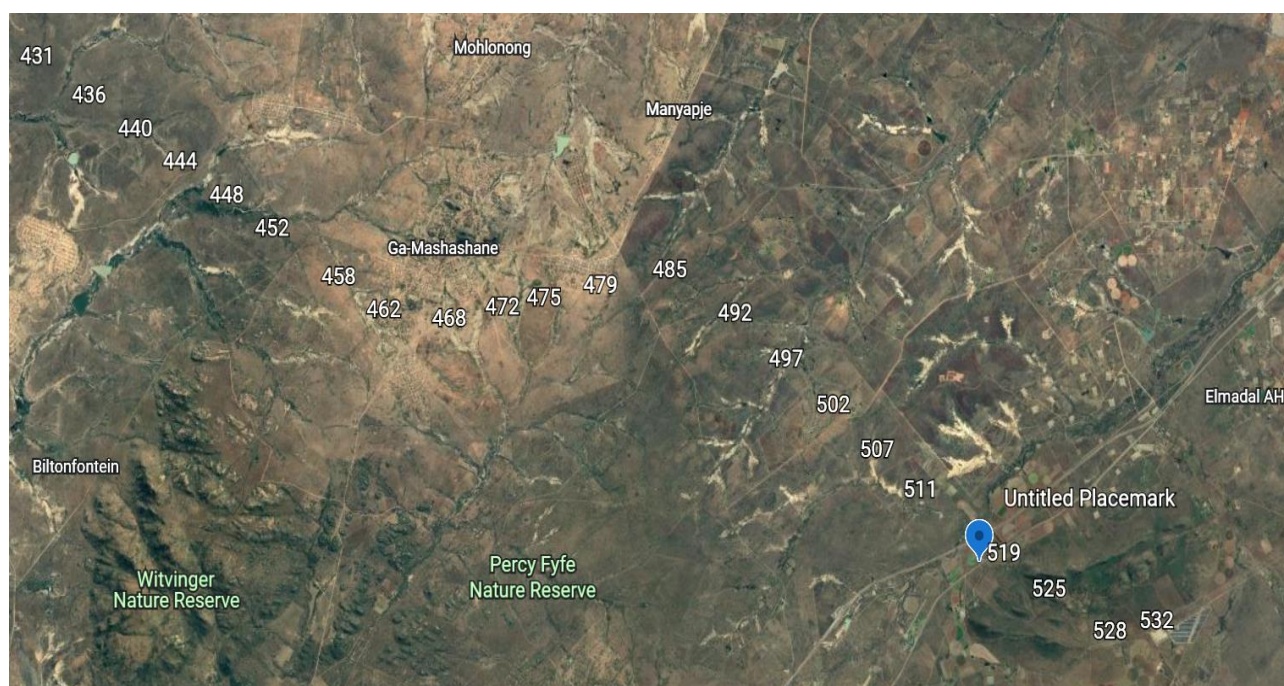


Fig 1: Section D Tower Locations

The project contains an underpass:

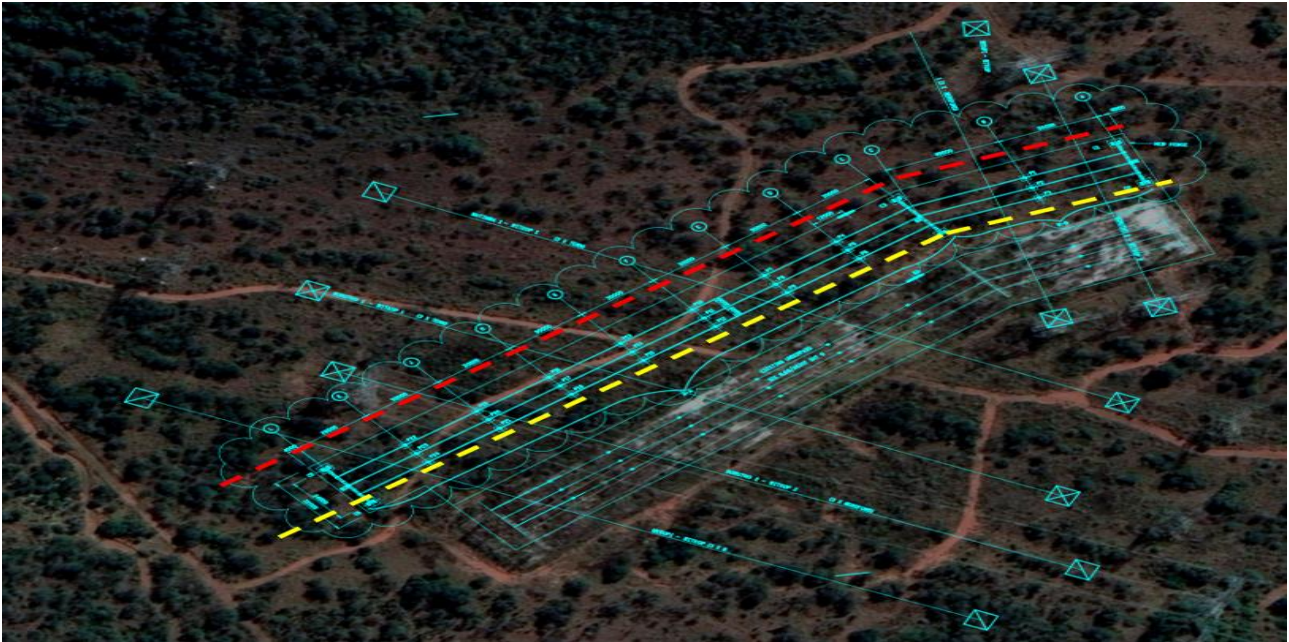


Fig 2: Underpass 3

Underpass 3 centre co-ordinates are latitude 24°02'24.17"S and longitude 29°18'47.95"E

The underpass shall be constructed using the 541 steelpole structures and 3xBersfort conductor. The Horse earthwire shall be buried in conductive concrete for the length of the underpass from tower additional 1 to tower 527 (approximate length is 380m). The OPGW shall be terminated at tower additional 1 and duct cable will be buried from tower additional 1 to tower 527 where the joint box to convert back to OPGW will be situated. The underpass crosses under 3 400kV lines (Matimba-Witkop 1, Borutho-Witkop 1 and Borutho-Witkop 2) running to the east and is situated near the existing gantry underpasses. The terrain throughout the underpass must be graded down by 1m and levelled off.

Underpass 3 will be constructed parallel, adjacent the existing underpass. The existing underpass was constructed without any terrace design; there is no import material and the ground slope was not considered in the construction.

1. Terrace Design:
 - a. Site clearance involves clearing and grubbing.
 - b. Detection of underground services should be ensued as there could be OPGW cable and copper used for earthing underground.
 - c. The terrace will be designed such that free flow of water will be allowed. The topsoil will be cut to be spoilt and imported G8 material will be imported to be backfilled.
 - d. Weed killer must be applied to the backfill layers.
 - e. A 100 mm yardstone will be placed on the compacted G8 material.
2. Drainage design
 - a. A cut off drain must constructed on site to prevent water from flowing in the underpass. (Dotted Red line)
 - b. A subsoil drain will be installed in between the underpasses to prevent the overflow of storm-water from one underpass to another. (Dotted Yellow line)
3. Geotechnical Tests

The underpass consists of post insulator foundations and gantry foundations

 - a. DPSH and DCP tests to be done to verify the bearing capacity of the site.
 - b. Atterberg limits, CBR, Density Tests and Foundation Indicator'
 - c. The contractor must produce material certificates for the imported material.

A single double circuit tower is located between towers 532 and 533, the left side of the structure will need to be strung on this project with 3xTern (450mm). The horse earthwire from tower 532 will need to be buried to tower 533 and the OPGW transferred to duct cable (approximately 700m).

The proposed *works* on the entire project *include but are not limited to the following*:

- Bush clearing for access and construction purposes.
- Repairing existing access, creating, and maintaining access for construction purposes.
- Survey and pegging of towers.
- Design and installation of concrete tower foundations in various soil/rock conditions.
- Manufacture, transport, Assembly and Erection of galvanised steel 518, 529, and 517 series transmission line towers and masts.
- Manufacture, transport, Assembly and Erection of Substation P.I. structures used for the underpasses.
- Stringing/regulation of phase conductors and installation of associated hardware.
- Stringing/regulation earth conductors and installation of associated hardware.
- Stringing/regulation of OPGW and installation of associated hardware.
- Installation of line labels, bird-guards, bird-diverters and aerial warning devices.
- Rehabilitation of groundwork damage and implementation of environmental requirements.
- Labelling and Re-numbering of the full lengths of a typical project.
- Restranging of OPGW on the double circuit section of line just after the third underpass and 2 x horse earthwires buried in conductive concrete (approximately 1800m)
- Dismantling, loading, transporting, and offloading the unused structures at a location to be advised by the Employer.
- Line swaps on the existing Borutho-Witkop 2 line which needs to be undone, orientations on towers 523 and 536 must be done for the final line arrangement. LES to be contacted for further information.

