Eskom

NEC3 Engineering and Construction

Short Contract (ECSC3)

A contract between **Eskom Holdings SOC Ltd (Reg No. 2002/015527/30)**

and

for **Design and Construction of Electric Vehicle Charging Infrastructure at Lethabo Power station.**

Contents: Compiled in accordance with CIDB Standard for Uniformity in Construction Procurement (May 2010 amendments)

Documentation prepared by: **Philani Hlombe**

C1 Agreements & Contract Data

C1.1 Form of Offer and Acceptance

Offer

The Employer, identified in the Acceptance page signature block on the next page, has solicited offers to enter into a contract for the procurement of:

Design and Construction of Electric Vehicle Charging Infrastructure at Lethabo Power station.

The tenderer, identified in the signature block below, having examined the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the Contractor under the Contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the Contract Data.

The offered total of the Prices exclusive of VAT is	**R**
Value Added Tax @ 15% is	**R**
The offered total of the Prices inclusive of VAT is	**R**
(in words)	

This Offer may be accepted by the Employer by signing the form of Acceptance overleaf and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the Contractor in the conditions of contract identified in the Contract Data.

Signature(s) .....

Name(s) .....

Capacity .....

For the tenderer: .....
(Insert name and address of organisation)

.....

Name & signature of witness ..... Date .....

Tenderer's CIDB registration number: .....

Acceptance

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the tenderer's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the conditions of contract identified in the Contract Data. Acceptance of the tenderer's Offer shall form an Agreement between the Employer and the tenderer upon the terms and conditions contained in this Agreement and in the Contract that is the subject of this Agreement.

The terms of the Contract, are contained in:

Part 1 Agreements and Contract Data, (which includes this Form of Offer and Acceptance)

Part 2 Pricing Data

Part 3 Scope of Work: Works Information

Part 4 Site Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be signed by the duly authorised representative(s) for both parties.

The tenderer shall within one week of receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the Contract Data at, or just after, the date this Agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the tenderer receives one fully completed and signed copy of this document, including the Schedule of Deviations (if any) together with all the terms of the contract as listed above.

Signature(s)	.....	.....
Name(s)	.....	.....
Capacity	.....	.....
	.....	.....
		(Insert name and address of organisation)
for the Employer	**Eskom Holdings SOC Ltd, Megawatt Park, Maxwell Drive, Sandton, Johannesburg, 2199**	
Name & signature of witness	.....	Date .....

Note: If a tenderer wishes to submit alternative tender offers, further copies of this document may be used for that purpose, duly endorsed, 'Alternative Tender No. _____ '

Schedule of Deviations

Note:

1. To be completed by the Employer prior to award of contract. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1	**[•]**	**[•]**
2	**[•]**	**[•]**
3	**[•]**	**[•]**
4	**[•]**	**[•]**
5	**[•]**	**[•]**
6	**[•]**	**[•]**
7	**[•]**	**[•]**

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

	For the tenderer:	**For the Employer**
Signature		
Name		
Capacity		
On behalf of	*(Insert name and address of organisation)*	**Eskom Holdings SOC Ltd, Megawatt Park, Maxwell Drive, Sandton, Johannesburg, 2199** *(Insert name and address of organisation)*
Name & signature of witness		
Date		

C1.2 Contract Data

Data provided by the *Employer.*

Completion of the data in full is essential to create a complete contract.

Clause	Statement	Data
	The *conditions of contract* are the core clauses and the clauses for main Option	**A: Priced contract with activity schedule**
	Dispute resolution Option	**W1:Dispute resolution procedure**
	and secondary Options	**X2 : Changes in the law** **X7: Delay damages** **X16: Retention** **X18: Limitation of liability** **Z:*Additional conditions of contract***
	of the NEC3 Engineering and Construction Short Contract.	
10.1	The *Employer* is (Name):	**Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state-owned company incorporated in terms of the company laws of the Republic of South Africa**
	Address	**Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg**
10.1 & 14.4	The *Employer*'s representative to whom the *Employer* in terms of clause 14.4 delegates his actions[1] is (Name):	**Philani Hlombe**
	Address	**Eskom Holdings SOC Ltd** **Lethabo Power Station** **Deneysville Road** **Viljoensdrift**
	Tel No.	**[●]**
	Fax No.	**[●]**
	E-mail address	**[●]**
11.2(11)	The *works* are	**Design and Construction of Electric Vehicle Charging Infrastructure at Lethabo Power station.**

[1] Except those actions which can only be done by the *Employer* as a Party to the contract.

11.2(13)	The Works Information is in	**the document called 'Works Information' in Part 3 of this contract.**
11.2(12)	The Site Information is in	**the document called 'Site Information' in Part 4 of this contract.**
11.2(12)	The *site* is	**Lethabo Power Station**
30.1	The *starting date* is.	**10 November 2025**
11.2(2)	The *completion date* is.	**30 January 2026**
13.2	The *period for reply* is	**1 week**
40	The *defects date* is	**52 weeks after Completion**
41.3	The *defect correction period* is	**2 weeks**
50.1	The *assessment day* is the	**25th of each month.**
50.5	The *delay damages* are	**0,5% the contract value per day up to a maximum of 15% of the contract**
50.6	The retention is	**5% of every assessment made**
51.2	The interest rate on late payment is	**0%**
80.1	The *Contractor* is not liable to the *Employer* for loss of or damage to the *Employer*'s property in excess of	**The amount of the deductibles relevant to the event described in the applicable" Format ECSC3" policy available on** http://www.eskom.co.za/Tenders/InsurancePolicies ProceduresPages/EIMS_Policies_ From_1_April_2014_To_31_March_2015.aspx
	Does the United Kingdom Housing Grants, Construction and Regeneration Act (1996) apply?	**No**
82.1	The Employer provides this insurance.	**as stated for "Format ECSC3" available on** http://www.eskom.co.za/Tenders/InsurancePolicies ProceduresPages/EIMS_Policies_ From_1_April_2014_To_31_March_2015.aspx
82.1	The minimum amount of cover for the third insurance stated in the Insurance Table is:	**whatever the Contractor deems necessary in addition to that provided by the Employer.**
82.1	The minimum amount of cover for the fourth insurance stated in the Insurance. Table is:	As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the Contractor's common law liability for people falling outside the scope of the Act with a limit of Indemnity of not less than R500 000 (Five hundred thousand Rands)

93.1	The *Adjudicator* is	**The person selected from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of Adjudicators by the Party intending to refer a dispute to him. (see www.ice-sa.org.za). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).**
	Address	**[●]**
	Tel No.	**[●]**
	Fax No.	**[●]**
	e-mail	**[●]**
93.2(2)	The *Adjudicator nominating body* is:	**The Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See www.ice-sa.org.za) or its successor body**
93.4	The *tribunal* is:	**Arbitration.**
	The *arbitration procedure* is	**The latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.**
	The place where arbitration is to be held is	**South Africa**
	The person or organisation who will choose an arbitrator. - if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is	**the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.**

The *conditions of contract* are the NEC3 Engineering and Construction Short Contract (April 2013)[2][3] and the following additional conditions Z1 to Z11 which always apply:

Z1 Cession delegation and assignment

Z1.1 The *Contractor* does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer.*

Z1.2 Notwithstanding the above, the *Employer* may on written notice to the *Contractor* cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.

Z2 Change of Broad Based Black Economic Empowerment (B-BBEE) status

Z2.1 Where a change in the *Contractor's* legal status, ownership or any other change to his business

[2] If June 2005 Edition applies, delete April 2013 and insert June 2005
[3] State whether attached as a 'PDF' file in terms of Eskom's licence, or to be obtained from Engineering Contract Strategies Tel 011 803 3008, Fax 086 539 1902 or www.ecs.co.za.

composition or business dealings results in a change to the *Contractor*'s B-BBEE status, the *Contractor* notifies the *Employer* within seven days of the change.

Z2.2 The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Employer* within thirty days of the notification or as otherwise instructed by the *Employer*.

Z2.3 Where, as a result, the *Contractor's* B-BBEE status has decreased since the *starting date* the *Employer* may either re-negotiate this contract or alternatively, terminate the *Contractor*'s obligation to Provide the Works.

Z2.4 Failure by the *Contractor* to notify the *Employer* of a change in its B-BBEE status may constitute a reason for termination. If the *Employer* terminates in terms of this clause, the procedures on termination are those stated in Clause 91.1 and the amount due on termination includes amounts listed in Clause 92.1 less a deduction of the forecast additional cost to the *Employer* of completing the *works*.

Z3 Confidentiality

Z3.1 The *Contractor* does not disclose or make any information arising from or in connection with this contract available to others except where required by this contract. This undertaking does not, however, apply to information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time). Should the *Contractor* disclose information to others where required by this contract the *Contractor* ensures that the provisions of this clause are complied with by the recipient.

Z3.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Employer*.

Z3.3 In the event that the *Contractor* is, at any time, required by law to disclose any such information which is required to be kept confidential, the *Contractor*, to the extent permitted by law prior to disclosure, notifies the *Employer* so that an appropriate protection order and/or any other action can be taken, if possible, prior to any disclosure. In the event that such protective order is not, or cannot, be obtained, then the *Contractor* may disclose that portion of the information which it is required to be disclosed by law and uses reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed.

Z3.4 The taking of images (whether photographs, video footage or otherwise) of the *works* or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Employer*. All rights in and to all such images vests exclusively in the *Employer*.

Z3.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

Z4 Waiver and estoppel: Add to clause 12.2:

Z4.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties or their delegates or the *Adjudicator* does not constitute a waiver of rights and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.

Z5 Health, safety and the environment

Z5.1 The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *works*. Without limitation the *Contractor*:

- accepts that the *Employer* may appoint him as the "Principal Contractor" (as defined and

provided for under the Construction Regulations 2014 (promulgated under the Occupational Health & Safety Act 85 of 1993) ("the Construction Regulations") for the Site.

- warrants that the total of the Prices as at the Contract Date includes a sufficient amount for proper compliance with the Construction Regulations, all applicable health & safety laws and regulations and the health and safety rules, guidelines and procedures provided for in this contract and generally for the proper maintenance of health & safety in and about the execution of *works*; and
- undertakes, in and about the execution of the *works*, to comply with the Construction Regulations and with all applicable health & safety laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.
- Service Provider shall ensure Compliance to Act, Eskom Safety Standards and Specifications:
- The company to be registered with COID and have a letter of good standing prior to commencement of the work
- The client to evaluate and approve the contractor's safety file after the contract has been awarded.
- Contractor safety plans that shall be signed and approved by the responsible managers and their safety practitioners. Ensure what is listed on the file shall be implemented during project execution.
- The contractor to ensure that the employees are trained and competent on the activities to be done.

Mitigating Factors.

1.The successful contractor shall be expected to have OHS system that is aligned to the client's

2.The contractor shall be expected to conduct task risk assessment and pre-job briefs every time before performing work.

3. The contractor must ensure that they align themselves with the requirements of PTW wherever it issued.

4.Strict adherence to the PPE requirement must be adhered to by the contractor

5.The contractor shall prepare a safety file for approval by Safety risk Management before work commences.

Z5.2 The *Contractor*, in and about the execution of the *works*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

Z6 Provision of a Tax Invoice and interest. Add to clause 50

Z6.1 The *Contractor* provides the *Employer* with a tax invoice in accordance with the *Employer*'s procedures stated in the Works Information, showing the correctly assessed amount due for payment.

Z6.2 If the *Contractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Employer* is to make a payment is extended by a period equal in time to the delayed submission of the correct tax invoice. Interest due by the *Employer* in terms of clause 51.2 is then calculated from the delayed date by when payment is to be made.

Z6.3 The *Contractor* is required to comply with the requirements of the Value Added Tax Act, no 89

of 1991 (as amended) and to include the *Employer*'s VAT number 4740101508 on each invoice he submits for payment.

Z7 Notifying compensation events

Z7.1 Delete from the last sentence in clause 61.1, "unless the event arises from an instruction of the *Employer*."

Z8 *Employer's* limitation of liability; Add to clause 80.1

Z8.1 The *Employer* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand).

Z9 Termination: Add to clause 90.2, after the words "or its equivalent":

Z9.1 or had a business rescue order granted against it.

Z10 Addition to Clause 50.5

Z10.1 If the amount due for the *Contractor*'s payment of *delay damages* reaches the limits stated in this Contract Data (if any), the *Employer* may terminate the *Contractor*'s obligation to Provide the Works.

If the *Employer* terminates in terms of this clause, the procedures on termination are those stated in Clause 91.1 and the amount due on termination includes amounts listed in Clause 92.1 less a deduction of the forecast additional cost to the *Employer* of completing the *works*.

Z11 Ethics

For the purposes of this Z-clause, the following definitions apply:

Affected Party	means, as the context requires, any party, irrespective of whether it is the *Contractor* or a third party, such party's employees, agents, or Subconsultants or Subcontractor's employees, or any one or more of all of these parties' relatives or friends,
Coercive Action	means to harm or threaten to harm, directly or indirectly, an Affected Party or the property of an Affected Party, or to otherwise influence or attempt to influence an Affected Party to act unlawfully or illegally,
Collusive Action	means where two or more parties co-operate to achieve an unlawful or illegal purpose, including to influence an Affected Party to act unlawfully or illegally,
Committing Party	means, as the context requires, the *Contractor*, or any member thereof in the case of a joint venture, or its employees, agents, or Subcontractors or the Subcontractor's employees,
Corrupt Action	means the offering, giving, taking, or soliciting, directly or indirectly, of a good or service to unlawfully or illegally influence the actions of an Affected Party,
Fraudulent Action	means any unlawfully or illegally intentional act or omission that misleads, or attempts to mislead, an Affected Party, in order to obtain a financial or other benefit or to avoid an obligation or incurring an obligation,
Obstructive Action	means a Committing Party unlawfully or illegally destroying, falsifying, altering or concealing information or making false statements to materially impede an investigation into allegations of Prohibited Action, and
Prohibited	means any one or more of a Coercive Action, Collusive Action Corrupt Action,

Action Fraudulent Action or Obstructive Action.

Z11.1 A Committing Party may not take any Prohibited Action during the course of the procurement of this contract or in execution thereof.

Z11.2 The *Employer* may terminate the *Contractor*'s obligation to Provide the Services if a Committing Party has taken such Prohibited Action and the *Contractor* did not take timely and appropriate action to prevent or remedy the situation, without limiting any other rights or remedies the *Employer* has. It is not required that the Committing Party had to have been found guilty, in court or in any other similar process, of such Prohibited Action before the *Employer* can terminate the *Contractor*'s obligation to Provide the Services for this reason.