1.2 Employer's objectives and purpose of the works

Construction of 45km of the Medupi Witkop 400kV Transmission Line section D from tower 432 to tower 536, as per the relevant profiles and line route map including the closing span between tower 431- tower 432 and tower 536– Gantry. Construction will be done in accordance to detailed design report and line specification. The work to be covered by this project will include but not limited to the following: foundations installation, tower steel supply, assembly and tower erection, Line stringing with phase conductor, earth wire and OPGW, regulating and clamping from tower 432 to tower 536, including miscellaneous items, rehabilitation and Line handover. The contractor to string section between tower 431 and tower 432, needs to temporarily backstay the structure before stringing.

2 Management and start up.

2.1 Management meetings

In addition to formal and informal communications between the Project Manager and the Contractor, frequent formal routine meetings are necessary throughout the duration of the Contractor's performance in order to assure continued communication and record such interfaces for the future.

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-Construction Kick-off Meeting (The first activity to take place before the Work begins is the preconstruction kick-off meeting between Employer/Project Manager and the Contractor). The meeting introduces all personnel involved in the Work from both organisations, addresses details necessary to commence the work, establishes and records the ground rules or conditions under which the work will take place, and sets a cooperative professional tone for the future working relationship.	The pre-construction kick-off meeting takes place prior to the Contractor mobilising to site.	TBA	All parties involved in the project.
Overall contract regular progress review Meetings and Feedback , these meetings provide a forum for review of the Contractor's operations, assessment of progress and schedule, discussion and resolution of problems facing the Contractor and the Project Manager, and coordination of the activities of all parties concerned. In general, these meetings require a minimum of participation to achieve the maximum positive results.	Monthly on the <u>last Friday of the month</u> at <u>09:30</u>	Contractor site camp	<i>Employer, Contractor, and stakeholders as required</i>
Risk register and compensation events	Weekly on <u>Monday</u>	Eskom offices/ Microsoft teams	<i>Employer, Contractor, Supervisor, and stakeholders as required</i>
Stakeholder & Stability meeting	Bi-monthly	TBA	<i>Employer, Contractor, Supervisor, and stakeholders as required</i>
H&S Meeting	Monthly	TBA	<i>Employer's Site Representatives and H&S representative,</i>

			<i>Contractor's Site Management and H&S (as per OHS Act Section 19 Health and Safety Committee)</i>
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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

Summary of the documentation required from the contractor before and during construction which includes the following:

Document(s)	Before	During
Programme	x	x
Resource Schedule	x	x
Health & Safety Plan	x	x
Quality Assurance Plan	x	x
Environmental Management Plan	x	x
Security Management Plan	x	x
Forecast Rate of Payment/ Invoicing	x	x
Drawing Register	x	x
Progress Schedule		x
Application for Payment		x
Stringing Records		x
OPGW Joint Tests		x
Tower Resistance Readings		x
Weather Data		x
Monthly Reports (Health & Safety, Environmental and Quality). Separate as per the functional area		x
Inventory list of all materials	x	x
Supplier review evaluation		x
Safe Work Procedure (per activity)	x	x
Weather Data		x

2.3 Health and safety risk management

The attached Eskom Transmission Standard – Occupational Health and Safety requirements to be met by Eskom transmission employees, contractors and sub-contractors during maintenance and construction work – TST41-61, together with the Health and Safety (H&S) Specification FORM- TPDMAN-SP-84 shall apply. The requirements of this Standard and Specification are contractual and are applicable, Eskom shall evaluate Principal Contractor performance on an ongoing basis against the Eskom requirements and statutory/legislative requirements.

Documentation required in this section shall be submitted under separate cover marked: "Health and Safety". Copies of OHSAS 45001 certificates (if registered) shall also be included in this section. The Cost Breakdown Structure for Health and Safety Expenditure below should be used to determine the amount for item 1.1.5 of the Preliminary and General Bill of Quantities: the costing for H&S must be itemised based on

the overall scope of the project e.g., resources, provision of PPE, occupational hygiene, occupational health, First Aider level 3 (Parademedic), etc.

ITEM No.	ESKOM TRANSMISSION PROJECTS DELIVERY
	H&S BOQ FOR CONSTRUCTION OF POWERLINES
	DESCRIPTION
1	Supply of all items of Personal Protective Clothing/Equipment & ensure use thereof for full compliance
1.1	Steel toe capped safety boots (where applicable add safety boots for specific activity such as working in a close proximity of live wire/conductor)
1.2	Overall - 2 piece suit with luminous straps
1.3	Gloves (where applicable add gloves for specific specialized activity such as working in a close proximity of live wire/conductor)
1.4	Hard hats with double chin straps.
1.5	Climber's Hard hats
1.6	Ear protection (earplugs, earmuffs etc.)
1.7	Eye protection appropriate to the task performed
1.8	Dust Mask (where appropriate for a specific activity)
1.9	Induction tags/cards.
1.10	Luminous high visibility safety vests (Applicable to office-based personnel only)
1.11	Sunbrim/ Soft hat
1.12	Balaclava (not office-based staff)
1.13	Hood of the same, or higher, arc rating as that for protective clothing where applicable
1.14	First Aid Kits
2	Supply and provision of Equipment for working at Heights & ensure use thereof for full compliance to OHS ACT and Eskom's SHE spec
2.1	Fall Arrest System (FAS) - Double lanyard harness
2.2	Portable Ladders
2.3	Rescue Kit
3	Compliance
3.1	Provision of all signage in terms of latest legislation/SANS 1186 code
	Other - (<i>Contractor</i> to Specify)
4	Human Resources
4.1	Safety Officer (SACPCMP Registered) FULL TIME ON SITE
4.2	First Aider per team/area
4.3	Fire Fighter/Evacuation warden per team/area
5	Occupational Hygiene
5.1	Health Risk Assessment to include all legislative requirements example Ergonomics Regulations, Major Hazard Installation Regulations etc.
5.2	Occupational Hygiene Surveys
5,2.1	Dust survey (crystalline silica analysis and reporting to The Department of Employment and Labour)
5,2.2	Thermal stress surveys (heat and cold)
5,2.3	Illumination survey (for work at night)
5,2.4	Indoor air quality for office environment
5,2.5	Noise survey for all noise generating equipment
6	Occupational Health
6.1	Pre-employment medical screening

6.2	Periodic Medical Screening (follow-up on identified medical condition, based on the project duration)
6.3	Exit Medical Screening
7	Other
7.1	General Health and Safety obligations not mentioned above (fixed charge)
7.2	Hazard Identifications and Risk Assessments training
7.3	Establishment of Health and Safety Plan specific to this project
7.4	Operator's training (required for all plants and equipment specific to the project)
7.5	Eskom ORHVS certificates
7.6	Lifelines and other safety ropes

The Contractor shall comply with the site specific H&S Specifications and client identified health and safety requirements. TPD in no way assumes the Contractor's legal responsibilities, the Contractor is and remains accountable for the adequate execution of his H&S requirements, and that of appointed sub-contractors and suppliers.

The Principal Contractor shall appoint Construction Manager and Officer in accordance with the requirements of CR8(1) and CR 8 (5) respectively. The Construction Manager and Officer shall be in possession of certificates of registration with the SACPCMP (SACPCMP Section 18 Categories of Registration) downloaded from www.SACPCMP.org.za. NB. Persons with foreign qualifications and registrations convert these to equivalent local registrations in that particular level or category (this shall be in accordance with SETA requirements). The employer shall be at liberty to object to and require the contractor to remove from the works any person who in the Project Manager's opinion, misconducts himself or is incompetent in the proper performance of his duties.

The Project and Construction Management Professions Act No. 48 of 2000 directs that a person assuming responsibility for works identified for any category of registered persons should be registered as a professional in the appropriate category with the SACPCMP in order to comply with legal and statutory requirements in South Africa. In related gazette notices, such work, services and deliverables are identified for the disciplines of Construction Project Management, Construction Management, Construction Mentorship and Construction Health and Safety. **The client reserves the rights to demand such registration as per category as stipulated by the Act.**

Requirements:

- Proof of registration shall be submitted as part of procurement returnables.
- Proof of registration shall be available on site at all times.
- Where a change of personnel is made, the contractor shall inform the client in time and the proof of registration shall be submitted for verification.
- Should none of the identified personnel as per the requirements be registered, the contractor shall not be allowed to commence with any activities, this includes national contracts, where applicable.
- The client reserves the right to request the contractor to source registered personnel where a need arises.

Note: being in the process of registration shall be deemed to be not complying with these requirements. No person who is not in possession of such registration shall be appointed to the above positions. Consideration shall be made to those who are registered as Candidate in any of the categories mentioned above, provided that the individual candidates submit an agreement (appointment) between the candidate and the mentor. Both the candidate and the mentor shall submit their certificates downloaded from SACPCMP website (www.sacpcmp.org.za) to the client for considerations.

No claim shall be accepted as a result of any costs or delays being incurred due to the Principal Contractor or his contractors not complying with legislation, applicable Eskom Procedures and Standards.

Work stoppage/Stand down due to Eskom request or/and authorities such as Department of Employment and Labour (Department of Environmental Affairs (DEA) etc., shall not be compensated due to non-compliance with legislative/statutory requirements.

NOTE: Work stoppages that are initiated due to related incidents shall not warrant any financial compensation claim lodged against Eskom.

2.4 Environmental constraints and management

The *Contractor* shall comply with the environmental criteria and constraints by having an environmental management system in place that will ensure that the requirements of the environmental management programme are effectively implemented and managed. Adherence will be in-line with the following standards and procedures Mokopane integration project (second Medupi- Witkop 400kv power line) dea ref: (12/12/20/1187, 12/12/20/1187AM1, 12/12/20/1187AM2), TDPMAN-ST-37, 32-247, 32-245, 32-1163, ENV17-R249 and not limited to TDPMAN-PN-53.

Campsite establishment are to be managed in accordance with specification TPDMAN-CS-102 (Site Readiness Checksheet). The layout should be that it facilitates a circular traffic route that eliminates the need to reverse when loading and off-loading.

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, the EA, and Project Specific Environmental Management Programme. Where work is done on the Employer's sites, the goods, services or works supplied will also conform to the Eskom SHEQ Policy.

The *Contractor* is reminded that adherence to 32-247 "Vegetation and Maintenance within Eskom land, servitudes and Right of Way", TRMSCAAC 6– "Transmission Line Towers and Line Construction" is mandatory. Deviations from these policies, standards and specifications will be regarded as a noncompliance.

THE CONTRACTOR'S ENVIRONMENTAL OFFICER (EO)

Each Contractor affected by the CEMPr should appoint a contractor Environmental Officer, whose appointment will be approved in writing by the Project Manager (which approval may at any time be withdrawn), who is responsible for the on-site implementation of the CEMPr (or relevant sections of the CEMPr). The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the Environmental Control Officer and the public.

The EO shall ensure that all Sub-contractors working under the Contractor abide by the requirements of the CEMPr. The Contractor is answerable to the Project Manager for all environmental issues associated with the project. Contractor performance will, amongst others, be assessed on health, safety and environmental management criteria. Their primary role is to coordinate the environmental management activities of the Contractor on site. The EO shall be on the works at all times, The employer shall be at liberty to object to and require the contractor to remove from the works any person who in the Project Manager's opinion, misconducts himself or is incompetent in the proper performance of his duties.

The EO's sole responsibility are as stipulated by the CONSTRUCTION ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE MOKOPANE INTEGRATION PROJECT- clause "1.7.5.1", environmental legislation as well as relevant procedures and monitor and adjust environmental quality of work performed on the site. The EO is also to assist the Environmental Control Officer (ECO) in their duties. The EO is to carry out or relay any requirements that may be deemed necessary by the ECO, to ensure that such activities are undertaken and to report back to the ECO accordingly.

Minimum requirements for appointment as EO are:

- Tertiary qualification in a natural science or appropriate field.
- 2 years' work-related experience.
- The EO portfolio will not be shared by any other portfolio or responsibility.

ENVIRONMENTAL CONTROL OFFICER (ECO)

The Environmental Control Officer (ECO) will be appointed by Eskom Holdings SOC Limited to ensure the day to day implementation of the CEMPr and suitable environmental management practices on site for the duration of the construction phase of the project.

The ECO's duties, inter alia, must be to facilitate compliance with the CEMPr on an ongoing basis during the construction phase through monitoring and proactive and open communication channels with the project/site management.

Camps Access

The Camp Site location identified by the Contractor must be approved by the ECO. No occupation of the camp site will commence before all requirements as per the CEMPr e.g. boundary fence, portable water, ablution and sewage facilities and waste management are in place and approved by the ECO. Under no circumstances may solid waste be buried or burned on site unless a suitable incinerator is available.

Servitude Access

No work will commence on any property before the Access Plan is negotiated / accepted by the landowner, EO and ECO. No work will commence on any property before gates at all access points are installed.

Reporting

It is required that the EO make all documents, weekly reports; monthly reports; complaints register; environmental incident register (spills, impacts, legal transgressions, etc.) as well as corrective and preventive actions taken available to the ECO upon request.

Environmental Awareness Training

The contractor and sub-contractor's staff are to receive Environmental Awareness Training before commencement of the project. The training will be presented by the EO with the assistance of the ECO. An attendance register is to be maintained. Any new staff must receive the Environmental Awareness Training.

- The contractor shall ensure that adequate environmental awareness training of all the personnel working on the site familiarise with the contents of the environmental site control measures which are outlined in this document.
- The contractor shall also make this training and awareness programme be conveyed to the personnel on site to the satisfaction of the Environmental Control Officer (ECO), either in written format or verbal, in the employees' language of choice.
- Records of all, environmental training sessions, including names, dates and the information presented should be kept by the contractor.

The environmental training should, as a minimum, include the following:

- The importance of conformance with all environmental policies;
- The environmental impacts, actual or potential, of their work activities;
- The environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of Eskom's environmental management systems, including emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures; and The mitigation measures required to be implemented when carrying out their work activities.
- In the case of permanent staff, new staff (including contract labour) the contractor shall inform the Project Manager and ECO when and how he/she intends concluding his environmental training obligations, the contractor shall provide evidence that such induction courses have been presented.

Fires

No open fires will be permitted on site under any circumstances. The Contractor shall have fire-fighting equipment available on all vehicles work in on site.

Bush Clearing

The Contractor will be required to carry out the bush clearing work in three phases:

Phase 1

During the construction of the works, the clearing of a the strip must be cleared in accordance to 32-247 along the centreline of the servitude to allow access for all construction vehicles to tower sites, and to provide unobstructed clearances to pilot wires and conductors during stringing operations.

Phase 2

Clearing of all trees and bush along the servitude as specified. To be completed two months prior to the completion date.

Phase 3

Clearing of all trees and bush along the servitude as specified. To be completed at the expiry date of the defects period.

Rehabilitation of Damage caused during Construction

The Contractor must take cognisance of the EA, CEMPr and TRMSCAAC 6 in the rehabilitation of damage caused during construction. The Contractor is to start with rehabilitation of works and any damage caused to the environment after the stringing and regulation of twenty (20) towers to the satisfaction of the Supervisor and landowner.

Existing farm roads and tracks are to be maintained throughout the contract and left in at least as good condition as was found before construction commenced. The Contractor and Supervisor are to agree, using photographic evidence if necessary, as to the state of such roads and tracks before construction commences. Existing berms are to be repaired during and after construction in accordance with TRMSCAAC 6.

New access roads are to be closed on completion unless otherwise instructed. The Supervisor may instruct the Contractor to install water erosion control berms and other methods upon closure. Tower sites are to be rehabilitated to the satisfaction of the landowner and Supervisor. In certain circumstances re-vegetation, mulching and erosion control measures etc. may be called for. The remedial works are to be "signed-off" (Final Release) by the affected landowner.

Site services and procedures

The Contractor shall negotiate with landowners for the erection of any construction camp(s) and accommodation for his personnel and ensuring compliance with all by-laws and requirements of the relevant authorities. All necessary services - water, electricity, sewerage, ablution facilities, telephones, Wi-Fi etc. are to be provided by the Contractor to suit his needs.

All evidence of construction camp(s), batching plants, etc. are to be removed upon completion, and such areas rehabilitated to the satisfaction of the landowner and the Supervisor. The Contractor shall provide sanitary amenities, first aid and firefighting facilities as required by the Occupational Health and Safety Act.

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

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

A site diary is to be kept by the *Contractor* in which all events are recorded. Records of events that could give rise to Compensation Events are to be always kept up to date for inspection by the Supervisor and/or Project Manager.

Restrictions applicable to the *Contractor*

Vehicular access to certain areas and tower positions may be restricted, impossible or prohibited. The *Contractor* will, in these areas, be required to use alternative methods of construction. Entry to private property is to be planned and arranged with landowner well in advance as access could be delayed due to hunting, harvesting or other constraints (There will be no claim payable due to access constraints within a 15kms radius, provided that contractor can work on other parts of the line). All personnel are to be made fully aware of the proximity of adjacent live lines and the presence of induction.