Z11.3 If the *Employer* terminates the *Contractor*'s obligation to Provide the Services for this reason, the amounts due on termination are those intended in core clauses 92.1 and 92.2.

Z11.4 A Committing Party co-operates fully with any investigation pursuant to alleged Prohibited Action. Where the *Employer* does not have a contractual bond with the Committing Party, the *Contractor* ensures that the Committing Party co-operates fully with an investigation.

Quality assurance

Note the following quality requirements for supplier to be in compliance prior to contract award

- 240-105658000 (QM 58) - Specifying Eskom supplier quality requirements. Tenderer to comply with the selected requirements as per (**category 2**).
- 240-68099512FORM A: Tender & Contract Quality Requirements For QM 58 and Quality Requirements For ISO 9001 Standard - Tenderer to complete and sign form A (Section A & E)
- 240-12248626 List of Tender Returnable Document - Tenderer to submit all tender returnable for section A, B and C, D & E as per list (**category 2**)

Quality Requirements

a) The Supplier shall comply with the Eskom's QM 58 (240-105658000) Supplier Quality Management Specification

b) Quality requirements include visual inspection by the *Employer*, who will be entitled to witness progress of work at any time. The *Employer* shall also have the right to stop work and re-instruct the *Contractor*, who will comply with the requests.

c) The *Employer* may, by arrangement, inspect completed work. If, in opinion of the *Employer*, the work does not comply with the quality requirements expected from the *Contractor*, the *Employer* shall instruct the *Contractor* to rectify the faults. The *Contractor* will comply with the instructions.

d) The *Contractor* will comply with the *Employer*'s Quality Requirements as specified in procedure BIA/QA/STD/01 latest revision, which is available from the Documentation Centre.

Quality Control

a) The Contractor shall develop Quality Control Plans (QCPs) and ensure that such are approved by Engineering prior to any work execution. The principle of "no QCP, no work shall apply". All intervention points such as witness, hold and inspection points shall be strictly adhered to. Any Eskom intervention point waived by Eskom shall be in writing.

b) The QCP shall be signed progressively by the Engineer, Eskom technician and *Contractor*

technician.

c) Data books, reviews, reports and diagrams/drawings shall be submitted to Engineering after the completion of respective work on each machine (CMs, PMs, overhauls and refurbishments). This, however, shall not apply to basic day-to-day activities.

d) QCP's to be submitted to Engineering and Quality for approval prior to major overhaul or maintenance work commencement.

e) The contractor shall compile detailed technical sound failure assessment reports on respective machine failures as part of the data packs.

f) The *Contractor* shall compile detailed technical repair/refurbishment reports detailing what refurbishment work was done on respective machine repairs as part of the data packs.

g) The contractor shall compile commissioning reports for each machine.

h) Following the execution of planned services and overhauls, the contractor shall provide a technical performance report after commissioning as proof that the machine is performing as expected.

i) The contractor shall compile repair method statements with respect to each damaged machine component(s).

j) The *Contractor* shall compile a high-level weekly machines plant health report indicating the state of each machine, noting all the defects on each machine as well as the plan of action for the correction or return to service. This report shall be provided to the Engineer and Line Maintenance Manager.

k) The format (templates) of the reports as per e) - j) shall be negotiated with and approved by Eskom Engineering.

l) The Contractor to ensure that all measuring and test equipment are calibrated at all times & proof thereof must be readily available.

m) All Quality References and Standards as stipulated in this document will be adhered to.

n) The *Contractor* shall utilise the Employer's quality documentation management system and processes.

o) The supplier will ensure that the required OEM specifications and standards are met

p) The *Contractor* is subjected to quality auditing at any point in time during the life of the contract.

Z12 Insurance

Z _12.1 Replace core clause 82 with the following:

Insurance cover 82

82.1 When requested by a Party, the other Party provides certificates from his insurer or broker stating that the insurances required by this contract are in force.

82.2 The *Contractor* provides the insurances stated in the Insurance Table A, from the *starting date* until the earlier of Completion and the date of the termination certificate.

INSURANCE TABLE A

Insurance against	Minimum amount of cover or minimum limit of indemnity	Cover provided until
Loss of or damage to the *works*	The replacement cost where not covered by the *Employer*'s insurance. The *Employer*'s policy deductible as at contract date, where covered by the *Employer*'s insurance	The *Employer*'s certificate of Completion has been issued
Loss of or damage to Equipment, Plant and Materials	The replacement cost where not covered by the *Employer*'s insurance. The *Employer*'s policy deductible as at contract date, where covered by the *Employer*'s insurance	The Defects Certificate has been issued
The *Contractor*'s liability for loss of or damage to property (except the *works*, Plant and Materials and Equipment) and for bodily injury to or death of a person (not an employee of the *Contractor*) arising from or in connection with the *Contractor*'s Providing the Works	**Loss of or damage to property** *Employer*'s property The replacement cost where not covered by the *Employer*'s insurance. The *Employer*'s policy deductible as at contract date were covered by the *Employer*'s insurance. Other property The replacement cost. **Bodily injury to or death of a person** The amount required by the applicable law	
Liability for death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection	The amount required by the applicable law	

with this contract		

82.3 The *Employer* provides the insurances as stated in the Insurance Table B

INSURANCE TABLE B

Insurance against or name of policy	**Minimum amount of cover or minin of indemnity**
Assets All Risk	Per the insurance policy document
Contract Works insurance	Per the insurance policy document
Environmental Liability	Per the insurance policy document
General and Public Liability	Per the insurance policy document
Transportation (Marine)	Per the insurance policy document
Motor Fleet and Mobile Plant	Per the insurance policy document
Terrorism	Per the insurance policy document
Cyber Liability	Per the insurance policy document
Nuclear Material Damage and Business Interruption	Per the insurance policy document
Nuclear Material Damage Terrorism	Per the insurance policy document

Z13 Nuclear Liability

Z13.1 The *Employer* is the operator of the Koeberg Nuclear Power Station (KNPS), a nuclear installation, as designated by the National Nuclear Regulator of the Republic of South Africa, and is the holder of a nuclear licence in respect of the KNPS.

Z13.2 The *Employer* is solely responsible for and indemnifies the *Contractor* or any other person against any and all liabilities which the *Contractor* or any person may incur arising out of or resulting from nuclear damage, as defined in Act 47 of 1999, save to the extent that any liabilities are incurred due to the unlawful intent of the *Contractor* or any other person or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z13.3 Subject to clause Z13.4 below, the *Employer* waives all rights of recourse, arising from the aforesaid, save to the extent that any claims arise or liability is incurred due or attributable to the unlawful intent of the *Contractor* or any other person, or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z13.4 The *Employer* does not waive its rights provided for in section 30 (7) of Act 47 of 1999, or any replacement section dealing with the same subject matter.

Z13.5 The protection afforded by the provisions hereof shall be in effect until the KNPS is decommissioned.

Z14 Asbestos

For the purposes of this Z-clause, the following definitions apply:

AAIA means approved asbestos inspection authority.

ACM means asbestos containing materials.

AL means action level, i.e. a level of 50% of the OEL, i.e. 0.1 regulated asbestos fibres per ml of air measured over a 4 hour period. The value at which proactive actions is required in order to control asbestos exposure to prevent exceeding the OEL.

Ambient Air means breathable air in area of work with specific reference to breathing zone, which is defined to be a virtual area within a radius of approximately 30cm from the nose inlet.

Compliance Monitoring means compliance sampling used to assess whether or not the personal exposure of workers to regulated asbestos fibres is in compliance with the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.

OEL means occupational exposure limit.

Parallel Measurements means measurements performed in parallel, yet separately, to existing measurements to verify validity of results.

Safe Levels means airborne asbestos exposure levels conforming to the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.

Standard means the *Employer*'s Asbestos Standard 32-303: Requirements for Safe Processing, Handling, Storing, Disposal and Phase-out of Asbestos and Asbestos Containing Material, Equipment and Articles.

SANAS means the South African National Accreditation System.

TWA means the average exposure, within a given workplace, to airborne asbestos fibres, normalised to the baseline of a 4 hour continuous period, also applicable to short term exposures, i.e. 10-minute TWA.

Z14.1 The *Employer* ensures that the Ambient Air in the area where the *Contractor* will Provide the Services conforms to the acceptable prescribed South African standard for asbestos, as per the regulations published in GNR 155 of 10 February 2002, under the Occupational Health and Safety Act, 1993 (Act 85 of 1993) ("Asbestos Regulations"). The OEL for asbestos is 0.2 regulated asbestos fibres per millilitre of air as a 4-hour TWA, averaged over any continuous period of four hours, and the short term exposure limit of 0.6 regulated asbestos fibres per millilitre of air as a 10-minute TWA, averaged over any 10 minutes, measured in accordance with HSG248 and monitored according to HSG173 and OESSM.

Z14.2 Upon written request by the *Contractor*, the *Employer* certifies that these conditions prevail. All measurements and reporting are effected by an independent, competent, and certified occupational hygiene inspection body, i.e. a SANAS accredited and Department of Employment and Labour approved AAIA. The *Contractor* may perform Parallel Measurements and related control measures at the *Contractor*'s expense. For the purposes of compliance the results generated from Parallel Measurements are evaluated only against South African statutory limits as detailed in clause Z14.1. Control measures conform to the requirements stipulated in the AAIA-approved asbestos work plan.

Z14.3 The *Employer* manages asbestos and ACM according to the Standard.

Z14.4 In the event that any asbestos is identified while Providing the Services, a risk assessment is conducted and if so required, with reference to possible exposure to an airborne concentration of above the AL for asbestos, immediate control measures are implemented and relevant air monitoring conducted in order to declare the area safe.

Z14.5 The *Contractor*'s personnel are entitled to stop working and leave the contaminated area forthwith until such time that the area of concern is declared safe by either Compliance Monitoring or an AAIA approved control measure intervention, for example, per the emergency asbestos work plan, if applicable.

Z14.6 The *Contractor* continues to Provide the Services, without additional control measures presented, on presentation of Safe Levels. The contractually agreed dates to Provide the Services, including the Completion Date, are adjusted accordingly. The contractually agreed dates are extended by the notification periods required by regulations 3 and 21 of the Asbestos Regulations, 2001.

Z14.7 Any removal and disposal of asbestos, asbestos containing materials and waste, is done by a registered asbestos contractor, instructed by the *Employer* at the *Employer*'s expense, and conducted in line with South African legislation.

Supplier Development Localization and Industrialization

Section 1: Specific Goals

A maximum of 10/20 points may be awarded to a tenderer for the specific goal specified for the tender. The points scored for the specific goal must be added to the points scored for price and the total must be rounded off to the nearest two decimal places. Subject to section 2(1)(f) of the Preferential

Procurement Policy Framework Act, the contract must be awarded to the tenderer scoring the highest points.

B-BBEE Status Level of Contributor	Number of points (90/10 system)	Number of points (80/20 system)
1	10	20
2	9	18
3	6	14
4	5	12
5	4	8
6	3	6
7	2	4
8	1	2
Non-compliant contributor	0	0

NB: The following documents are required to claim preference points,

- Valid B-BBEE certificate issued by a SANAS accredited verification agency / sworn affidavit / CIPS affidavit
- Proof of ownership / shareholding (preferably CIPC documentation) inclusive of shareholding breakdown
- Certified ID copies of shareholder(s)
- Proof of Disability (where applicable)
- In a case of a trust, consortium or joint venture (including incorporated consortia and joint ventures),a consolidated B-BBEE status level verification certificate.

Note: Eskom will not accept a Sworn Affidavit with an electronic signature

Tenderer failing to provide documentation for the allocation of preference points will not be disqualified, but'

- May only score point out of 90/80 for price
- Scores 0 points out of 10/20 for specific goals

Section 2: Objective criteria

The inclusion of objective criteria is not mandatory but a condition for contract award. If the tenderer does not meet objective criteria; it may lead to the second-ranked tenderer being recommended for award.

2.2 CIDB Skills Development

Continuation of Mandatory Requirements

	YES	NO
a) Is there CIDB compulsory training?	☑	☐
If *Yes,* what is the% of the Construction Skills Development Goal % (CSDG)	Not applicable	

If the answer above is Yes, it will then be mandatory for the supplier to match Eskom's targets

Criteria	Eskom Target	Tenderer Commitment
CSDG Percentage	N/A	
Description	2EB or higher	

NOTE: Failure by the Contractor/Service Provider/Supplier to meet the CIDB CSDG mandatory % will render their tender non-responsive.

Section 3: SDL&I Objectives in line with Reconstruction and Development Programme (RDP) Goals

Tenderers who complete and submit the objectives as required, but who do not meet Eskom's targets, will not be disqualified. SDL&I objectives do not form part of scoring but commitments will form part of contractual obligations

Note: The undertakings shall be sourced from previously disadvantaged Communities around Sedibeng and Fezile Dabi District Municipalities.

1. Transformation – BBBEE Improvement or Retention Plan

Transformation remains an area of focus, where Eskom continuously strives to align itself with national transformation imperatives to unlock growth, drive industrialization, create employment and contribute to skills development. Eskom encourages its suppliers to constantly strive to improve their B-BBEE rating. Whereas Tenderer/s will be allocated points in terms of a preference point system based on specific goals, Eskom also requests that tenderer/s submits their B-BBEE improvement or retention plan within 30 days of signing the contract.

Tenderer/s are therefore requested to indicate the extent to which they will maintain (only if the respondent is a Level 1) or may improve/maintain their B-BBEE status over the contract period if their B-BBEE status is level 2 or 3. Tenderer/s with a B-BBEE status level 4 at the time of contract award, shall migrate and achieve as a non-negotiable a milestone of B-BBEE Level 3 by the end of the first year of the contract and thereafter improve their B-BBEE status level or migrate by one level higher. Tenderer/s with a B-BBEE recognition status of Level 5 to Level 8 or non-compliant at the time of contract award, shall migrate and achieve as a non-negotiable a milestone of Level 4 by the end of the first year of the contract and thereafter improve at least one B-BBEE Level higher of each year from the second year of the contract.

Tenderer/s are requested to submit their B-BBEE Improvement Plan as an essential document within 30 days of signing the contract.

NB: A valid B-BBEE certificate or Sworn Affidavit is a condition for contract award, if your company's annual Total Revenue is R10 Million or less you qualify as an Exempted Micro Enterprise therefore you can submit Sworn Affidavit. If your annual Total Revenue is R50 Million or less, you qualify as Qualifying Small Enterprise and must comply with all of the elements of QSE score card relevant to your sector unless an entity is at least 51% Black owned you are required to obtain a Sworn affidavit. If your Annual Total Revenue is above R50m you need to submit a Valid B-BBEE certificate.