The *Contractor's* senior representative on site is to be aware of and be duly authorised by Eskom in terms of Eskom's High Voltage Regulations. This will entail having attended Eskom's HV Regulations (ORHVS) course and being so authorised. In addition, the *Contractor* is to appoint "Responsible Persons" as required by the Occupational Health and Safety Act.

Title to site materials

The conditions of Core Clause 7 will apply.

2.5 Quality assurance requirements

The attached Supplier Quality Management: Specification Unique Identifier: 240-105658000 and Quality Requirements for ISO 9001 Standard shall apply. Eskom's position is to partner with suppliers who fully demonstrate commitment to the development, implementation, and maintenance of a quality management system (QMS) that conforms to the requirements of ISO 9001 standard.

Eskom reserves the right to request and perform necessary assessments at sub-supplier facilities.

Documentation required in this section shall be submitted under separate cover marked: "Quality Assurance". Copies of ISO 9001:2000 certificates (if registered) shall also be included in this section. The suppliers must complete, sign and return Form A with the other returnable as listed in the List of Tender Returnable document (240-105658000).

Tenderer's submissions:

- An uncontrolled copy of the supplier's quality manual.
- An example of a typical quality product/process inspection and test plan.
- Copies of ISO 9001:2000 certificates (if registered) shall also be included in this section.

NOTE: In addition to the above documentation the supplier is to submit the following information/documentation for evaluation purposes and may include any additional information as proposed by the supplier for the Project Scope of Works.

1.	Interface with Quality System	State if no system in place, what SANS and international standards are complied with.
2.	Communication	As per contract – project organogram and responsibility matrix.
3.	Suppliers	How monitoring will be carried out.
4.	Quality Planning	Submission and approval of product inspection and test plans.
5.	Specifications/Drawings	As per contract requirements and "off the shelf" items.
6.	Special Processes	What special controls are required for special

		processes – foundations, concrete, welding, etc.
7.	Quality Records	This should state your method of control of records – your procedure.
8.	Management Representative	Name your management representative and quality site/manufacturing representatives.
9.	Document Submissions	What docs will you submit on completion of contract – Contract Quality Plan, ITP's, Test Certificates, Release Notes, Inspection Notification Forms where applicable
10.	Post Award Quality Programme	As per contract e.g. Statutory Requirements, Inspection and Test Plans as per supplier's system.

The cost breakdown structure for quality assurance below should be used to determine the amount for Item-1.1.4 of the Preliminary and General Bill of Quantities.

Item
General Quality Management obligations not mentioned below
Test equipment for measurement and control activities for this project
Contract Quality Plan specific to this project
Special processes Method Statements/Work Instructions as per the applicable specifications (per statement)
Method Statements/Work Instructions specific to this project as per all technical specifications applicable to the works (per statement)
Internal audits on manufacturing
Internal audits on site
Auditing, monitoring and control of sub-contractors and suppliers
Compilation, completion and submission of Quality and Technical Records (dossier) as defined
QA/QC Representative overall responsible for this project
QA/QC Representatives responsible for site
Non-destructive examination or testing

The supplier shall submit the following documents within 30 days or as per stated timeline after the contract date, prior to the commencement of work, for acceptance by Eskom:

- The supplier shall complete a QCP before contract award. This shall be reviewed and signed off by Eskom within 30 days or as per stated timeline after contract award.
- The supplier shall complete a quality control plan and ITP(s) for review and acceptance by Eskom prior to the commencement of any work, inclusive of subcontracted work, within 30 days or as per stated timeline after contract award.

Note: 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.

SHEQ RELATED NON-PERFORMANCE

Termination due to Non-Compliance

ESKOM reserves the right to terminate the contract in the event that the contractor is found to be consistently non-compliant to any SHEQ related issue.

Penalty for Health and Safety statistics

Should the LTIR at any stage during the contract exceed the ESKOM target of 0,3 a penalty of R 100, 000.00 will be imposed by the client. This penalty will be refunded in the event that the LTIR drops below 0,3 at contract completion.

Fines for Health and Safety violations

The following fines will apply for Health and Safety violations and are non – refundable:

- Lifesaving rule violation (1st Violation): R12, 000.00 per event, payable by the Contractor.
- Lifesaving rule violation (2nd Violation): Removal of repeat offender from site and R 12,000.00 payable by the Contractor.
- Risk assessment and / or method statement not in place or available at activity: R 12,000.00 per even.
- Non-compliance to Legislation: R 20,000.00 per event.

Fines for Environmental violations

For fines relating to Environmental violations please refer to the document titled “Environmental Requirements for Contractors and/or Suppliers (TPDMAN-ST-37, Rev 2)”, Appendix F.

Fines for Quality related issues

NCR's not closed out satisfactorily within 30 days: R 12,000.00 per event.

Fines for Sub – Contractor management

Sub-contractors are to be managed in accordance with the requirements of Form 74. Failure to comply will result in a fine of R50, 000.00 per non-compliance.

All the above fines and penalties will be implemented by the Project Manager at his discretion.

2.6 Programming constraints

The tenders will be evaluated with due consideration to the resources (both personnel and equipment) committed to the project as indicated in the tender programme; this will also inform the Employer if the Contractor can be awarded more than one sections of the lines. All proposed Subcontractors and Suppliers are to be identified at tender stage and will be included in the evaluation process.

The Contractor shall use Eskom approved planning tool (Oracle Primavera P6) for planning, scheduling and reporting of all works as per Reporting Data Requirement Specification for Contractors 240-83561037.

The following must be submitted with the Tender:

- Level 4 schedule as defined in the works information which needs to indicate the following activities by the Contractor:
- Design activities, reviews, and acceptance
- SHE documentation review and acceptance
- Quality documentation review and acceptance
- Quality intervention points
- Tests carried out by the Employer and/or Others
- Construction activities
- All activities in the Works Information (including works performed by Subcontractors)
- Significant temporary works
- Activity start and finish dates
- Schedule to align to the submitted method statements
- Key Dates.

- The works is to be completed within accepted durations that are consistence with key dates provided in the contract data.
- Activity sequences (no open-end logic, lags and leads to be replaced with the activities).
- Assigned resources per activity (schedule should reflect the resources needed to do the work.
- Free and total floats
- Activities longer than 10 days should be split into sub tasks.
- Calendar used clearly indicated with the holidays and pay weekends.
- Assign Resources and costs to all activities (Schedule should reflect the resources needed to do the work)
- Ensure that the critical path is valid
- Submit Schedule basis
- S curves should be submitted
- Cost flow/FRI should be submitted and must align to the schedule
- The dates when, in order to provide the Works in accordance with his Programme, the Contractor will need: Plant and Materials and other things to be provided by the Employer.

The Contractor shall submit the first Programme to the Project Manager for acceptance within two (2) week(s) of the starting date. The Programme is to conform strictly to the requirements of Core Clause 31 and the Contract Data.

Stringing programmes and separate Power Line Crossing Schedules are to be submitted to the Project Manager 70 days prior to the first planned crossing to allow for the lead times required. The Line Crossing Schedule must be aligned with the Construction Programme.

The Contractor revises the Programme as required in accordance with Core Clause 32. Each time the Programme is revised, the Contractor is to submit a revised Forecast Rate of Payment / Invoicing.

The contractor to ensure there is a planner/scheduler on site on a two weekly bases (dedicated resource) basis. Submit a CV of the planner with tender. The minimum requirements/qualifications of a planner are National Diploma (Engineering/Construction), competency certificate in primavera P6 and at least 5 years of experience in construction industry/ environment.

RAIN AND WIND EFFECTS ON THE SCHEDULE

The Contractor must allow for 10 days of rain above the trigger of 15mm (and the effects of rain) on the critical path of the foundation activities. Allow a further 10 days for rain above the trigger of 15mm (and the effects of rain) on the critical path of the tower assembly and erection activities. Lastly, allow a further 10 days for rain above the trigger of 10mm (and the effects of rain) on the critical path of the stringing activities. The above allowance should include wind effects in the excess of 10m/s.

The above allowances must run sequentially and should be priced as part of the tender submission in the applicable rates. The sequential 30 days forms part of the contract duration and must be clearly indicated in the contract schedule as 3 critical path activities.

The Contractor must allow an additional 10 days for mist and fog per annum. No compensation event will be considered before this period has lapsed.

The contractor should obtain a weather data from SA weather services for the following closest to the Site Camp. The contractor should familiarise himself/herself with the minimum and maximum temperatures, monthly average rain fall, wind, fog and snow fall around the area using the 10year weather data from SA Weather Services and price or make allowance in his tender quotation.