2. Local Procurement Content

"Local Procurement Content" refers to value added in South Africa by South African resources. Where a single contract involves a combination of local and imported goods and/or services, the tender response must be separated into its components as per the Price Schedule included with the tender documents. Local procurement content is total spending minus the imported component.

Tenderers are required to submit their proposals in the table below.

Local Procurement Content	Eskom target	Tenderer Proposal
	100%	

Section 4: SDL&I Penalty and Performance Security

Not applicable

Section 5: Reporting and Monitoring

- Not applicable

Section 6: General Information on Validity of Sworn Affidavits

The following must be considered when it comes to validity of Affidavits;

Tenderers submitting B-BBEE Sworn Affidavits must ensure that the affidavits meet the following key pointers to ensure their validity:

- Name/s of deponent as they appear in the identity document and the identity number.
- Designation of the deponent as the director, owner or member must be indicated in order to know that person is duly authorised to depose of an affidavit. (Mark the applicable option).
- Name of enterprise as per enterprise registration documents issued by the CIPC, where applicable, and enterprise business address.
- Percentage of black ownership, black female ownership and designated group. In the case of specialised enterprises as per Statement 004, the percentage of black beneficiaries must be reflected. (No blank spaces to be left).
- Indicate total revenue for the year under review and whether it is based on audited financial statements or management account. (Mark the applicable option).
- Financial year end as per the enterprise's registration documents, which was used to determine the total revenue. (Financial year end to be stipulated by day/month/year).
- B-BBEE Status level. An enterprise can only have one status level. (Tick applicable level)

- Empowering supplier status must be indicated. For QSEs, the deponent must select the basis for the empowering supplier status.
- Date deponent signed and date of Commissioner of Oath must be the same. (The sworn affidavit must be signed in the presence of the Commissioner of Oath. Furthermore the Commissioner must also sign and stamp)
- Commissioner of Oath cannot be an employee or ex officio of the enterprise because, a person cannot by law, commission a sworn affidavit in which they have an interest.

Data provided by the *Contractor* (the *Contractor*'s Offer)

The tendering contractor is advised to read both the NEC3 Engineering and Construction Short Contract (April 2013) and the relevant parts of its Guidance Notes (ECSC3-GN)[4] in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on page 31 of the ECSC3 April 2013 Guidance Notes.

Completion of the data in full is essential to create a complete contract.

10.1	The *Contractor* is (Name):	**[●]**
	Address	**[●]**
	Tel No.	**[●]**
	Fax No.	**[●]**
	E-mail address	**[●]**
63.2	The percentage for overheads and profit added to the Defined Cost for people is	**[●]%**
63.2	The percentage for overheads and profit added to other Defined Cost is	**[●]%**
11.2(9)	The Price List is in	**the document called 'Price List' in Part 2 of this contract.**
11.2(10)	The offered total of the Prices is. [Enter the total of the Prices from the Price List]:	**R[●]** **excluding VAT** **[in words]** **[●]** **excluding VAT**

[4] Available from Engineering Contract Strategies Tel 011 803 3008, Fax 086 539 1902 or www.ecs.co.za.

C2 Pricing Data

C2.1 Pricing assumptions

Entries in the first four columns in the Price List are made either by the *Employer* or the tendering contractor.

If the *Contractor* is to be paid an amount for the item which is not adjusted if the quantity of work in the item changes, the tenderer enters the amount in the Price column only; the Unit, Quantity and Rate columns being left blank.

If the *Contractor* is to be paid an amount for the item of work which is the rate for the work multiplied by the quantity completed, the tenderer enters the rate which is then multiplied by the expected quantity to produce the Price, which is also entered.

All Prices are to be shown excluding VAT unless instructed otherwise by the *Employer* in Tender Data or in an instruction the *Employer* has given before the tenderer enters his Prices.

If there is insufficient space in the Price List which follows, state in which document the Price List is contained.

C2.2 Price List

The Price List is as follows: _____

Item no.	Description	Unit	Quantity	Rate	Price
1	Site establishment				
2	Supply of cabling				
3	Cable Racking (pull and install two 10 pair armoured telephone cables)				
4	Measuring Cable Schedule				
5	Provide AKZ Labelling: Allowed 10% of the cable				
6	Health and Safety				
7	Testing & Commissioning				
8	Site de-establishment				
	The total of the Prices (excluding VAT):				

C3: Scope of Work

C3.1 Works Information

The scope of work is to design and perform modifications on the Employer 400V Switchgear, supply power cable, cable routing designs, cable racking designs, cable accessory design, provide electrical junction box, cable installations, cable termination between the Employer's 400V Switchgear and electrical junction box. The scope also includes modifications on existing parking bays including installation of lighting for parking bays at Lethabo Power Station.

1. Description of the *works*

2.1 SCOPE

The scope of work is to design and perform modifications on the Employer 400V Switchgear, supply power cable, cable routing designs, cable racking designs, cable accessory design, provide electrical junction box, cable installations, cable termination between the Employer's 400V Switchgear and electrical junction box. The scope also includes modifications on existing parking bays including installation of lighting for parking bays at Lethabo Power Station.

2.1.1 Purpose

The objective for the reticulation scope including car port modifications is to prepare for delivery and installation of charging infrastructure (chargers) and electric vehicles which shall be done by *Others* at Lethabo Power Station.

2.1.2 Applicability

This document is applicable to Lethabo Power Station.

2.2 NORMATIVE / INFORMATIVE REFERENCES

Parties using this document shall apply the most recent edition of the documents listed in the following sections.

2.2.1 Normative

1 Green Transport Strategy 2018-2050, November 2022 presentation.
https://www.saboa.co.za/index_htm_files/NDOT%20Green%20Transport%20Strategy%20Presentation

1 Electric Vehicle White Paper November 2023. https://www.thedtic.gov.za?wp-content/uploads/EV-White-Paper.pdf

2 474-13215-Required Operational Capability Report for Gx Fleet Electric Vehicle Project

3 375-172857-Lethabo PS Required Operational Capability Report for Electric Vehicle Project.

4 474-13318-Stakeholder Requirement Definition Report for Gx Fleet Electric Vehicle Project

5 375-172861-Lethabo PS Stakeholder Requirement Definition Report for Electric Vehicle Project.

6 D-DT-0854: Distribution Trenching Standard

7 TMH 16 Volume 2: South African Traffic Impact and Site Traffic Assessment Standards and Requirements Manual

8 816 Transportation Research Record: South African Parking Standards.

9 ISO 15118: Plug and Charge standard for electric vehicles.

10 IEC 61851: Requirements for conductive charging system for electric vehicles.

11 IEC63110: Management of electric vehicle charging and discharging and discharging infrastructures.

12 240-56356396-Earthing and Lightning Protection Standard

13 SANS10142-1 The wiring of premises — Part 1: Low-voltage installations

14 240-53113685 Generation Design Review Procedure

15 240-53114002 Generation Engineering Change Management Procedure

16 240-71432150 Plant Labelling Standard

17 LIM103A Notes on Alpha -Numeric Plant Codification

18 240-56227443 Requirements for Control and Power Cables for Power Stations Standard

2.2.2 Informative

1 240-101864556: Fleet Management Service Procedure

2 32-345 Eskom Vehicles Safety Specifications

3 240-62946386 Driver and Vehicle Safety Management Procedure

2.3 DEFINITIONS

Definition	Description
Electric Vehicles	An electric vehicle is a vehicle that uses electricity as a source of power and electric motors for moving. Electric vehicles cover a wide range of vehicles that used on the road, rail, water, air and space mediums.
Electric Vehicle Major Components	Batteries, Electric motors and Control system, all different depending on the type and use of the electric vehicle.
Charging Infrastructure	An electric vehicle charging infrastructure is a system of charging stations or facilities to recharge electric vehicles. There are fast chargers (expensive Level 3 DC type chargers) used at public and office locations and slow chargers (cheaper Level 2 AC type chargers) used in public and residential areas.

2.3.1 Disclosure Classification

Controlled Disclosure: Controlled Disclosure to external parties (either enforced by law, or discretionary).

2.4 ABBREVIATIONS

Abbreviation	Description
AC	Alternating Current
BEV	Battery Electric Vehicle
CCS	Combined Charging System

CO2	Carbon Dioxide
DC	Direct Current
DOT	Department of Transport
Dx	Distribution Business
GHG	Green House Gas
GTS	Green Transport Strategy
Gx	Generation Business
ICE	Internal Combustion Engine
EU	European Union
EV	Electric Vehicle
LDV	Light Duty Vehicle
ROC	Required Operational Capability
RT&D	Research Testing and Development
SOC	State of Charge
UK	United Kingdom

2.5 ROLES AND RESPONSIBILITIES

Roles and responsibilities are as per the *Employer's* Generation Design Review Procedure[15] .

Contractor

The following minimum roles and responsibilities for the *Contractor* are:

- Fabrication, procurement, construction/installation and commissioning of the *works*, which satisfies the *Employer's* requirements as, specified in the *Works* Information.
- Construction supervision of the *works*.
- Conducting of quality assurance/inspections for the works.
- Conducting design verification of the submitted detail designs.
- Takes full professional accountability and liability for the submitted detail designs, construction drawings and construction *works*.
- Health and Safety of all workers involved on the project
- Identification and monitoring all construction and technical risks on the project
- Compile and submit all documentation and drawings, as specified in the *Works* Information, for review and acceptance.
- All relevant Eskom design standards, procedures and guidelines have been adhered to.

Eskom Engineering

Eskom Engineering will play the role of design authority and ensure that:

- The construction/installation satisfies the stakeholder requirements (i.e. validation of design deliverables against stakeholder requirements).
- Reviews all submissions made by the *Contractor* for acceptance.

- Foreseen technical and construction risks are identified and addressed/challenged with the Contractor.
- Technical and construction supervision provided during construction.
- Provide all required permits for the plant.

2.6 RELATED/SUPPORTING DOCUMENTS

None.

2.7 PROCESS FOR MONITORING

The process will be monitored via the Generation Engineering Change Management [16]. This process will allow relevant stakeholders and management to be informed of all decisions made in the design phase by the relevant system engineer. The maintenance actions of the new structures and systems will be added to the relevant Plant Maintenance Strategies.

1. EMPLOYER'S OBJECTIVES AND PURPOSE OF THE WORKS

The objective and purpose of the *works* is to:

- Provide electrical reticulation infrastructure for the electric vehicle charger.
- Provide new lighting in the parking bays.
- To provide scope of work for refurbishment of the structures and painting of the area in line with the latest standards.

Battery Limits

The project battery limit is from the identified electrical point of supply on the 380V Administration Block Board A, modifications on existing parking bays including installation of lighting for parking bays.

Design & technical requirements

The scope should be read in conjunction with the following Appendices:

Table 1: List of Appendices

Appendix	Title
A1	MV and LV Electrical Reticulation
A2	380V Administration Block A and B Board _ Switchgear Schedule
A3	Proposed Cable Route
A4	Vendor Documents Submission Schedule (VDSS)
A5	Electrical Load List Template
A6	Cable Technical Schedule A&B
A7	Electrical Cable Schedule Template
A8	Example of Electric Vehicle Parking Bay

***Employer*'s Design**

Connection point

Power supply for combo charger shall be sourced from 380V Administration Block Board A (40GA), functional unit GA031, located inside Administration Building 1 Substation Room on the ground floor at Administration Building one (1), as indicated in figure 1. The 380V Administration Block Board A is directly fed from the 11kV Substation North Board A, via 11/04kV, 1250kVA Transformer. The 380V Administration Block Board A is connected to the 380V Administration Block Board B via a bus-section which is normally open under normal operation, refer to drawing number 0.63/210, sheet 6 for electrical reticulation (Appendix A1).

Protection device currently installed on functional unit GA031 is a 3-phase + Neutral, Combined Fuse Switch rated 400A, with 315A rated fuses. Refer to drawing number 0.63/5075 sheet 2 of 5 (Appendix A2) for Switchgear schedule for the 380V Administration Block Board A

Figure 1: 380V Administration Block Board A (40GA)

Parking Bays

Two (2) covered parking bays, which are fully paved have been reserved for charging of two (2) x Electric Vehicles as part of the pilot project, as indicated in figure 2. Two (2) additional parking bays which are adjacent to the parking bays for charging of two (2) electric vehicles have been identified by the *Employer* and reserved for parking of other two (2) Electric Vehicles. The Employer shall be responsible for demarcation of the two (2) parking bays which shall be used for day and overnight parking for two electric vehicles.

Figure 2: Two (2) Parking Bays identified for Pilot Project

For future parking bays requirements, the length and the width for each parking bay shall be 5.0m and 2.5m respectively at a bay angle of 90° for compliance to TMH 16 Vol 2 and the Transportation Research Record 816. The parking bay layout and marking shall be as depicted in Appendix A8.

The length for existing parking bay cover sheets is 6m long, supported from steel poles which are placed 5.5m apart.

Proposed cable route

Proposed cable route have been identified by the Employer for connection of power cable from the 380V Administration Block Board A to supply the battery charger at the parking bays.

- Proposed cable route: Cable route to parking bay via the transfer house.

a) Estimated cable length: 210 meters.

Refer to Appendix A3 or drawing number 0.63/7991 rev 2 for identified proposed cable route from the 380V Administration Block Board A to the parking bays.

System identification

The Low Voltage Switchgear AKZ where the point of supply shall be fed from is as indicated in table 2 below:

Table 2: Low Voltage Switchgear AKZ

#	Descrption	AKZ Code	Circuit number	Fuse Switch rating (A) and Fuse rating (A)	No of phases
1	380V Administration Block Board A	40GA	31	400A and 315A	3 Phase + N

Employer's requirements

The Contractor shall bid on the complete scope for retrofits or modifications on the *Employer* 400V Switchgear, power cable designs, cable routing, racking and accessory design, provision of electrical junction box, cable installations including cable termination between the *Employer's* point of connection and junction box, modifications on existing parking bays including installation of lighting for parking bays. .

System life expectancy

The minimum operating life of the charging station shall be 20 years with minimum warranty period of 2 year. The warranty has an option for extension.

Standardisation and interoperability

The charging station to be installed shall use the commonly used connector's standard in the market. It shall be capable of charging various EV types without the use of adaptors. Figure 3 show various connector types. The charger combo for pilot phase shall consist of 2 x 60kW DC with CCS2 connector type as well as 1 x 22kW AC with type 2 connector. The charger shall be able to charge 2 x Electric Vehicles at the same time.

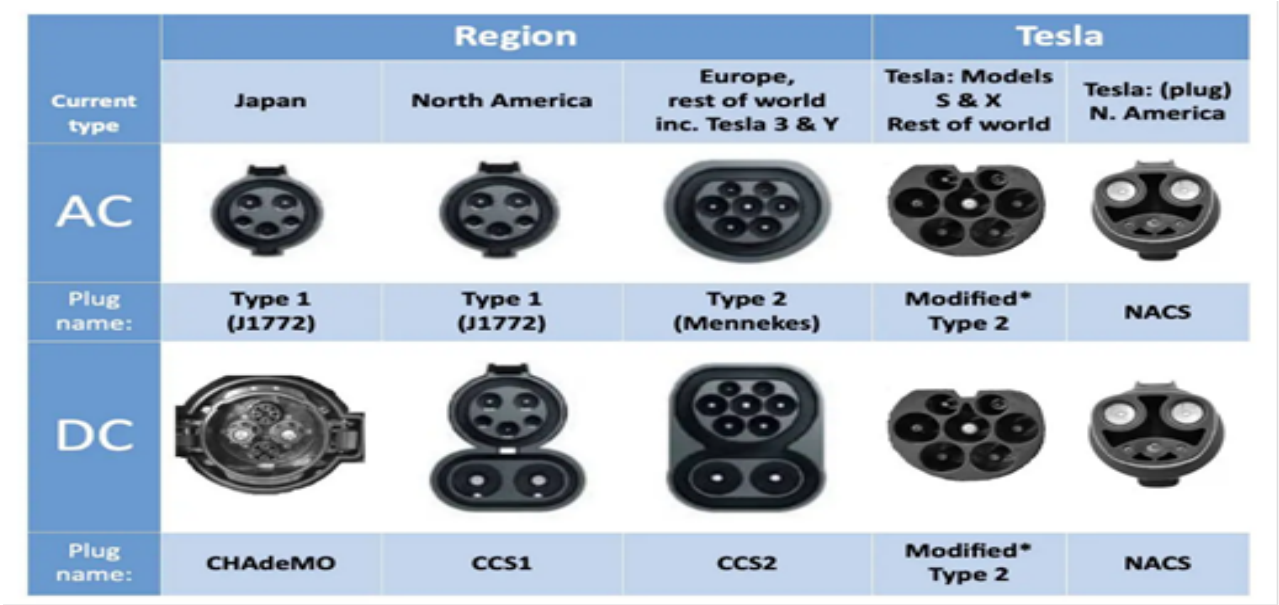


Figure 3: EV charger connector standards

Charger high level specification

Charging station shall have a combination of Level 2 and Level 3 Charger with the following specifications:

1) Level 2 (240V/400V AC):

   b) Suitable for public charging stations, workplace and homes with single and three phase output power 22kW at 32A.

   c) Charge from 5% - 80% capacity in 2 – 4 hours depending on the battery capacity and condition of the battery.

2) Level 3 (150-1000V DC):

   d) Rapid chargers suitable for public charging stations.

   e) The combo charger shall have 2 X 60kW DC outputs with 2 X CCS2 connectors.

f) Charge from 5% - 80% capacity in 30 – 60 minutes depending on the battery capacity and condition of the battery.

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

general requirements

The Contractor provides the whole of the works as defined in this report except where explicitly stated as otherwise.

The Contractor designs according to the requirements of the Employer requirements stated in this report.

The Contractor shall follow the Employer's design Review Procedure and the design is approved before any site work begins.

The Contractor shall perform the following activities as a minimum:

1) Obtain all guarantees from all the Sub-*Contractor*s. These guarantees are handed to the *Employer* once the work is complete.

2) All work is carried out in accordance with Employer, OEM and international standards, procedures, specification, guidelines, policies and codes of practice.

3) All Plant and Materials, and Equipment used in the replacement shall not contain any asbestos.

4) For all modifications: Contractor supplies all modification packages, the modification packages shall include the problem statement, reason for the modification, economic evaluations, benefits to the Employer, drawings (include sketches, diagrams), Contractor customer presentations, spares list, lead time for spares, quotations to perform the modifications, references (including contact details, brochures, history), maintenance regime (including frequency) and associated costs, operating regime, etc. before purchasing the charging station or the works is implemented.

5) The Contractor notes that if the Contractor damages any Equipment, Plant and Materials, the cost of repairing these is for the Contractor's account.

6) The Contractor takes full professional responsibility and accountability for the design of the whole and every portion of the works, whether or not the design work is undertaken specifically in relation to this contract and whether or not the Contractor is directly involved in the design work.

7) It is the Contractor's responsibility to provide a design, which is fit for purpose, in accordance with sound engineering principles and prudent industry practice.

8) The Contractor's professionally registered engineer/technologist, registered with the Engineering Council of South Africa (ECSA), approves the relevant detailed designs.

9) The Contractor shall follow the Employer's design review procedure for all design work to be done.

Electrical scope of work

Low Voltage Switchgear

1) The Contractor is responsible for the design, quality control, manufacture, procurement, transportation, storage on site, installation, testing, commissioning, and handover, including all documentation for the electrical reticulation from the 380V Administration Block Board A up to and including the electrical junction box. The Contractor shall be responsible to ensure that the electrical reticulation is a fully functional system.

2) The Contractor shall re-use and utilize the existing circuit identified on the Employer's existing (380V Administration Block Board A) LV Switchgear to supply the charging station via the electrical junction box.

3) Where the existing circuits cannot be reused, the Contractor is solely responsible for the design, modification and provision of all components required to affect a complete and functional system.

4) The Contractor shall design the functional unit circuits in line with Employer's existing switchgear. The Contractor's design shall not compromise the type test certification and guarantees of existing switchgear i.e., temperature rise tests.

5) The Contractor shall populate, update and submit to the Employer for approval the documentation for this section as prescribed in the electrical vendor document list (Appendix A4) and further utilize the following Employers templates as a basis of design:

   ❖ 240-56227927 Electrical Load List Template in Appendix A5.

6) The Contractor shall ensure that the equipment and systems are designed to interface with the Employer's existing plant and installations.

7) The Contractor shall comply with the electrical requirements of this specification, the Employer's standards, SANS and IEC standards for the electrical scope of this project.

8) All electrical equipment and installations must have a certificate of conformity provided to the Employer.

9) All electrical reticulation that forms part of the scope of this project, the Contractor shall comply with SANS 10142-1.

10) The Contractor shall design, manufacture, factory testing, transportation, delivery to site, installation, site testing, commissioning, and handover, including all documentation for electrical junction box. Minimum ingress protection (IP) for junction box shall be IP55.

LV Cabling and Cable racking

Refer to Appendix A3 for proposed cable route.

1) The Contractor designs, supplies and installs low voltage power cables to supply the junction box which shall be used to supply the charging station. The Contractor indicates the power cable routing, compiles the cable schedules and cable block diagrams and issues to the Employer for approval. The Contractor also supplies and installs the labels for the cables, tests the cables, completes the quality documentation and issues to the Employer for acceptance.

2) The Contractor shall comply to the following standards for all cabling and racking that form part of the scope of this project,

   ❖ Requirements for Control and Power Cables for Power Stations Standard (240-56227443)

   ❖ All cabling shall comply to SANS1507, SANS10198 and SANS 10142-1.

3) The Contractor completes and submits the 240-56227443 Cable Technical Schedule A&B for *Employer's* review and acceptance in Appendix A6.

4) All LV power cables shall be low halogen, armoured, have stranded copper conductors and are of the flame retardant 600/1000V PVC/SWA/PVC type.

5) The electrical cable schedule template (240-56176097) in Appendix A7 to be populated by the Contractor and submitted to the Employer for acceptance before any cabling can be procured.

6) The Contractor supplies and installs all cable accessories such as terminating and jointing kits, cable glands, lugs, bolts, washers and nuts for terminations, sleeves and other ancillary material for fitting the cables into position.

7) The Contractor shall use the existing cable racks in the cable tunnels to lay new cables as far as possible to supply the junction box which shall be used to supply the charging station. Should the space on existing cable racks not be sufficient to accommodate all new cables that form part of the scope of this project, the Contractor to propose modifications to existing cable racks or installation of new cable racks to supply all loads/equipment to ensure a fully functional system. The Contractor designs, supplies and install cable racks and supplementary steelwork for cable racking. The Contractor to submit all documentation for new cable racking or modifications of cable racks for acceptance before procurement or modification of any equipment.

8) The Contractor shall be responsible for digging an additional cable trench (approximately 5m) from existing cable tunnel to the location where the charger or junction box will be installed on the identified car bays. Ths trenche shall adhere to the trenching standard, D-DT-0854.

9) The Contractor shall ensure that the exit of the existing cable trench is sealed to prevent water ingress.

10) The Contractor shall also ensure that the new cable route does not negatively affect foot traffic and water diversion as a downpipe is located at the corner of the building.

Cable Management System, Pull Cards and Documentation

1) The Contractor performs a detailed design for cable sizing, length and route of the cabling. The Contractor compiles and submits cable schedules for acceptance by the Employer. The schedules will indicate the general cable requirements i.e., application, power, fault levels, cable source, cable destination, AKZ details, cable termination details and special routing requirements.

2) The Contractor installs the cables, tests, terminates the electrical plant and completes the cable pull cards. The Contractor is responsible to red line the existing cable block diagrams and submits such diagrams together with the as-built cable schedules as per the cable pull cards to the Employer

Earthing and Lightning Protection

1) The Contractor to design the earthing to interface with the existing earthing system at Lethabo Power Station.

2) The Contractor shall design, install, test and commission the earthing and lightning protection system such that the system satisfies the requirements below:

   a) To limit the touch potentials on structures and equipment and to provide a low impedance return path to limit the damage to equipment by fault currents, during normal or abnormal system conditions.

   b) The installation is protected from lightning by conducting the strike through a preferred path to earth.

   c) All non-current carrying metal parts of the installation is earthed. This comprises earthing of metal conduits, metal cable racks, cable armouring, junction boxes, panels, motor frames, switchgear enclosures and metal enclosures for motor controllers, frames, metal enclosures for various electrical equipment, electrically operated equipment, main support structures, reinforcing etc.

   d) Provide earth fault current path that enables the electrical protection to prevent or, mitigate plant damage;

   e) Protect plant and people against the effects of lightning;

f)Protect electrical components against incoming surges;

g) Provide a path for the dissipation of electrostatic discharge; and

h) To provide a reference point for electrical signals.

3) The Contractor shall comply with the 240-56356396: Earthing and Lightning Protection Standard for earthing and lightning protection scope of this project.

Cable racking and bonding

The Contractor verifies the electrical continuity of the existing cable racks that will be affected by this project. The Contractor ensures that all cable racks that are part of the scope of this project are connected to existing earth mat.

Lighting requirements for parking bays

The Contractor shall perform exterior lighting design for the two (2) parking bays identified for installation of charging infrastructure, in accordance with Eskom Generation Power Station Lighting and Small Power Installation Standard (240-55714363), and SANS 10389-1 (Artificial lighting of exterior areas for work and safety). LED strip lights shall be considered for decorations on the parking bays. Power supply for parking bays lighting shall be sourced from the Lighting Distribution Boards located on the adjacent Transimission Building.

Civil and structural requirements

Current Infrastructure

The carport designated for the project is situated adjacent to the 275kV yard building. It is constructed using structural steel components, with square section tubular columns measuring (76 x 76 x 2 mm) and cross members comprising of lip C-channels (150 x 50 x 20 x 2 mm). The overall dimensions of the carport are approximately 5500 mm (width) x 5500 mm (length) x 2400 mm (height). The roofing consists of galvanized IBR sheeting.

Figure 1: Carpart earmarked for the project

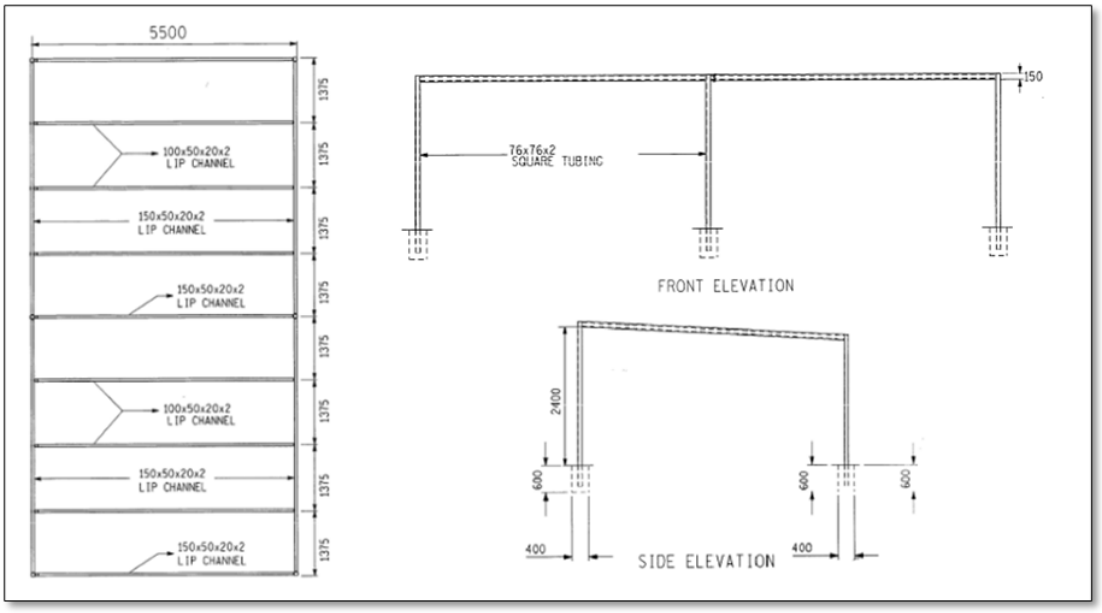


Figure 2: Carport details

A visual assessment was undertaken on the structure and the following minor defects were observed:

- Delimation of the corrosion paint.
- Loss of jointing material in concrete pavers
- Water stains at the riverts