Only the difference between more adverse whether recorded and the equivalent measurement given above is taken into consideration when assessing the compensation event

The above allowance must run sequentially and should be priced as part of tender submission in the applicable rates.

No compensation will be considered for rain, wind and fog outside the ten year average (2013 to 2023). Should there be a claim the Contractor will need to prove conclusively that this is over and above the norm, should they not be able to do so, any claim will be declined.

In addition to clause 64.1 assessment of Compensation Events approvals will be subject to the Compensation Events Committee.

COMPLETION

The Contractor advises the Supervisor when sections (± 45 towers) of the line are available for final inspection and provides assistance if required.

By the key contract completion Date in the Contract Data, the Contractor shall complete all work required for the commissioning of the line. All other work (rehabilitation, installation of retaining walls, ground-works, removal of temporary works, removal of construction camps, batching plants etc.) shall be completed within four (4) weeks of Take-Over. The Supervisor and/or landowner prior to the release of any retention moneys held against this contract shall approve such work.

The Contractor maintains the works until the defects date with regard to making good erosion caused by his operations, shrinkages, imperfections, settlements, etc.

2.7 Contractor's management, supervision and key people

The *Contractor* submits an organogram showing his human resources and their lines of authority / communication/ roles and responsibility.

The *Contractor* provides experienced and competent personnel with proven track record of previous projects in the following key positions and submits their CV's: **(refer to C1.2 Contract Data Part two)**

- Project Manager/s
- Site Manager/s
- Qualified Rigger/s
- SHEQ/SHE Manager
- Foundation Supervisor/s
- Tower Erection Supervisor/s
- Stringing Supervisor/s
- Environmental Control Officer/s
- Quality Control Officer/s
- Safety Officer/s
- Geotechnical specialist

Interviews may be carried out with key position personnel (by the *Employer*) prior to them taking up relevant positions.

The *Contractor* shall provide experienced and competent personnel in the following key positions:

- **Contracts/ Projects Manager/s**

Competency level: Civil Engineering/Construction Management/Quantity Surveying.
The Contracts Manager shall be registered as a Professional Construction Project Manager (Pr.CPM) with the South African Council for Project and Construction Management Professions (SACPCMP) (or equivalent internationally recognised body) as the one point of responsibility for the management of the project from conception to completion, which includes the management of related professional services. This registration must remain

valid for the duration of the contract. The *Contractor* must provide proof of registration to the *Project Manager*.

- **Construction manager/Agent**

Competency level: Civil Engineering/Construction management/Quantity Surveying or a minimum of 10 years relevant civil construction experience.

The Construction Manager shall be registered as a Professional Construction Manager (Pr.CM) with the South African Council for Project and Construction Management Professions (SACPCMP). This registration must remain valid for the duration of the contract. The *Contractor* must provide proof of registration to the *Project Manager*.

- **Supervisors**

Competency level: As specified in Form 74 (Occupational Health & Safety Specification).

- **Required SHE personnel**

Competency level: As specified in Form 74 (Occupational Health & Safety Specification).

Including but not limited to SACPCMP, registered as a Construction Health and Safety Manager (CHSM) & Construction Health and Safety Officer (CHSO). The *Contractor* shall discuss these appointments and the number of appointments with the *Project Manager*.

2.8 Invoicing and payment

Within one week of receiving a payment certificate from the Service 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 Service Manager's payment certificate. All relevant banking details should be provided to the Employer.

Local invoice:

Due to internal Eskom changes the email address for **local** invoice submission for Power Delivery Projects has changes as per below.

The new email address that should be utilised for:

- Local Eskom invoices: **invoiceseskomlocal@eskom.co.za**
- For foreign invoices will continue using: **InvoicesgrpcapitalPDP@eskom.co.za**

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.

All queries and follow up on local invoice payments should be made by contacting the FSS Contact Centre:

- Tel: 011 800 5060
- e-mail: fss@eskom.co.za

The invoice should have the followin details:

Addressed to:

Eskom Holdings SOC Limited

Department: Power Delivery Projects

Profit Centre: 1P16000

Physical address: Megawatt Park, 1 Maxwell Drive, Sunninghill, 2197

Other information to be reflected on the invoice:

- Name and address of the Contractor and the Service 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,
- Retention monies to be deducted from the invoice.
- 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 not contain more than one PDF file.

Foreign invoices

- The South African Reserve Bank requirements are that the manual invoices should be submitted. Once the original invoices have been hand delivered, you can also send the invoice copy to invoicesgrpcapitalPDP@eskom.co.za.

(Where applicable) The foreign invoice should be sent together with relevant shipping documents and the supplier shall ensure that the commercial invoice has been used previously and therefore funds are not exhausted. The shipping documentation is as follows:

1. Tax invoice
2. Commercial invoice
3. SARS Release notification
4. SAD 500
5. Custom worksheet
6. Bill of lading.

If the supplier does not furnish the supporting documents, the payment cannot be made and the supplier will charge the cost of moving the Forward Exchange Cover (FEC) that Eskom has incurred in managing the risk of currency movement.

Tax Requirement

- In case of a local invoice a PDF file that was created directly from a system meets the definition of original document and is allowed (including saving documents from excel to PDF, word to PDF etc.)
- In case of the foreign invoice the hard printed version is considered an original invoice, hence, the payment terms start to count once the hard print of the original invoice (not an e-mailed invoice) has been received by Transmission Power Delivery Projects Consolidation Team.
- An Invoice that was printed and then scanned to PDF by the Vendor is not acceptable as this is not an original tax invoice by SARS definition but a copy.

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.

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

PAYMENT

In order to facilitate payment for work done, the *Contractor* is to submit his Schedule of Work Done (verified by the *Supervisor*) for payment to the *Project Manager* by the 20th day of each month, in a similar format to the *bill of quantities*. The *Project Manager* will determine the value of the work done in accordance with Core Clause 5 and changes to Core Clause Z (A) clause 50.2.

- Payment for Preliminary and General Items will be proportional to the duration of the contract.
- Payment for foundations will be due upon completion of backfilling.
- Payment for tower steel will be due after the successful release inspection from the manufacturer's plant and delivery to site.
- Payment for tower assembly and erection will be due as per the *Supervisor's* verification.
- Payment for stringing will be due upon regulation, installation of line hardware, accessories, jumpers, anti-climbing devices and line inspection complete and accepted by the *Supervisor*.
- Payment for minor works, access and environmental work items will be due as per the *Supervisor's* verification.
- One half of retention money will be paid on the satisfactory completion of groundwork rehabilitation (including Phase II bush-clearing), to be completed no later than four weeks after the issue of the Take-over Certificate.
- The balance of retention will be paid on the *defects date* i.e. on the issue of the Completion Certificate.

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, 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*

In order to facilitate payment for work done, the *Contractor* is to submit his Schedule of Work Done (verified by the *Supervisor*) for payment to the *Project Manager* by the 20th day of each month, in a

similar format to the *bill of quantities*. Payment for Preliminary and General Items will be proportional to the duration of the contract.

- Payment for foundations shall be due upon completion of backfilling and completion of compaction.
- Payment for tower steel shall be due after the successful release inspection from the manufacturer's plant, delivery to site and verification by both Eskom and the contractor *Supervisor's*.
- Payment for tower assembly and erection shall be due as per the *Supervisor's* verification.
- Payment for stringing shall be due upon regulation, clamping, installation of line hardware, accessories, jumpers, anti-climbing devices, and line inspection complete and accepted by the *Supervisor*.
- Payment for minor works, access and environmental work items shall be due as per the verification.
- One half of retention money shall be paid on the satisfactory completion of groundwork rehabilitation (including bush clearing), to be completed no later than four weeks after the issue of the Take-Over Certificate.
- The balance of retention shall be paid on the *defects date* i.e. on the issue of the Completion Certificate.
- Weather Data is recorded in accordance with the Contract Data and submitted to the *Supervisor* daily.

2.13 Training workshops and technology transfer

Comply to the SDL&I requirements

3 Engineering and the *Contractor's* design

3.1 *Employer's* design

The *Contractor* shall comply with the design criteria stated in the Works Information

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

The *Contractor* is required to appoint a geotechnical specialist to investigate soil / rock conditions and apply suitable foundations designs including earthing system, in various soil conditions, at each foundation position for all towers, in accordance with the loading conditions given in the Line Specification (Refer to Appendices).

The *Contractor* shall submit foundation designs for acceptance well in advance of construction (see TRMSCAAC 6).

Standard conventional foundation designs for the 6 soil / rock types shall be supplied by Eskom. The *Contractor* is required to investigate soil / rock conditions and apply suitable modified foundation designs including earthing system, in various soil conditions, at each foundation position for all towers, in accordance with the loading conditions given in the Line Specification. The *Contractor* shall submit foundation designs for acceptance for all designs well in advance of construction (see TRMSCAAC 6).