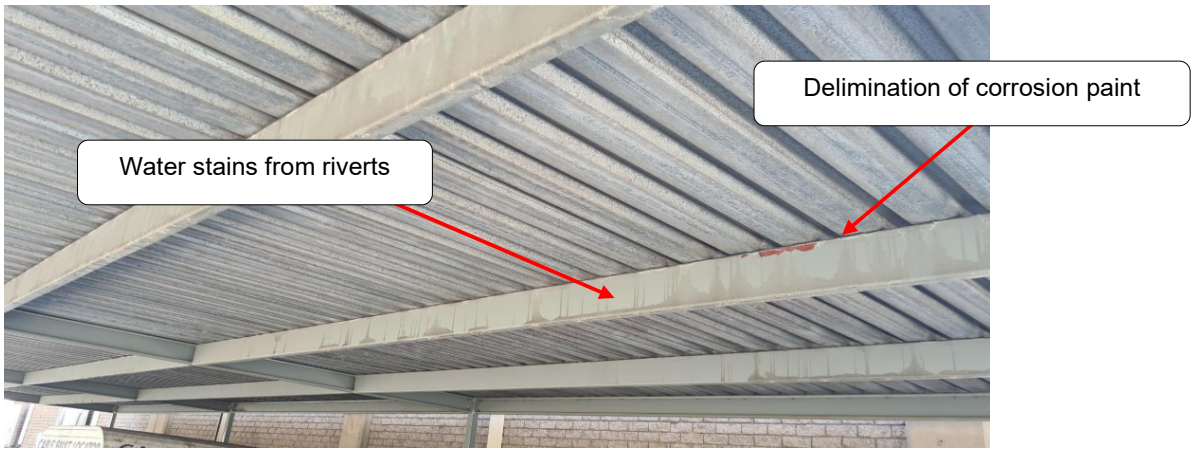


Figure 3: Overall condition of carport

Figure 4: Lose of joint material

General Requirements

1. The *Contractor* takes full professional accountability and liability for the design and construction/extension of the carport and charger concrete plinth, as described in this technical specification.
2. The *Contractor* is required to confirm and verify all information supplied by the *Employer* prior to being using in the design and construction *works*.
3. It is the *Contractor's* responsibility to provide design and construction activities and/or works, which is fit for purpose, in accordance with sound engineering principles and prudent industry practice. The *Contractor* and his Subcontractors adheres and perform the works in compliance with legislation, rules and regulations, applicable national and international engineering codes, environmental standards, other applicable standards, statutory requirements and this technical specification.
4. No deviation from this technical specification and its referenced documents is permissible without documented acceptance from the *Project Manager*. The *Contractor* includes a list of exceptions and/or clarifications as part of his tender. This list of exceptions and/or clarifications includes the section deviated from as reference number, the requirement in question and a detailed explanation of the deviation.
5. Any discrepancy or ambiguity between the *Employer's* Specifications or requirements is to be immediately brought to the attention of the *Project Manager* for clarification.
6. Where the *Contractor* requires additional information to conduct the *works*, the *Contractor* notifies the *Project Manager* of the *Contractor's* requirements, a minimum of one (1) week before continuing with the *works*.
7. All documentation, as specified in this technical specification, forms part of the works and is supplied to the *Project Manager* by the *Contractor*. The *Employer* reserves the right to issue the *Contractor's* designs or drawings to other *Contractors* for purposes of maintenance, spares, verifications, modifications in future or any other purposes required by the *Employer*. The *Employer* has total rights to use the supplied information as the *Employer* requires. The *Contractor* notes that all drawings and other documentation supplied to the *Employer* become the property of the *Employer* upon completion of the *works*.

Carport

the preferred parking is already shaded, refurbishment is required to ensure that the structure meets the minimum stated requirements

The carport completely covers the two adjacent parking bays and a charging station ensuring that the charging station is protected from the rainfall as well as stormwater runoff.

Loose of fines in the concrete paving due to drainage.

Installation of gutters and downpipe to direct runoff

Signage and Painting

The parking bays are painted blue complying with 240-103414344 Summary of Corporate Identity Manual indicating that the area is designated for charging of electric vehicles. The *Contractor* adheres to the code listed in Table 2 when requesting the blue colour paint from Suppliers

Table 2: Blue colour code

Spot colour	Process colour (CMYK)	RGB colour values (for electronic applications)
PANTONE 287 C	100C 70M 0Y 10K	0R 56G 150B

The paint is of retro-reflective type and in accordance with SANS 731: Road Markings.

Clear signage is placed to designate the EV charging bays.

Parking bays are painted with suitable Eskom colours and EV markings indicating that the area is designated for the charging of electrical vehicles only. Refer to Figure 2 for painting and EV signage.

Cable Trench

Any trenches required for the connection of the electrical cable to the charging station, the Contractor designs and constructs a suitable concrete cable gallery or sleeve that is compatible with existing Eskom infrastructure for electrical cables.

b) Cable trenches, galleries or sleeves required to house power cables are designed and constructed to comply to Eskom Standard D-DT0854 Distribution Cable Trench Details.

c) Before any underground excavation commences, scanning is undertaken to identify any existing underground services. Should the underground services exist in the affected area, the Contractor notifies the Employer as soon as practically possible. Furthermore, the Contractor produces drawings depicting the location of the existing services as well as the new location of the services should they be rerouted, with all necessary details such as type of service detected, direction, length, location etc.

d) Backfill excavated trenches with same material and restore the surface to original condition. Cable markers installed above ground indicates the cable route as per cable marker drawing D-DT-8012.

LV cable trench details shall be in accordance with D-DT-0854. The Civil Engineer approve any variations from the depth specified in D-DT-0854. Where the presence of existing services makes it necessary to increase the depth of the trench, the trench shall be returned to nominal depth as soon as is practical.

f) Where the presence of a number of services makes it necessary for deep trenching for a prolonged distance, measures are taken to ensure the required cable rating is maintained by back filling with soil having low thermal resistivity (that has been tested in accordance with SANS 10198-5 or by increasing the spacing between cables).

g) Where a change in trench level is necessary, the bottom of the trench rises or falls gradually and smoothly. Trenches are kept as straight as possible and the radius of bends are tight, however never less than the minimum bending radius of the cable.

h) The material excavated from the trench are placed adjacent to the trench leaving a walkway of at least 500 mm on both sides of the trench. Where the topsoil is covered with gravel, the *Contractor* makes provision to keep the excavated material and the gravel separated. All surplus material, from whatever source, are disposed of by the *Contractor*.

i) Excavated trenches that are accessible or adjacent to public roads or thoroughfares, or where the safety of persons may be endangered, are adequately and effectively protected by a barrier or fence of at least one metre in height and as close to the excavation as is practicable. Warning or danger tapes are not acceptable. Warning illumination or any other clearly visible boundary indicators are provided at night or when visibility is poor.

j) Before installing bedding soil, the trench bottom is levelled, free of loose stones and lightly compacted.

k) The trench bedding and blanket soil around the cable are in accordance with SANS 10198-8, The selection, handling and installation of electric power cables of rating not exceeding 33 kV − Part 8: Cable laying and installation requirements for bedding.

l) The Project Engineer inspects all trenches to confirm compliance with Standards and specification laid out in the document.

m) A sieve having a mesh size of no larger than 12 mm may be used to sift the excavated soil. Alternatively, suitable bedding and blanket soil having the specified soil thermal resistivity of less than or equal to 1, 2 Km/W are imported.

n) The trench backfilling is in accordance with SANS 10198-8. NOTE: SANS 10198-5 contains descriptions of the various types of soils and their respective suitability for cable surround soil (bedding and blanket soil) and backfill material.

o) The bedding soil are installed and compacted prior to cable installation. Blanket soil is compacted using hand compaction tools. Backfill material are compacted in layers of maximum thickness 300 mm. The level of compaction (see D-DT-0854) is measured at appropriate intervals using an approved method.

p) NOTE: Initial testing of in-situ soil to be carried out by an accredited independent soil testing laboratory. There after a density gauge in conjunction with a dynamic cone penetrometer (DCP) may be used for further testing to ensure the adequate level of compaction is achieved when backfilling.

q) Any damages resulting from the works is repaired/made good by the *Contractor* at his own cost, to the satisfaction of the *Employer*. The *Contractor* supplies a method statement for the repair works to the *Employer* for review and acceptance prior to conducting the repair works.

The selected charger will be installed on a concrete plinth.

Foundation

Merging of the concrete pavers with the plinth

Installation of steel or concrete bollards in front of the charger.

Additional Requirements

1) The mass and dimensions of the charging station is currently unknown. The Contractor is required to conduct a structural verification of the supporting infrastructures (e.g. concrete floor slab, beams

and columns) for the charging station. The aim of this exercise is to ensure that the structural integrity of the supporting infrastructure is not compromised by the static and dynamic loads from the charging station.

1) If the structural integrity of the supporting infrastructure is found to be compromised, based on the structural verification/assessment, the Contractor will be required to design new supports and/or modify the existing supports to accommodate the new equipment and/or components.

2) The Contractor takes full professional accountability for any modifications made to the existing structure.

3) In the event that modifications to the support infrastructures are implemented, the Contractor is responsible for producing as-built drawings for such areas/locations.

4) All structural designs/modification are to be in accordance with 240-56364545 - Structural Design and Engineering Standard as well as all other standards and specifications referenced in this Specification.

5) All designs or modifications are required to be designed for the remaining life of Lethabo Power Station, which is approximately 23 years to the end of 2046.

6) Concrete plinths where required will be installed for mounting or fixing of chargers.

7) Compacting and reinstatement of paving and,

Painting of two (2) electric vehicle parking bays identified for installation of charging infrastructure

1 Management and start up.

Meetings will be held weekly between the Project Manager and the *Contractor*, and any person instructed by the Project Manager to attend. The *Contractor* is represented at each meeting by the appropriate member of the staff. Additional ad hoc meetings may also be called to address urgent issues. The venue for these meetings is as determined by the Project Manager.

The Project Manager will, as and when necessary, require the *Contractor* to attend meetings with *Other* Contractors on the Project. This requirement does not constitute a compensation event.

The Contractor reports the overall progress and as a minimum requirement, the following is addressed:

1. *Contractor's* current activity progress and planned finish dates
2. *Contractor's* planned start and finish dates for the works
3. *Contractor's* and Project Manager's programme agenda compared for problematic differences
4. Current and projected manpower by class
5. Health, safety and quality control issues
6. The progress of any other relevant activities
7. To discuss any technical or commercial issues
8. Problem areas or concerns

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

Meetings Schedule

Title and purpose	**Approximate time & interval**	**Location**	**Attendance by:**
Risk register and	Weekly	Venue determined By	Relevant appointed

compensation events		the *Project Manager*	members of a Risk or and Compensation event committee
Overall contract progress and feedback	weekly	Venue determined By the *Project Manager*	*Employer*, *Contractor*, *Supervisor*, and *Other*s as determined by the *Project Manager*
Safety Meetings	Monthly	Venue determined By the *Project Manager*	*Employer*, *Contractor*, *Supervisor* Safety Officers and *Other*s as determined by the *Project Manager*

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 and Action Items, including an attendance 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 Documentation control

The *Contractor* implements a comprehensive document management system for the control of all documents, revision status “as-designed”, “as-manufactured”, “as-commissioned” and “as-built” plant status for the EV Charging system. In this regard the *Contractor* ensures that the documentation supplied to the Project Manager as tie-in information, accurately reflects the Contract requirements.

The *Contractor* submits all documentation on a formal transmittal form to the Project Manager. All correspondence is sequentially numbered. All documentation and drawings standards to comply with the latest 240-86973501 - Eskom’s Engineering Drawing Standard Common Requirements; 240-54179170: Classification and designation of technical documentation and Documentation Management Standard, 32-644 and respectively.

The documentation and drawings supplied is in South African English and SI units are used. The *Employer* does not accept scanned electronic copies of documentation or drawings; however, the original documentation with signature is scanned for electronic purposes.

The documentation is submitted in loose leaf binders to ISO format and normally A4 size. The use of oversize pages is kept to a minimum and does not exceed page height of an A4 unfolded. Fixings are “D” ring and are of the snap close type. Post binders or other fixings are not acceptable. Binders do not exceed 80 mm in overall thickness. The document identity appears on both the front cover and on the spine.
Documentation is of good quality, prepared by suitably qualified personnel and contain the general arrangement drawings, installation drawings and instructions, operating and maintenance instructions for all components.

Detailed parts lists are accompanied by exploded view type unitised drawings clearly detailing the part, technical descriptions of the plant and material and component parts, spare part ordering instructions and type test certificates.

3 Health and safety risk management

The *Contractor* shall comply with the Health and Safety requirements contained in the following rules and procedures:

1) 240-62196227 Life Saving Rules
2) 32-727 SHEQ Policy
3) 32-726 SHE Requirements for Eskom Commercial Process
4) 240-62946386 Driver and Vehicle Safety Management Procedure
5) 240-73418055 SHE Specification

The *Contractor* shall comply with the health and safety requirements contained in OHS Specification and the approved safety file. *Employer* reserves the right to review the OHS Specification to address the Operational risks and the *Contractor* shall comply with the latest SHE Specification as amended at no cost. The OHSACT 37(2) agreement must be signed by *Employer* and *Contractor*'s representatives.

The *Contractor* OHS professional must conduct internal audits at planned intervals to monitor compliance to the contractual health and safety requirements. The *Employer* representatives will conduct inspections at planned intervals to monitor compliance to the contractual health and safety and legal requirements. The *Contractor* may be selected during internal and/or external Eskom Power Station audits to verify compliance to legal and contractual OHS requirements. The Contract Custodian will communicate this at relevant time periods and the contractor shall avail themselves for this audit.

Below are minimum Safety requirements to be adhered to by contractors/service providers, to gain access to Eskom Power Stations:

1 Valid Medical fitness certificate
2 Clearance from SAPS or accredited service provider linked to SAPS AFIS system not older than thirty (30) days
3 Identification document (RSA ID or equivalent)
4 National Drivers Licence (applicable to drivers)
5 Adherence to the Eskom Life-saving rules 3 Buckle up and 4, Be Sober
6 Applicable risk based Personal Protective Equipment
7 Valid letter of good standing (COIDA or equivalent). Access to site to perform work will be denied should the Letter of good standing be expired.

The *Contractor* who is working alone and not eligible to register with the compensation fund, shall provide Eskom with the member benefit statement of the insurance cover which include life and disability cover to the minimum fund of R500 000.

Induction will only be done after the above documents have been submitted and accepted by *Employer* representative. *Contractor* provider Management Key Performance Indicators (KPI's)

1. Maintain Health and Safety file and compliance to the health and safety plan, Eskom OHS specification and applicable legislation as amended.
2. Always maintain good housekeeping where the task is being executing and/or within the area of responsibility.
3. Contractor must develop, implement and monitor near miss reporting strategy/ programme (reporting of near misses).
4. Comply to Planned Job Observation, BSO, Visible Felt Leadership programmes.
5. Maintain Zero Fatalities for the duration of the contract.
6. At any given point, the OHS performance must be within the lost time injury (LTI) tolerance level as amended.
7. All incidents must be reported immediately or before the end of shift that the incident took place.
8. All incident investigations must be completed within 10 days of the occurrence of an incident.