Upon acceptance of the *Contractor's* foundation designs, copyright shall pass to the *Employer*. The contractor shall provide geotechnical report or other foundation related information required by the *Employer*. This does not relieve the *Contractor* of the responsibility to investigate the soil / rock conditions, design, test and install suitable foundation systems.

The *Contractor* is responsible for the design of temporary works such as temporary access roads, formwork, excavation support, special crossing methods and any other safety requirements to ensure safe execution of works, etc.

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

Where foundations or hardware are to be designed or supplied by the *Contractor*, a Drawing Register for all foundation designs and hardware assemblies is to be compiled and submitted for acceptance prior to installation.

A Soil Nominations Register is updated by the *Contractor* in conjunction with the *Supervisor* and submitted to the *Project Manager*. The *Supervisor* verifies the nomination of each foundation excavation.

Prior to the casting of concrete, a suitable mix design, according to procedure in the document Titled TX Tower and Line Construction (TRMSCAAC 6), is to be submitted to the *Project Manager* for acceptance. Each concrete batch delivered to site is to be accompanied by a Concrete Batching Note containing dispatch date & time, batch volume, slump test result, total amount of cement and total amount of water in the mix. Four test cubes are to be made of each concrete batch at the batching plant and tested at 7 and 28 days.

A minimum of one set of cubes should be cast per day at the work site. The cubes must be clearly marked as to the position in which they were placed. Where the *Contractor* uses his own testing equipment, or whether use is made of an independent facility, Cube Test Reports must be completed by the *Contractor* to ensure correct timing of tests and tracing of defective concrete.

During stringing operations, the *Contractor* keeps a suitably detailed Stringing Record indicating the location of drums, joints, and duration of stringing. Clearances over railways, roads, power lines, telephone lines etc. are to be measured and submitted to the Project Manager, when sagging of that section is complete.

Where OPGW is installed, documentation indicating test results for joints is to be submitted by the *Contractor* performing OPGW jointing in accordance with NRS 061-2:2002. The records consist of

- a) Pre-Installation Drum Tests – performed upon delivery
- b) Post-Installation Joint Tests – performed during installation, and
- c) End-to-end power and light source tests – performed after installation

The *Contractor* compiles and submits a Tower Footing Resistance Schedule before commencement of stringing.

3.4 Other requirements of the *Contractor's* design

The *Contractor* is responsible for the design of temporary works such as temporary access roads, formwork, excavation support, special crossing methods and any other safety requirements to ensure safe execution of works, etc.

3.5 Use of *Contractor's* design

Upon acceptance of the *Contractor's* foundation designs, copyright will pass to the *Employer*.

3.6 Design of Equipment

The *Contractor* submits particulars of the design of an item of equipment for the *Project Manager* for acceptance if the *Project Manager* instructs him to.

A reason for not accepting is that the design of the item will not allow the *Contractor* to provide the works in accordance with;

- The Works Information
- The *Contractor's* design which the *Project Manager* has accepted or
- The applicable Law.

3.7 Equipment required to be included in the works

The *Contractor* shall submit a list of all vehicles, machinery and equipment

3.8 As-built drawings, operating manuals and maintenance schedules

Upon Completion the *Contractor* is to provide final "as built" records in accordance with the requirements as laid out below.

Two copies of Construction Records are to be compiled by the *Contractor* at the end of the project in a hard copy and electronic format to the *Project Manager*.

The Construction Records consists of the following information which originates from various parties as indicated below:

Item	Data	Information Supplied by
0.	Cover and Index	Project Manager
1.	General line data	Project Manager
2.	Summary of Project	Project Manager
3.	Foundation and Tower Schedules	Contractor
4.	Stringing records	Contractor
5.	OPGW Installation	Contractor
5.1	Schematic Layout	
5.2	Cable Colouring and Fibre Coding	
5.3	Power Meter and Light Source Results	
5.4	Splice Performance <i>Summary</i> (detailed report submitted separately)	
6.	Drawings	
6.1	Foundation Drawings	Contractor
6.2	Tower Outline Drawings	Project Manager
6.3	Hardware Drawings incl. OPGW hardware	Supplier/Contractor
6.4	Insulator Drawings	Supplier/Contractor
7.	Line Profiles	Project Manager

The *Project Manager* submits relevant information as detailed above to the *Contractor* within two weeks of Take-over.

The *Contractor* compiles the document and submits copies to the *Employer* within four weeks after receipt of the relevant information.

4 Procurement

4.1 People

4.1.1 Minimum requirements of people employed on the Site

People employed on site shall have all relevant documents as required by law for employment within the country, i.e. relevant work permits and Identifications.

4.1.2 BBBEE and preferencing scheme

Suppliers are expected to improve or maintain their B-BBEE status through-out the contract period. Eskom reserves the right to verify the authenticity of the certificate. Non-conformance will be dealt with in terms of regulation 22 (Remedies) of Preferential Procurement Regulations, 2017.

4.1.3 SUPPLIER DEVELOPMENT LOCALIZATION AND INDUSTRIALISATION (SDL&I)

As a State-owned enterprise, Eskom supports Government's socio-economic development Initiatives through SDL&I objectives' which includes enterprise development, transfer of skills, job Creation, localisation of procurement initiatives and industrialisation, supplier development and localisation objectives, which includes enterprise development, transfer of skills, job creation, localisation of procurement initiatives and industrialisation.

Job creation

With labour forming a large portion of the total project cost, job creation is an important consideration. The expectation is that the contractor will have a core team which will be made up of specialised skill that may not be sourced in the area surrounding the site. It will be required that at least 50% of all semi-skilled and 100% of all unskilled labour that will be utilised in executing the works, be sourced from areas local to the following sites:

1. Limpopo
2. Mogalakwena

Skills development

The project will be aligned to the CIDB draft framework for developing skills through Construction works contracts. Skills development opportunities will be aimed at empowering local to site youth, the composition will reflect the population demographics of the region, province then the country with specific focus on historically disadvantaged individuals. The targets given are set to benefit the currently unemployed graduates from school, further education and training institutions and universities in the following areas:

1. Limpopo
2. Mogalakwena

The supplier will be required to submit a training programme to Eskom for approval as part of the implementation schedule, which sets out the following in details:

- The time required to identify suitable individuals for skills development;
- The entry level and the outcome of each skills development category.
- To identify the skills and learnership Programme for attaining National Certificate at national Qualification Framework (NQF) level (if applicable)
- The manner in which the candidates will be recruited and assessed for suitability;
- Details of the training provider; and
- Skills development site structure.

Mandatory SDL&I Requirement.

Signed letter committing to subcontract 30% to designated groups that are 51% black owned.

Subcontracting Opportunities

Scope that may be subcontracted and/ outsources includes, Surveying & Pegging; Bush Clearing; Transport; Security; Hiring of portable toilets; Installation of gates; Rehabilitation; Accommodation; Site establishment etc. Eskom target for this subcontracting is 30% of contract value.

Contractor to priorities employing semi-skilled and general labour from local to site communities.

The following SDL&I obligations will be negotiated with the successful supplier prior to contract award.

NOTE TO TENDERERS:

1. The criteria, weightings and targets are set by Eskom.
2. Industrialisation : Localisation includes proposed investment in plant through the establishment of new or expand existing capacity and capability. Suppliers proposing to increase local content through investment in plant must complete a separate template (commitment plan).

Legend

- To be completed by Supplier Development and Localisation Representative
- Automatically calculated or no calculation required
- To be completed by Supplier Development and Localisation Representative
- To be completed by Tenderer

TABLE 1: SUPPLIER DEVELOPMENT AND LOCALISATION COMPLIANCE MATRIX FOR SUPPLIERS AND CONTRACTORS

Criteria	Weight (%)	Total Target (%)	Proposed Target (%)	Total Overall Weighted Score
Local Content to South Africa	50.00%	100.00%		0.00%
Local Content Local to Site	0.00%	0.00%		
Procurement from LBS	0.00%	0.00%		
Procurement from BWO	0.00%	0.00%		
Procurement from BYO	0.00%	0.00%		
Skills Development	50.00%			0.00%
Total Score	100.00%			
Total Supplier Development and Localisation Score				0.00%

TABLE 2: SKILLS DEVELOPMENT COMPLIANCE MATRIX

Skill Type (Occupation)	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
Trainee Foreman		30.00%	2				0.00%
Steel Assemblers		20.00%	7				0.00%
Machine/Equipment operators		20.00%	2				0.00%
SHEQ Trainee		30.00%	1				0.00%
							0.00%
Total		100.00%	12	0	0	0	0.00%

ADDITIONAL NOTES:

Local Content Local to Site refers to resources obtained from the municipal district or province in which the project will take place.
Skills Development candidates Local to Site shall be sourced from the district municipality or province in which the contracted goods or services will be consumed.
Skills Development candidates Local to South Africa shall be sourced elsewhere in South Africa either than the province in which the project takes place.
The targets and proposals for skills development Local to South Africa and Local to Site are exclusive.

To be completed by Tenderer

Number of jobs to be <u>created</u> as a result of this contract	
Number of jobs to be <u>retained</u> as a result of this contract	

To be completed by Tenderer

Company: _____

Designation: _____

Signature: _____

Date: _____

Supplier Development and Localisation Representative

Name: _____

Signature: _____

Date: _____

3 Local production and Content

The following materials are designated for local production and Content:

Commodity	Local Content Threshold
Steel	100%
Cement	100%

Steel Power Pylons steel is a designated sector as per Department of Trade and Industries directive; and will be enforced on all Eskom sponsored projects.

Employer will apply a penalty of 2.5% of the invoice amount for failure to meet SDL&I obligations. As security for the fulfilment of all SDL&I obligations, Eskom will apply a penalty of 2.5% of every invoice amount (excluding VAT) for failure to submit SDL&I performance reports every quarter; or failure to meet the SDL&I obligations in a contract.

Employer will apply a penalty of 0.5% of the invoice amount for failure to meet CSI obligations.

4.2 Subcontracting

4.2.1 Preferred subcontractors

Scope that may be subcontracted and/ outsources includes, Surveying & Pegging; Bush Clearing; Transport; Security; Hiring of portable toilets; Installation of gates; Rehabilitation; Accommodation; Site establishment etc. Eskom target for this subcontracting is 30% of contract value.

4.2.2 Subcontract documentation, and assessment of subcontract tenders

The *Contractor* shall complete and attached a list of *subcontractors*.

4.2.3 Limitations on subcontracting

The *Contractor* shall not subcontract more than 30% of the whole of the contract.

4.2.4 Attendance on subcontractors

Not Applicable

4.3 Plant and Materials

4.3.1 Quality

Refer to attached quality documents.

4.3.2 Plant & Materials provided “free issue” by the *Employer*

The *Employer* shall supply and deliver to the *Contractor's* camp, the following, the *Contractor* is to take delivery thereof, check for completeness, provide suitable off-loading and secure storage facilities and implement an efficient material management system.

- Phase Conductor
- Earthwire
- OPGW and hardware
- Insulators
- Line hardware and fittings
- All other Plant and Material are to be provided by the *Contractor*

The *Project Manager* supplies the *Contractor* with a Materials Schedule indicating the total material requirement for the project. The *Contractor* verifies and updates the inventory for submission at monthly meetings.

The *Contractor* keeps record of all material delivered and kept on site.

Upon delivery of material, the *Contractor* verifies each material consignment in terms of quantity and quality. If such verification cannot be performed upon delivery, the *Contractor* indicates on the delivery note the date by which the inspection will be made. This date is not more than seven days after receipt of the material.

The *Contractor* records the results of the inspection on the delivery note, makes two copies of each delivery note, and submits the original plus one copy to the *Supervisor*. The *Contractor* submits detailed material schedule to the *Project Manager* on a monthly basis.

At the end of the project, material to be returned to stores is quantified in conjunction with the *Supervisor* and a detailed schedule submitted to the *Project Manager*.

4.3.3 Contractor's procurement of Plant and Materials

The *Contractor* shall comply to document "Quality Assurance for Procurement of Assets, Goods and Services" in works information during fabrication,

- Supply and delivery of foundation steelwork, reinforcing, earthing devices and all other foundation related material.
- Fabrication, galvanising and delivery to site of series towers complete with leg and body extensions, guy and tower ropes and fittings, anti-climbing devices and av-locks (anti vandal bolts) and tower shackles etc. in accordance with TRMSCAAC 6.
- Supply and delivery of line labels in accordance with TRMSCAAC 6:
- Supply, delivery and installation of additional earthing material to towers exceeding maximum earth resistance requirements.
- Supply and delivery of servitude gates (including electrification, earthing and access ramps where applicable).
- Supply and delivery of bird guards, bird diverters, aerial warning spheres and guy markers.

4.3.4 Spares and consumables

Not Applicable

4.4 Tests and inspections before delivery

The *Contractor* is to provide prototype towers in accordance with TRMSCAAC 6 upon request by the *Project Manager*. All guy, spacer and cross ropes are to be tested before erection.

4.5 Marking Plant and Materials outside the Working Areas

The *Contractor* shall mark all Equipment, Plant and Material which is outside of the working area destined for the works.

4.6 Contractor's Equipment (including temporary works).

Not Applicable

4.7 Cataloguing requirements by the Contractor

Not Applicable

5 Construction

The *Contractor* shall comply with all the requirements of the SHE specification, EA and CEMPr.

5.1 Temporary works, Site services & construction constraints

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

The *Employer* and *Contractor* representatives shall negotiate access with respective landowners. Written records shall be kept. The *Contractor* is reminded that access shall not necessarily be continuous along the line, both from a physical and negotiated point of view. In addition, vehicular access may be restricted, prohibited or impossible in certain areas.

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

The *Contractor* undertakes demarcation, construction and rehabilitation of all access roads, construction areas, tower sites etc., in accordance with TRMSCAAC 6 and CEMPr. Wherever possible the *Contractor* is to make use of existing access roads tracks to and in existing adjacent servitudes.

The *Contractor* allows for the implementation of procedures contained in the CEMPr. Deviation from these procedures resulting in damage to the environment or property shall be regarded as a defect and the applicable fine will be applied due to the transgression.

Access shall not necessarily be continuous along the servitude. All access routes are to be marked and constructed as agreed by the *Contractor* and the *Employer's Supervisor*.

Vehicular access to some tower sites and parts of the servitude may be restricted, prohibited or impossible and might not necessarily be linear. The *Contractor* is to make provision for alternative methods of construction at these positions.

As per Standard 240-47172520 maximum use of existing roads and tracks should be made, as far as practicable, and the condition of private roads recorded prior to use by the *Contractor's* Environmental officer.

Installation of servitude and game gates shall be in accordance with TRMSCAAC 6 as required by the *Supervisor*. Where gates are required within the servitude, these are to be installed on the centre line to facilitate stringing, or as directed by the *Supervisor*. Wherever possible, existing servitude gates on adjacent servitudes are to be used. If requested by the *Employer*, the *Contractor* shall supply and erect "concertina gates". Concertina gates are to be made with five steel poles and five strands of barbed wire.

The *Contractor* performs bush clearing along the servitude and at tower sites as required for access and construction purposes and/or as instructed by the *Supervisor*. Bush clearing is to be in accordance with "Standard for Bush Clearance and Maintenance within Overhead Power line Servitudes", TRMSCAAC 6 "Transmission Line Towers and Line Construction" and the CEMPr.

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

Contractor to refer to SHE specification, EA and the CEMPr.

5.1.4 Health and safety facilities on Site

Contractor to refer to SHE specification and the EMP

The *Contractor* shall appoint the security for the site camp and plant and material

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

Refer to the CEMPr, the *Contractor* allows for the implementation of procedures contained in the CEMPr. Deviation from these procedures resulting in damage to the environment or property will be regarded as a legal contravention and penalised with fines in alignment to TPDMAN-ST-37.

5.1.6 Title to materials from demolition and excavation

Contractor to refer to SHE specification, EA and the CEMPr

5.1.7 Cooperating with and obtaining acceptance of Others

The *Contractor* shall make his own arrangements, to the approval of the *Supervisor* and the Local Authorities, for the disposal of all surplus material and construction waste resulting from the *works*.

5.1.8 Publicity and progress photographs

As agreed with the Eskom *Project Manager*, *Contractor* to inform the *Project Manager* accordingly.

5.1.9 *Contractor's* Equipment

Records are to be kept of Equipment on Site including whether it is owned or hired.

5.1.10 Equipment provided by the *Employer*

Not Applicable.

5.1.11 Site services and facilities

Contractor shall provide everything else necessary for Providing the Works.