9. Incident investigation recommendations shall be closed within the recommended time frame recorded in the Incident investigation report.
10. Close audit findings as per the recommended time frames as per audit report or action raised in SAP QIM.
11. Close Non-conformance as per the recommended time frames in SAP QIM.

Note: Monitoring of the above mentioned KPI's will take place through regular audits and inspection.

On completion of the project/contract, Eskom team (led by the Contract custodian) involved in the project together with the Contractor shall conduct the final meeting to identify the gaps prior to the contract close out. Before the final invoice is paid/processed, the Contract custodian shall ensure that the below requirements are met:

1. Close all incidents and audit findings.
2. Clean the respective yard and ensure good housekeeping where the contractor was working.
3. Contractor shall submit safety statistics and a safety file to Eskom BU Safety department for closeout and filling.
4. Completion of a closeout report (Annexure D form as per 32-726) to close the contractual work.

The function of the 37(2) Agreement is primarily to indemnify *Employer* from any acts or omissions by its *Contractors* and its employees in contravention of the OHS Act.

This means that contractors/suppliers are deemed to be employers, their employees are not deemed to be employees of Eskom and acknowledges that is solely responsible for its employees, its appointed contractors, agents and the like, while performing work for or on behalf of Eskom.

Every site where the *Contractor* is performing work, a 37(2) agreement shall be signed by the *Employers* representative and the C*ontractor* representative 16(1)/2 appointee.

8 Environmental constraints and management

The *Contractor is* required to ensure that all the Works and services conducted in terms of this contract conform to the Eskom SHEQ Policy (32-727) and SHE Requirements for Eskom Commercial Process (32-726).

9 Quality assurance requirements

The *Contractor'*s Quality Management System shall comply with the requirements of ISO 9001 (latest applicable edition).

Supplier QM Specification Category 3 Quality requirements shall apply for contract duration.

A quality inspection of the Works and services shall be conducted, at the *Employer's* discretion, by the *Employer* or the *Employer's* representative at various milestones.

10 Programming constraints

The *Contractor* submits as part of its tender response a Level 3 programme which becomes the first Accepted Programme that contains the following as a minimum:

a) The Key Milestone Dates
b) The access dates

c) The detail 'Method Statement' on how the Contractor plans to achieve the Key Milestone Dates and the access dates.
d) Interface with Others;
e) Interface with the Employer;
f) The date of Site establishment;
g) Show all the critical paths;
h) The *Contractor* must ensure that his programme contains sufficient float in order for the Contractor to add interface and alignment with the *Employers* and Others;
i) Other factors, information, methodologies, detail and dates which the *Contractor* believes are necessary for achievement of the interface with Others; Key Dates, Completion Dates and access dates.

The *Contractor* submits a revised programme during the Contract in accordance with time period provided in clause 32.2. This revised programme must contain the following:

a) All information required as [stated above];
b) the services and work (programs) of all his Subcontractors and suppliers;
c) the design schedule.
d) the construction schedule.
e) the planning schedule.
f) the construction and manufacturing schedule.
g) the commissioning schedule.
h) The Resource Schedule

The *Contractor* submits an updated programme every week during design, 2 weeks during manufacturing, every week during Installation and commissioning. The updated programme is not a revised programme submitted in terms of clause 32 of the Contract. Notwithstanding anything to the contrary in the Contract, Works Information or expressed at any meeting or in any minute of a meeting, the Accepted Programme is not altered by the *Employer*'s involvement in discussing the updated programme. All references to the requirements for a revised programme will be inferred as references to the requirements for an updated programme.

11 Invoicing and payment

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

The *Contractor* shall address the tax invoice to Eskom Holdings SOC Ltd and include on each invoice the following information:

- Name and address of the *Contractor* and the *Project Manager.*
- The contract number and title;
- *Contractor*'s VAT registration number.
- The *Employer*'s VAT registration number 4740101508.
- Description of service provided for each item invoiced based on the Price List;
- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;

12 Insurance provided by the *Employer*

The insurance policies and procedures will form part of the Contract Data and any reference to this will be contained in the Contract Data.

13 Engineering and the *Contractor*'s design

Refer to 375-172862 Lethabo PS Electric Vehicles Pilot Project Installation of Charging Station Technical Specification Report.

14 *Employer*'s design

Refer to 375-172862 Lethabo PS Electric Vehicles Pilot Project Installation of Charging Station Technical Specification Report.

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

Refer to 375-172862 Lethabo PS Electric Vehicles Pilot Project Installation of Charging Station Technical Specification Report.

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

16.1 Review process

The *Contractor* is made aware that all documents or designs submitted for review to the Employer for acceptance requires a process of review as stipulated in the Eskom Engineering Change Management Procedure (240-5331402). This process consists of:

a) Submission of the tender returnable
b) Technical Evaluation
c) Contract Award
d) Submission of Detail Design by *Contractor*
e) *Employers* Project Design team reviews
f) Updates Detail Design review by *Contractor*
g) Detail Design Scope Freeze review
h) Procurement Schedule of material
i) Factory Acceptance Tests
j) Installation, Implementation
k) Commissioning
l) Handover and Final acceptance by the *Employer*

16.2 Time Required for Acceptance of Designs

Not later than four working weeks after receipt, the Project Manager returns one copy of the drawing marked "Accepted"; "Accepted as Noted" or "Not Accepted", as may be appropriate. The notations "Accepted" and "Accepted as Noted" authorize the *Contractor* to proceed with the manufacture of the Plant covered by such drawings subject to the corrections, if any, indicated thereon. Where prints or drawings have been "Not Accepted" or "Accepted as Noted" the *Contractor* makes the necessary revisions on the drawings and submit further copies for acceptance in the same procedure as for the original submission of drawings. The contractor issues the *Employer* with a Design Review Sheet (DRS) to complete with every submission. Every revision shows by number, date and subject in the revision block on the drawing.

17 Other requirements of the Contractor's design

The *Contractor* provides all plant, equipment, materials and services needed to execute all work necessary to fulfil all requirements specified in this scope. Furthermore, the *Contractor makes* provision for the following:

1. All plant materials are new;
2. All electrical installations of 220V and above are performed by a qualified electrician.
3. All new electrical cabling must be certified by the *Contractor's* electrician issuing a certificate to prove that it has been tested.
4. The *Contractor* provides a commissioning engineer during cold and hot commission of the LV system. The commissioning engineer ensures all relevant tests are performed to ensuring a successful handover to the *Employer*.
5. All existing plant interfaces are to be considered and verified during the design.
6. Newly installed equipment are labelled and codified according to *Employer's* requirements.
7. All arrangement drawings, schematics, wiring diagrams, operating and maintenance manuals, plant, equipment, cabling, panels and signals utilises the RDS-PP Key Part and Coding Standard. The system is applied from the design stage and cross referenced to all arrangement drawings, schematics, wiring diagrams, manuals and where practical to spare parts lists/manuals.
8. All codes are unique and verification by the *Employer* is done prior to hand over.

The *Contractor* submits all technical documentation such as bill of materials, wiring diagrams, schematics, drawings and certificates etc. for acceptance by the *Employer* prior to manufacturing of the EV Charger. The *Contractor* submits hardcopies plus an electronic copy of all documentation listed in sections below.

Refer to 375-172862 Lethabo PS Electric Vehicles Pilot Project Installation of Charging Station Technical Specification Report.

17.1 Detail Design Phase

After *Contract* Award, the *Contractor* performs the Detail Design in accordance with *Employer's* requirements presented by Typical Schematic Diagrams and Schedules. The designs are agreed with the *Employer* to achieve Design Freeze status.

17.2 Detail Design Freeze

The *Contractor* submits as a minimum the following data in neat files for acceptance by the *Project Manager* before the Detail Design Freeze status can be declared.

There are different engineering phases where the *Contractor* requires acceptance by the *Employer* before commencing to the next phase. Manufacturing acceptance will only be given to the *Contractor* upon completion of the Detail Design phase. These phases must be accepted by the *Employer* sequentially as listed below;

The *Contractor* submits the following as a minimum to achieve Detail Design phase:

The final accepted drawings of the complete EV Charger system including plant interfaces.

1. Completed Relevant Technical Schedules A and B
2. Deviation Schedule
3. General Arrangement Drawings of the EV Charger and component circuit layout and feeder circuit (this must include all the wire numbers, termination numbers and MCCB size);
4. Component Schedules or Bill of Material
5. Technical Data sheets of components
6. Technical Manuals

7. Test Certificates
8. Cable Schedule according to the *Employer* format;
9. AKZ coding, components descriptions, etc;
10. Termination schedules and cabling block diagram;
11. All calculations of all power cable requirements;
12. Design calculations of protection equipment;
13. Preliminary LV MCCB protection settings for commissioning; if available
14. FAT procedure to be used; if available
15. Operating philosophy;
16. All system technical and functional descriptions;
17. Civil engineering drawings (General arrangement drawings;
18. Material datasheets;

(Note: All the requirements mentioned above in the detail design phases will be used for acceptance)

17.3 Implementation Phase

The *Contractor* submits the following as a minimum to achieve Implementation phase:

1. Completed and signed off FAT defects lists;
2. Two identical sets of marked up drawings to be used for site installation;
3. Completed and signed of FAT test reports;
4. Site establishment completed;
5. A complete on-site inspection check list to be completed immediately after delivery;
6. Authorised site acceptance testing procedures.
7. Equipment transporting & off-loading work packages.
8. Cabling trenching, installation and testing work package.
9. Civil work package; method statement and QCP's
10. Cold Commissioning work packages.
11. Hot Commissioning work packages.
12. All relevant QCP steps signed off by the *Contractor* where applicable

17.4 Configuration Management

All plant codification must be done in terms of the relevant plant Key Part Standard and Coding Standard relevant to each site. Coding of plant are finalised and completed during Detail Design phase and the *Employer* will assign a coding technician who will interact with the *Contractor* in coding the plant. It is the responsibility of the *Contractor* to consistently apply the AKZ codes throughout the rest of the technical documentation.

It is the responsibility of *Contractor* to manufacture and install AKZ coded equipment's labels. Labels are manufactured and installed according to 240-71432150 Plant Labelling Standard. *Contractor* will label all AKZ coded equipment. The *Employers* Coding Technician shall facilitate base-lining of all equipment lists, and only baseline equipment lists shall be used as a basis for the production of labels. The Abbreviation Standard for Labelling of Plant at Power Stations (LIM103) shall be provided to the Contractor as a reference for the creation of equipment lists. Coding and labelling of components inside electrical panels shall be done by the *Contractor*.

17.5 Warrantee period

1. The *Contractor* clearly states, in writing, the warrantee period on their product and the components supplied.

2. It is to be clearly stated in writing what the limitations in product support are beyond the specified warrantee period and what options are available to be considered as well as the cost involved regarding support beyond the warrantee period.

3. Beyond the warrantee period, the *Contractor* still has the ability to do repairs on faulty components. If this is not possible then the *Contractor* provides an exchange policy to the *Employer* where faulty equipment can be exchanged for new equipment at a discounted price to the *Employer*.

4. During and beyond the warrantee period the faulty equipment are to be investigated by the *Contractor* and a failure report provided to the *Employer* stating the reason for failure,

5. The *Contractor* plans for a visual inspection at a time suitable to the Employer, approximately one year after completion date.

6. The *Contractor* inspects the *Works* on or before the defects date and provides the *Employer* with an inspection report.

7. The *Contractor* liaises with the *Employer* three months prior to the defects date to confirm availability of the EV Charger system.

The *Contractor* corrects all defects and latent defects identified before the defect's correction period

18 Use of *Contractor*'s design

The *Employer* may use and copy the *Contractor*'s design for any purpose connected with construction, use, alteration or demolition of the *works.*

19 Equipment required to be included in the *works*

The *Contractor* provides all materials, tools, Equipment and or machinery in order to complete the *Works*.

20 As-built drawings, operating manuals and maintenance schedules

20.1 General

The original as built accepted version of all documents and drawings of the *Works* are handed over to the *Employer*. The *Contractor* provides documentation in the electronic media using Microsoft Office and "searchable" PDF format. The *Employer* allocates numbers to the documentation and drawings which the *Contractor* indicates on the documentation and drawings. The *Contractor* uses pre-approved templates provided by the *Employer* for all documentation and drawings required.

The *Contractor* submits all technical documentation and drawings for acceptance to the *Employer* prior to manufacture. The *Contractor* submits as per Schedule A hardcopy files plus an electronic copy of information on a hard drive of all documentation indicated in the paragraphs to follow.

20.2 Drawings

All drawings comply with the Eskom Engineering Drawing Standard 240-86973501– Common Requirements In conjunction with the electronic DGN copies the *Contractor* also provides a merged set of *.pdf electronic copies upon first issue and each time drawing updates are required. All drawings are signed and the revisions noted as per Employer's specifications.

All detail design drawings have the pre-approved title blocks and borders as provided by the Employer. The Employer provides samples of the pre-approved title blocks to be used by the Contractor. The *Contractor*

completes the title block information as per drawing standard listed. All drawings are submitted to the Project Manager for acceptance.
The *Contractor* produces as build drawings within 4 weeks of site acceptance tests and submits to the Project Manager for his acceptance.

The *Contractor* produces the following types of drawings where applicable:

a. Cover sheet
b. Index sheet
c. List of symbols
d. List of components with values, tolerances, ratings, type numbers, purchasing specification numbers, manufacturer and circuit reference numbers
e. General layout drawing of the proposed panels,
f. Single line diagram,
g. Block diagram of the system,
h. Panel internal wiring drawing, including cross referencing with wire numbers
i. Termination schedule (all connections are specified)
j. Cable block diagrams where required,
k. Updated redlined drawings of the *Employer* as per 7.2.

The *Contractor* is liable for updating drawings until the drawings reflect the as built status of the plant after the final commissioning of the last unit when the Employer has signed off and accepted the final “As Built” state of the drawings.

At Hand-over the *Contractor* provides two full sets of as-built documentation to the *Employer*. All documentation, including reports, manuals, etc. is in the English language.

20.3 Maintenance and operating manuals

1. All manuals are specific to EV Project.
2. All design information forming part of the Technical Specification is included in the manuals.
3. All documentation including drawings, operating and maintenance instruction manuals is uniquely identified and cross-referenced with all related documents.
4. The manuals are complete with:
    a) Power station name and order number;
    b) Content list;
    c) List of reference drawings;
    d) Details of all components.
5. The *Contractor* ensures that the manuals/files are complete making use of the following information represented as a minimum:
    a) Details and descriptions of all hardware and software
    b) Design calculation sheets
    c) Settings and configurations sheets
    d) Detailed product descriptions and features
    e) System control philosophy
    f) System parameters and models
    g) Datasheets of all components used
    h) Recommended spares lists
    i) Operating, maintenance and testing requirements
    j) Full system maintenance program
    k) Installation procedures of each component
    l) Alarm descriptions and responses procedures

m) Tests certificates
n) Certificates of compliance to international standards
o) Routine test results reports
p) Commissioning test results reports
q) Training information
r) Technical tender submission information

6. Any special instructions pertaining to storage of spare parts or to their shelf life are included in the manual.
7. All drawings required for component location, dismantling, and re-assembly for maintenance is provided in the manual.
8. All special tools required for maintaining and operating the plant and material are identified in a schedule and described in the manual.
9. Alarm response card needs to be populated by the *Contractor* for the *Employers* acceptance

21 Supplier Development, Localisation and Industrialisation

The *Contractor* complies with and fulfils the *Contractor's* obligations in respect of the Supplier Development, Localisation and Industrialisation in accordance with and as provided for in the *Contractor*'s SDL&I's Proposal stated below:

- Through its Corporate Social Investment (CSI) initiative, invest in the local Technical, Vocational Education and Training Colleges in the vicinity of Eskom's designated Power Stations. Preference will be given to the training of Electricians.

The *Contractor* shall keep accurate records and provide the *Project Manager* with reports on the *Contractor*'s actual delivery against the above stated SDL&I criteria. The Contractor shall submit SDL&I (Skills Development or CSI) reports on a quarterly basis.

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

22 Plant and Materials

22.1 Quality

The *Contractor* procures, fabricates and delivers all the material necessary to complete the *Works*. All structural and constructional material is new and of the best quality, of the class most suitable for the purpose specified and governed by the following internationally recognised standards: ASME, DIN, BS, IEC and SANS. Other standards are submitted to the *Project Manager* for approval. Furthermore, all such materials are capable of withstanding the variations of temperature arising under working conditions without distortion or deterioration or the setting up of undue strains in any part, such as to affect the efficiency and reliability of the EV Charger System. The material and the material inspection and test plans are based on the same standard.

22.2 Contractor's procurement of Plant and Materials

The *Contractor* is responsible to procure all plant and materials that is required for them to complete the *Works.*

22.3 Spares and consumables

A critical and recommended spares list must be supplied and is priced separately where a fixed functional EV Charger assembly design is provided. All basic routine maintenance spares are locally available. The *Contractor* ensures that all critical spares are available during commissioning to prevent any delays due to

equipment failure. The availability of spares is guaranteed for a minimum period of five years from completion of the whole of the *Works.*

A complete recommended spares list includes the following details:

- Description
- Part number
- Special storage requirements
- Replacement part or routine maintenance part
- Quantity
- Cost
- Lead time
- Supplier full contact details and address

A recommended Spare list is populated in the Schedule A; Appendix B, this makes reference to mandatory and recommended spares recommended by the *Contractor*.

23 Tests and inspections before delivery

The *Contractor* shall provide a testing / commissioning program and procedure to be submitted 4 weeks prior to the test/commissioning commencing for acceptance by the Project Manager. All tests will be witnessed by the Eskom Engineer and/or Supervisor and therefore the *Contracto*r ensures that the Project Manager is timeously informed of when and where the tests and inspections will occur. All tests and commissioning are conducted as per National and Eskom Standards.

23.1 Factory acceptance testing (FAT)

The *Contractor* must conduct pre-checks and inspections before the *Employer* is notified for inspection/FAT. *Contractor* gives notice period of no less than ten (10) days (SA) prior to the date for the FAT unless agreed for an earlier date with the Employer. The *Contractor* supplies one (1) copy of all test certificates/data sheets and a procedure prior to FAT. This inspection entails a full system check (includes wiring checks) to ensure compliance with this specification, contract drawings and other applicable standards. The system functionality is to be demonstrated by the *Contractor* to the Project Manager/Supervisor during Factory Acceptance Tests at the Contractor's facility for the Charger assembly.

The following tests (checks) are conducted by the Contractor as a minimum, but not limited to and witnessed by the Project Manager/ Supervisor, Lead Engineer and or site representative:

- Dielectric test of auxiliary wiring and control circuitry;
- Dielectric tests of power circuit, bus bars and cables.
- If applicable, current transformer test to prove the ratio, polarity, resistance and magnetising curves;
- Check the nameplates, connections, torque all bolts and nuts on power cabling that will not require loosing and refastening on site;
- Functional tests on circuitry, and the indication circuitry (checks include fuse/mccb ratings, labelling, ferrule numbers, crimping and tightness of all connections including lugs);
- Calibration checks of all voltmeters and ammeters to prove their operation and accuracy class;
- Power Supply checks
- Alarms and indication checks
- Power electronics checks and tests
- Breaker/contactor tripping and closing under off-nominal voltages
- Overload checks
- Interlocking checks

All pre-FAT tests confirmed above regarding the communication systems will be demonstrated to the *Employer*.

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

The *Contractor* is responsible for all temporary works necessary to complete the works..

25 Construction

25.1 Employer's Site entry and security control, permits, and Site regulations

Before work starts on Site, a Site inaugural meeting is held between the *Contractor* and the *Employer,* where details of the *Works* are discussed and clarified;

a) The *Contractor* complies to all Site rules, procedures and regulations.
b) The *Contractor* submits a safety file to the *Employer* for approval. Work may only commence after the safety file has been approved by the *Employer.*
c) The *Contractor's* Site Supervisor is on Site for the entire duration of the *Works*.
d) General access to the power station is controlled and Site induction has to be completed before work will be allowed to start.
e) It is mandatory that the *Contractor* adheres to all security regulations in force during the period of the contract.
f) Before entry to the Site will be allowed, everyone will undergo an alcohol breathalyser test which needs to be passed.
g) There are five Life-saving Rules to which the *Contractor* is required to adhere to at all times.

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

The *Contractor* satisfies himself and complies with the Site conditions presented during induction. The *Contractor* is required to comply with all Site restrictions pertaining to the Site's roads, walkways and barricades.

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

The *Contractor* makes provision to perform the *Works* during normal working hours as follows:
Monday to Thursday
07:15 – 16:30
Fridays
07:15 – 12:15

25.4 Contractor's Equipment

The *Contractor* provides the Employer with a complete list of materials, tools, Equipment and or machinery before bringing it onto Site.
The *Contractor* provides and maintains all tests and measuring Equipment required for all tests to the required accuracy. The accuracy of test Equipment is required to be better than ± 0.1 %.
The type and class of Equipment used is subject to the Acceptance by the *Employer.*
The *Contractor's* measuring Equipment is accompanied by valid calibration certificates from an approved authority.
The Project Manager may at any stage during the Works require such Equipment to be checked by an approved laboratory or the South African Bureau of Standards.

25.5 Equipment provided by the Employer

The *Employer* does not provide any equipment towards completing the *Works.*

25.6 Site services and facilities

25.6.1 Electricity Supply for Construction

The nearest electrical power supply will be indicated by the *Employer* if available, but it is the *Contractor's* responsibility to arrange for all such services required in the execution of the *Works*. No warrantee is offered or given by the *Employer* that the existing electrical supply availability will be adequate for the *Contractors* purposes nor is that supply in any way guaranteed. The distribution of electricity is carried out by the *Contractor* strictly in accordance with the applicable laws and regulation. The *Contractor* verifies extension lead requirements and provides extension leads to provide the *Works.* The *Contractor* provides everything else necessary for providing the *Works.*

25.6.2 Water Supply

All points of supply are provided in terms of availability and location. The *Employer* indicates which supply points may be used if available. The *Contractor* to source and supply his own water and it is the *Contractor's* responsibility to arrange for all such services required in the execution of the *Works*. No warranty is offered or given by the *Employer* that the existing water supply availability will be adequate for the *Contractor's* purpose nor is such water supply in any way guaranteed. All water for construction purposes is clean, free from undesirable concentrations of deleterious salts and other materials.

25.6.3 Area for Site establishment and Storage

A Site Establishment and storage area is indicated to the *Contractor* by the *Employer* if requested. Security to the *Contractor's* storage area and facility is the responsibility of the *Contractor*. The area allocated to the *Contractor* is reinstated to its former condition on handover of the *Works*.

25.6.4 Sanitary facilities

Facilities are provided in the power station complex only. The *Contractor* provides everything else necessary for providing the Works.

25.6.5 Office Space

The *Employer* shall not provide office space to *Contractors* for the total period of the contract, including work on Site. Parking space is available outside of the station building for the *Contractor* to utilise for temporary office space.

25.6.6 Telecommunications

Telephone connections are not available. The *Contractor* makes provision for his own Telecommunication requirements.

25.6.7 Facilities provided by the Contractor.

The *Contractor* makes provision for accommodation, vehicles, kitchen - and office space (mobile container) and Equipment etc. The *Contractor* removes all this Equipment and waste which they generated during the installation and commissioning within 24 hours after Completion. No spoil areas are provided on site and the *Contractor* arrange for the disposal of waste. Construction waste to be disposed at a registered disposal facility.

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

The *Contractor* communicates disruptions and amount of time of the disruption to the *Employer* during the *Works*. The *Contractor* is required to inspect the *Work* and ensure that it is safe before execution. The *Contractor* communicates with the *Employer* requirements regarding working times, construction methods, permits and down time requirements. No work commences pending the *Employer's* written instruction.

25.6.9 Survey control and setting out of the works

Prior to any excavation work, the *Contractor* makes use of an appointed professional land surveyor to perform a survey to establish if any underground services exist in the affected area. Should the underground services exist in the affected area, the *Contractor* shall produce drawings depicting the location of the existing services as well as the new location of the services should they be rerouted, with all necessary details such as type of service detected, direction, length, location, etc. The *Contractor* appoints a professional land surveyor to perform a Construction Survey which includes set-out of points, lines, levels, horizontal control, vertical control, and bench marking for the execution of the *Works*.

25.6.10 Excavations and associated water control

The *Contractor* ensures that excavations are done safely. The *Contractor* ensures that cable/pipe detection is conducted for areas where excavation is taking place to avoid breaking of live cables and water pipe bursts.

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

The *Contractor* minimises interference of any nature with regards to existing services, cable and pipe trench covers. In the event that the *Contractor* damages one of the above, the repair cost would be for the *Contractor.*

25.6.12 Sequences of construction or installation

All activities are performed according to the *Contractors* Programme accepted by the *Employer*.

26 Completion, testing, commissioning and correction of Defects

26.1 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**
	Performance testing of the *works* in use as specified in 27.10 of this document.	See performance testing requirements.
	As built drawings	Within 30 days after Completion of the *Works*

	Commissioning of the *Works*	27.5 and 27. 6

26.2 Materials facilities and samples for tests and inspections

Samples of components may be requested by the *Employer* for pre-acceptance where deemed necessary.

26.3 Commissioning

The activities forming part of live testing, live commissioning or power up of any component is not embarked on until the Project Manager's acceptance of the Commissioning documentation. The Commissioning procedures to be submitted to the Project Manager for acceptance 4 weeks prior to the commissioning date. Commissioning will not start until the following documents, required for the commissioning of the equipment, has been signed off and submitted for acceptance by the Project Manager:

1. All relevant drawings
2. All relevant site acceptance test reports completed and signed
3. All installation related defects are cleared.
4. All QCP's signed at the relevant steps.
5. All safety clearance certificates signed.

26.4 Site Acceptance Tests

Site acceptance testing is done by the *Contractor* and witnessed by the Supervisor and/or *Employer*. The test procedure are prepared by the *Contractor* and submitted to the Project Manager 4 weeks prior to the execution of the tests and accepted by the Project Manager. . Execution of the tests can only commence once the procedure has been accepted by the Project Manager. All test equipment must be provided by the *Contractor*.

Steel components shall be checked for dimensional accuracy and conformity to drawings, to prove that the manufacturing process is working satisfactorily before galvanising of steel components.

Welders, welding operators and tack welders shall be qualified by a fabricator, steelwork erector or an independent testing agency.

Records of test results shall be kept by the fabricator or steelwork erector.

NDT tests shall be carried out on all welds in the form of the following: Fillet welds are required to undergo magnetic particle inspection (20% of all welds). All butt welds and full penetration welds are required to undergo ultrasonic non-destructive testing (100% of welds).

The permissible deviations for fabrication, foundations, and anchor bolts, and erected steelwork will be in accordance with tables 3 to 9 of SANS 2001-CS1.

26.5 Cold Commissioning Tests

The purpose of the cold commissioning is to ensure that all the Plant and Materials are correctly installed and ready for hot commissioning.

(a) Cold commissioning is done by the *Contractor* and witnessed by the *Employer*.

(b) The test procedure needs to be accepted by the *Employer*.

26.6 Hot Commissioning Tests

Hot Commissioning starts after cold commissioning is complete.

(a) The EV Charger assembly is commissioned by testing each piece of equipment for full functionality.

(b) *Contractor* performs hot commissioning of the EV Charger assembly as per the accepted procedure and witnessed by the *Employer*.

26.7 Start-up procedures required to put the works into operation

The *Contractor* is on site when the first live operation of the EV Charger commences.

26.8 Take over procedures

Take-over is when all testing, inspections and commissioning as specified in Sections above are successfully completed.

26.9 Access given by the Employer for correction of Defects

The *Employer* will grant access to the *Contractor* for correcting defects, depending on availability of plant and Employer resources.

26.10 Performance tests after Completion

All commissioning tests must be submitted to the *Employer* for acceptance and if additional tests are required, it will be communicated by the Project Manager to the *Contractor*.

27 Training and technology transfer

27.1 General

Training provided by the *Contractor* is directly applicable to the actual Plant and Material supplied for the works. Generalised training based on similar Plant and Material is not acceptable;

Engineering training is provided prior to the Factory Acceptance Testing of the new assembly; All pre-FAT training is conducted at the *Contractor*'s local test facility and all operating and maintenance training is conducted at Each Pilot site.

The local facilities for training provided by the *Employer* are a suitably sized air-conditioned room, to accommodate the required trainees as well as trainee and trainer desks, an overhead projector and flipchart or white board. The *Contractor* submits to the Project Manager for acceptance a detailed training programme as well as a prospectus for each course one month before each training session. The number of participants that are to be trained is as indicated by the *employer* for each pilot site. The *Employer* bears the cost of salaries, accommodation, travelling expenses and other allowances of his personnel during the training, but all other training costs are for the *Contractor* account.