5.1.12 Facilities provided by the *Contractor*

Contractor is to provide in the way of Site accommodation, laboratories, storage, vehicles, Construction camp site and office equipment etc. for the *Project Manager* and the *Supervisor*, and any restrictions or minimum requirements concerning the *Contractor's* own facilities

The *Contractor* is to provide the following items to facilitate the *Employer's* site *Supervisors* project administration team, as price for on the preliminary and general item 2.5 of the bill of quantities:

- a) Minimum one lockable site office (To accommodate 12 working stations, 3x2m for 2 working stations), supplied with power, air conditioning, refrigeration, kitchen facilities and office furniture. Upon Completion, the office will remain the property of the *Contractor*.
- b) Minimum of 12 x working stations including office chairs, printing (A3 and A4 colour), copying & computer facilities, IT infrastructure, document-binding, storing & laminating facilities, disposables, etc.
- c) Uncapped Wi-Fi functional for exclusive Eskom site personnel and to be managed by Eskom Site Manager.
- d) One fully functional (refer to point b) office (capacity x2) for sole use of Project Manager and Engineer.
- e) Security, maintenance (including supplies and disposables) and cleaning services for the duration of the contract.
- f) Portable water kitchen facilities and toilet facilities for sole use of Employer's Representatives.

The *Contractor* shall negotiate with landowners for the erection of any construction camp(s) and accommodation for his personnel, and ensuring compliance with all by-laws and requirements of the relevant authorities **after contract award**. All necessary services - water, electricity, sewerage, toilet facilities, telephones, etc. are to be provided by the *Contractor* to suit his needs.

All evidence of construction camp(s), batching plants, etc. are to be removed upon completion, and such areas rehabilitated to the satisfaction of the landowner and the *Supervisor*.

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

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

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

A site diary is to be kept by the *Contractor* in which all events are recorded. Records of events that could give rise to Compensation Events are to be kept up to date for inspection by the *Supervisor* and/or *Project Manager* at all times.

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

Where scope requires the *Contractor* to adjoin, cross, carry out line swap and/or dismantling of existing infrastructure, The installation being crossed/adjoined/dismantled must be inspected to ensure that it conforms to design standards and that no existing clearances (phase-phase, phase-earth, phase-stay wires) are compromised.

It is of particular importance when working close to energized infrastructure that the minimum safe approach distances are maintained at all times. It should also be noted that the minimum safe approach distance only ensures that a flashover will not occur. It does not stop induction from occurring - be it electrostatic or electromagnetic, *Contractor* to ensure that all necessary measures are taken into consideration while working close to/ adjoining/ lines swaps and or existing infrastructure and dismantling

5.1.14 Survey control and setting out of the works

The Employer will peg all bend points on the line, however *Contractor* is responsible for detail pegging and surveying for all tower positions in accordance with the co-ordinates and line profiles, determining foundation positions, leg extensions and guy rope lengths.

Foundations

- The *Contractor* shall comply with attached document titled "The standard for the construction of overhead powerlines" (TRMSCAAC 6)

Towers

- The *Contractor* shall comply with attached document titled "The standard for the construction of overhead powerlines" (TRMSCAAC 6)
- The *Contractor* undertakes pegging, assembly and erection of towers, leg and body extensions and installation of anti-climb devices, bird-guards and line labels.

Stringing

- The *Contractor* undertakes stringing and regulating of phase and earth conductors together with the installation of line fittings and hardware in accordance with "The standard for the construction of overhead powerlines" (TRMSCAAC 6).
- Upon delivery, the *Contractor* assembles one test sample for each hardware assembly to ensure compatibility with the tower.
- Adequate provisions are to be made for the protection and safe transport of composite insulators and all other material to the work site and during erection. Strict adherence to the "guide to the

storing, transporting and installation of composite insulators" is mandatory. Climbing down or over composite insulators is strictly forbidden – ladders and cradles must be used.

- The *Contractor* provides for the making up of samples and testing of compression joints in accordance with TRMSCAAC 6 before stringing commences.
- The *Contractor* determines the location and type of crossings, and compiles a detailed stringing programme, which is to be submitted to the *Supervisor* at least four weeks before stringing commences. The *Supervisor* shall liaise with local representatives of various bodies with regard to outages.
- When stringing over existing powerlines, telecommunication lines, railway lines, roads and etc the *Contractor* is to provide and erect suitable crossing solutions and nets as required by the safety regulations (Scaffolding will not be allowed as a possible crossing solution).
- Aircraft warning devices, bird-guards and bird-diverters are to be installed where instructed as per CEMPr and the line design

5.1.15 Excavations and associated water control

Refer to SHE specification, CEMPr. The excavations shall be kept covered or barricaded in a manner accepted by the Employer Site Representative to prevent injury to people or livestock. Failure to maintain proper protection of excavations may result in the suspension of excavation work until proper protection measures have been restored. Contractor to barricade and use suitable system for all foundation to prevent animals and human-beings from falling in open excavations.

Foundations should be marked with material that can be visible at night. The contractor must select material that cannot be consumed by animals. Refer to the SHE specifications and CEMPr for more information.

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

Contractor to identify if any and inform project manager accordingly.

It is the Contractor's responsibility to inform the Eskom Site Representative immediately, should Any new or existing features or other services either above or below the ground be found and which are not reflected on the line profiles. This includes land use, roads, telephone or power lines and pipelines/irrigation equipment which may adversely affect tower positions and/or statutory clearance requirements.

5.1.17 Control of noise, dust, water and waste

Refer to the SHE specification and CEMPr.

5.1.18 Sequences of construction or installation

Contractor to inform the Project Manager accordingly on the sequences of construction, progress schedule and method statements. The contractor shall compile an access plan for all tower position for approval prior to start construction.

5.1.19 Giving notice of work to be covered up

Contractor to inform the Project Manager accordingly

The *Contractor* must take cognisance of the CEMPr and TRMSCAAC 6 in the rehabilitation of damage caused during construction.

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

Existing farm roads and tracks to be maintained throughout the contract and left in at least as good condition as was found before construction commenced. The *Contractor* and *Supervisor* are to agree, using

photographic evidence if necessary, as to the state of such roads and tracks before construction commences. Existing berms are to be repaired during and after construction in accordance with TRMSCAAC 6.

New access roads are to be closed on completion unless otherwise instructed. The Employer *Supervisor* may instruct the *Contractor* to install water erosion control berms and other methods upon closure.

Tower sites are to be rehabilitated to the satisfaction of the landowner and *Supervisor*. In certain circumstances re-vegetation, mulching and erosion control measures etc. may be called for.

5.1.20 Hook ups to existing works

Contractor to confirm, prior to starting of construction

5.2 Completion, testing, commissioning and correction of Defects

5.2.1 Work to be done by the Completion Date

All the Work is to be done by the key 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 built drawings of Medupi-Witkop 400kV Transmission Line Section D	Within 30 days after Completion
	Performance testing of the <i>works</i> in use as specified in this Works Information.	Within 30 days after Completion

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

Not Applicable.

5.2.3 Materials facilities and samples for tests and inspections

Contractor to inform the Project Manager 30days prior to inspections and shall comply with the standard for the construction of overhead powerlines (TRMSCAAC 6).

5.2.4 Commissioning

All the Work is to be done by the key Completion Date prior commissioning.

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

Not Applicable.

5.2.6 Take over procedures

Take-over is after all works as stipulated in the *Works* information is completed or at the same time as Completion.

Take-over of The Works shall be in accordance NEC ECC3 hand over Certification and Projects Execution Hand over Document.

The *Contractor* advises the *Supervisor* when the line is available for final inspection and provides assistance if required.

By the completion date in the contract data, the *Contractor* shall complete all work required above the anti-climbing devices. All other work (rehabilitation, installation of retaining walls, groundworks, removal of temporary works, removal of construction camps, batching plants etc.) shall be completed within four (4) weeks of Take-Over. The *Supervisor* and / or landowner prior to the release of any retention moneys held against this contract shall approve such work.

The *Contractor* maintains the works until the defects date with regard to making good erosion caused by his operations, shrinkages, imperfections, settlements, etc.

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

Clause 43.4 of the NEC requires that 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, the *Employer* may require the *Contractor* to undertake certain procedures before such access can be granted.

5.2.8 Performance tests after Completion

Not applicable.

5.2.9 Training and technology transfer

Compliance to the SDL&I requirements.

5.2.10 Operational maintenance after Completion

Not Applicable.

6 Plant and Materials standards and workmanship

6.1 Investigation, survey and Site clearance

Refer to the CEMPr and “The standard for the construction of overhead powerlines” (TRMSCAAC 6).

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 Transfer of Real Ownership

Each item of plant and Material shall become the property of the Employer, free from any liens and other encumbrances, upon the earlier occurring of

- The item becoming part of the permanent work: or
- Payment for the item being made in full to the Contractor, in which event ownership shall be transferred to the Employer by Constitutum possessorium (i.e. the contractor retains physical control of the item on behalf of its new owner, the Employer)

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.

The following is a list of drawings issued with the enquiry, refer to Medupi – Witkop 400kV Line Specification (LES0475, Rev 4) the specification provided below indicated drawings:

- Outline tower drawings.
- Conceptual foundation drawings.
- Conceptual hardware drawings.

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

Drawing number	Revision	Title

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.