27.2 Training Requirements

1. Engineering Training
2. Overview of the EV Charger System;
3. Overview of communication troubleshooting for all interfaces;
4. The training includes the following aspects:
    a. Familiarisation with documentation (maintenance plan, procedures etc.);
    b. Operator interface familiarisation e.g. operational functions, alarms etc;
5. Hardware familiarisation;
6. Hardware maintenance;
7. Maintenance of components

8. fault finding
9. Full commissioning understanding
10. Operator training
11. Operating the equipment, e.g. isolations and switching etc;
12. Operator interfacing and intervention, e.g. operating functions, indications and alarm etc;
13. Safety switching and isolating mechanisms of the equipment, e.g. Incomers, feeder breakers
14. Maintenance training
15. Familiarise with documentation, e.g. drawings, maintenance plan, procedures etc.
16. Operator interface familiarisation, e.g. operational functions, alarms etc.
17. Hardware familiarisation
18. Hardware Maintenance

27.3 Training Documentation

All necessary technical data, design data literature and drawings to be incorporated into a training manual. Course material to be in English and all third-party devices and components must be covered as well. The training manual to be submitted by *Contractor* to the Project Manager for acceptance 4 weeks prior to the execution of the training.

27.4 Operational maintenance after Completion

The *Contractor* is required to provide Operation and Maintenance Manuals for all of the works, for acceptance by the Project Manager 4 weeks prior to the completion of the *Works.*

28 Investigation, survey and Site clearance

The *Contractor* conducts a thorough site investigation of existing facilities and the area around which he is to do his work before he commences with any part of the *Work* as detailed in this report. If the *Contractor* requires access to specific areas, this is arranged with the Project Manager and notifying in advance.
The *Contractor* to dispose all waste generated from the *Works*. Existing shade net removed from carport structure to be stockpiled on site for *Employer* to recommend further action.

Procurement

There is a cross reference from the definition of Disallowed Cost in Options C D and E to the Works Information regarding procurement procedures. This part of the Works Information MUST include any such

procedures to be able to administer this procedure. Options A & B may also require constraints on procurement procedures.

People

Minimum requirements of people employed on the Site

(1) It is the *Contractor's* sole responsibility to ensure all its employees have permits to perform work in the Republic of South Africa.

BBBEE and preferencing scheme

Specify constraints which *Contractor* must comply with after contract award in regard to any Broad Based Black Economic Empowerment (B-BBEE) or preferencing scheme measures.

29 List of drawings

29.1 Drawings issued by the Employer

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

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

Drawing number	Revision	Title
0.63/210, sheet 6	7	Station MV and LV Electrical Diagram
0.63/5075 sheet 2 of 5	11	380V Administration Block Board A Switchgear Schedule.
0.63/7991	2	Cable Tunnels and Key Plan
D-DT-0854 sheet 1-8	8	MV and LV Cable Laying Standard
D-DT-3034	13	Specification's for MCCB's
D-DT-3128	19	Power Cables - LV
D-DT-0854	8	LV Power Cable Trench Details
D-DT-8012	4	Cable Marker

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.

PART 4: SITE INFORMATION

Document reference	Title	No of pages
	This cover page	1
C4	Site Information	10
	Total number of pages	11

C4 Site Information

Core clause 11.2(16) states

“Site Information is information which

- describes the Site and its surroundings and
- is in the documents which the Contract Data states it is in.”

In Contract Data, reference has been made to this Part 4 of the contract for the location of Site Information

4 C4.1: Information about the *site* at time of tender which may affect the work in this contract:

1. Site Procedures and Regulations

1.1 Health and Safety Requirements

The *Contractor* and his sub*contractor’s* always ensure compliance with safety regulations imposed by any Act of Parliament, ordinance or any regulation or by-law of any local or statutory authority.

- The *Contractor* acts in accordance with the health and safety requirements stated in the *Works* Information.
- In carrying out its obligations to the *Employer* in terms of this contract; in Providing the *Works*; in using Plant, Materials and Equipment; and while at the Site for any reason, the *Contractor* complies and procures and ensures the compliance by its employees, agents, Sub-*Contractor’s* and mandataries with:
- the provisions of the Occupational Health and Safety Act 85 of 1993 (as amended) and all regulations in force from time to time in terms of that Act (“the OHSA”); and the Eskom “Health, Safety and Environmental specifications for *Contractor’s*” document attached to the *Works* Information (as amended from time to time) and such other Eskom Safety Regulations as are applicable to the *works* and are provided in writing to the *Contractor* (collectively “the Eskom Regulations”). The Eskom Regulations may be amended from time to time by the *Employer* and all amendments will be provided in writing to the *Contractor*. The *Contractor* complies with the provisions of the latest written version of the Eskom Regulations with which it has been provided and the health and safety plan prepared by the *Contractor* in accordance with the SHEQ Requirements (The OHSA and the Eskom Regulations are collectively referred to as the “SHEQ Requirements”.)
- The *Contractor,* at all times, considers itself to be the “*Employer*” for the purposes of the OHSA and shall not consider itself under the supervision or management of the *Employer* with regard to compliance with the SHEQ Requirements, the *Contractor* shall furthermore not consider itself to be a subordinate or under the supervision of the *Employer* in respect of these matters. The *Contractor* is at all times responsible for the supervision of its employees, agents, Sub-*Contractor’s* and mandataries and takes full responsibility and accountability for ensuring they are competent, aware of the SHEQ Requirements and execute the *works* in accordance with the SHEQ Requirements
- The *Contractor* acknowledges that it is fully aware of the requirements of all the above and undertakes to employ only people who have been duly authorized in terms thereof and who have received sufficient training to ensure that they can comply therewith.
- The *Contractor* ensures that all statutory appointments and appointments required by any Eskom Regulations are made and that all appointees fully understand their responsibilities and are trained and competent to execute their duties. The *Contractor* supervises the execution of their duties by all such appointees.

The *Contractor* shall appoint a person who will liaise with the Eskom Safety Officer responsible for the

premises relevant to this contract. The person so appointed shall, on request: supply the Eskom Safety Officer with copies of minutes of all Health And Safety Committee meetings, whenever he is

- required to do so; supply the Eskom Safety Officer with copies of all appointments in respect of employees employed on this contract, in terms of the Act and Regulations and shall advise the Eskom Safety Officer of any changes thereto.

  The *Employer*, or any person appointed by the *Employer*, may, at any stage during the duration of this contract:

  - conduct health and safety audits regarding all aspects of compliance with the SHEQ Requirements, at any off-site place of work, or the site establishment of the *Contractor* refuse any employee, Sub *Contractor* or agent of the *Contractor* access to the premises if such person has been found to commit an unsafe act or any unsafe working practice or is found not to be qualified or authorised in terms of the SHEQ Requirements;
  - issue the *Contractor* with a stop order should the *Employer* become aware of any unsafe working procedure or condition or any non-compliance with any provision of the SHEQ Requirements.
  - The *Contractor* immediately reports any disabling injury as well as any threat to health or safety of which it becomes aware at the *works* or on the Site to the *Employer.*

- The *Contractor* undertakes not to do, or not to allow anything to be done which will contravene any of the provisions of the Act, Regulations or Safety and Operating Procedures.
- The *Contractor* appoints a person, qualified in accordance with the SHEQ Requirements, as the liaison with the Eskom Safety Officer for all matters related to health and safety, this person shall be reachable 24 hours a day.
- The *Contractor* confirms that it has been provided with sufficient written information regarding the health and safety arrangements and procedures applicable to the *works* to ensure compliance by it and all employees, agents, Sub-*Contractor's* or mandataries with the SHEQ Requirements while Providing the *Works* in terms of this contract. As such, the *Contractor* confirms that this contract and the relevant Eskom Regulations referred to in this contract constitute written arrangements and procedures between the *Contractor* and the *Employer* regarding health and safety for the purposes of section 37(2) of the OHSA.
- The *Contractor* agrees that the *Employer* is relieved of any and all of its responsibilities and liabilities in terms of Section 37(1) of OHSA in respect of any acts or omissions of the *Contractor*, and the *Contractor*'s employees, agents or Sub-*Contractor's*, to the extent permitted by the OHSA.
- The *Contractor* hereby indemnifies the *Employer* and holds the *Employer* harmless in respect of any and all loss, costs, claims, demands, liabilities, damage, penalties or expense that may be made against the *Employer* and/or suffered or incurred by the *Employer* (as the case may be) as a result of, any failure of the *Contractor*, its employees, agents, Sub-*Contractor's* and/or mandataries to comply with their obligations in terms of clause 16, and/or the failure of the *Employer* to procure the compliance by the *Contractor*, its employees, agents, Sub *Contractor's* and/or mandataries with their responsibilities and/or obligations in terms of or arising from the OHSA.

  - In carrying out his obligation as the mandatory to the *Employer* for this contract in terms of the National Environmental Management Act No.107 of 1998, the *Contractor* ensures that he complies with the Act when Providing the Services or using plant, materials or equipment.

1.2 Permit to Work System

- NO work shall be carried out without a "PERMIT TO WORK"

- The *Contractor*'s Responsible Person(s) must satisfy himself that all sources of possible danger are isolated. Details of the Permit to Work system can be found in the Plant Safety Regulations for Lethabo Power Station, Eskom OPR 3305. The *Contractor* must also make provision for his Authorise Supervisor(s) that is trained according to the procedure mentioned above.
- A Master Permit to Work is used on declared major outages, details can be found in local procedure LBA 00085. Permit changes are made during the dead time, if it is required by the *Contractor* that a certain supply be made available or plant tested than this can be applied for at the Outage Management Meeting at least 1 day in advance.
- Plant with a prohibitive sign attached may only be operated by appointed Eskom personnel. Any *Contractor* employee found tampering with such plant will be permanently removed from Site.

1.3 Safety Induction Course

- All the employees of the *Contractor* must attend a safety induction course before they will be allowed to work on the Site. It is the responsibility of the *Contractor* to ensure that all employees have attended the safety induction.
- A list of employees requiring safety induction must be submitted at least 2 days in advance of arrival on site with the date and time of arrival so that the safety induction can be arranged.

1.4 IBI Awareness Techniques

- "To prevent incidents and ensure continuous improvement of Lethabo Power Stations business performance in all areas affecting safety, reliability and production, it is expected of all ***CONTRACTOR'S*** service personnel, to attend a three(3) hour training session on Integrated Business Improvement Awareness, which has to be done as soon as work has commenced; This is to ensure familiarisation and use of error-prevention tools/techniques inclusive of, Pre and Post-job briefs, Risk Assessments, Self-checks(STAR principle), Job observations, Effective communications e.g.3- way, Questioning attitude, Procedural adherence, Hand overs and other related topics.
- A monthly IBI scorecard to be completed indicating the use of error prevention tools/ techniques; The assigned employee fulfilling the role of IBI representative has to attend the IBI representative's forum fortnightly, on Tuesdays, duration of one hour.
- An IBI representative appointed by the *Contractor*/Supplier/Consultant to attend the IBI Representative Forum for One (1) hour every Tuesday (fourth nightly).
- IBI Awareness training will be provided by Lethabo Power Station personnel, free of charge, course bookings can be arranged by contacting Rabie Heymans on extension 5094".

1.5 Transportation of passengers: open LDVs:

No *Eskom employee* or *Contractor* would be allowed to transport passengers on the back of open light delivery vehicles (LDVs).
It is a legal requirement to provide safe transportation of *Eskom* and *Contractor* employees – therefore the following will be enforced:

- All passengers must be transported in a closed vehicle with proper and adequate seating, fitted with safety belts for the number of passengers to be transported. NO passengers may be transported on the back of a light delivery vehicle (LDV) whether open or closed.
- Tools and equipment must be properly secured.
- Only authorised drivers may transport passengers.
- Proof must be submitted on request in terms of valid roadworthiness of the vehicle/s.
- The above must apply to on-site and off-site transportation of passengers.
-

1.6 Eskom Life-Saving Rules:

Five Life-saving Rules have been developed that will apply to all Eskom employees, agents, consultants and *Contractor's*.

- **Rule 1:** Open, Isolate, Test, Earth, Bond, and/or Insulate before touch - that is any plant operating above 1 000 V.
- **Rule 2:** Hook up at heights - no person may work at height where there is a risk of falling.
- **Rule 3:** Buckle up – no person may drive any vehicle on Eskom business and/or on Eskom premises: unless the driver and all passengers are wearing seat belts.
- **Rule 4:** Be sober (no person is allowed to work under the influence of drugs and alcohol.
- **Rule 5:** Use a permit to work – where an authorization limitation exists, no person shall work without the required permit to work.
- **Rule 6:** Texting and talking on the cell phone while driving or walking is prohibited.

1.7 Local Safety Procedures

- The *Contractor* adheres to all local procedures. A list of local procedures is available on request from the *Employer.*

1.8 Incidents / Accidents

- Incidents and accidents must be reported and investigated as detailed in LBA 00030. All incidents must also be reported to the *Employer* within 24 hours.
- First aid must be made available either by the *Contractor* or use can be made of the Lethabo medical centre at a fee. The availability of the *Contractor's* own first aid does not relieve the *Contractor* of his obligation to report and investigate the incident in accordance with Lethabo Procedure.

1.9 Fire Prevention

- Fire prevention and protection requirements to which *Contractor's* must comply are detailed in LBA 00030.

1.10 Protective Equipment and Clothing

- The *Contractor* supplies his own personal protective equipment necessary to carry out the *works* and the *Contractor* shall ensure that all overalls for his staff have clearly identifying **company LOGO's**
- The *Contractor* is also responsible to inspect and maintain such equipment as required in terms of the OHS Act and local procedures.

1.11 Inspection of Equipment

- The *Contractor's* equipment is inspected by an authorised Eskom employee on arrival at the site.
- The following documentation is required to accompany the equipment where applicable: copies of all test certificates and maintenance records.
- Lifting equipment and electrical equipment must be marked with a unique number, code or colour code for identification. If the equipment is found to be in an unsatisfactory condition or if insufficient maintenance has been carried out on the equipment, then it will not be approved for use on Site. A list of all lifting equipment and electrical equipment must be submitted to the *Employer* at least 2 days prior to the occupation date. This list must indicate the unique number and description of the equipment.

1.12 Documentation

The *Contractor* is responsible to have the following documentation available on-site in accordance with LBA 00030:

- A copy of the OHS Act.
- Copies of all site accident report forms as required by the OHS Act.
- Copies of minutes of health and safety meetings held on-site.
- Copies of inspection reports produced by the accident prevention officer

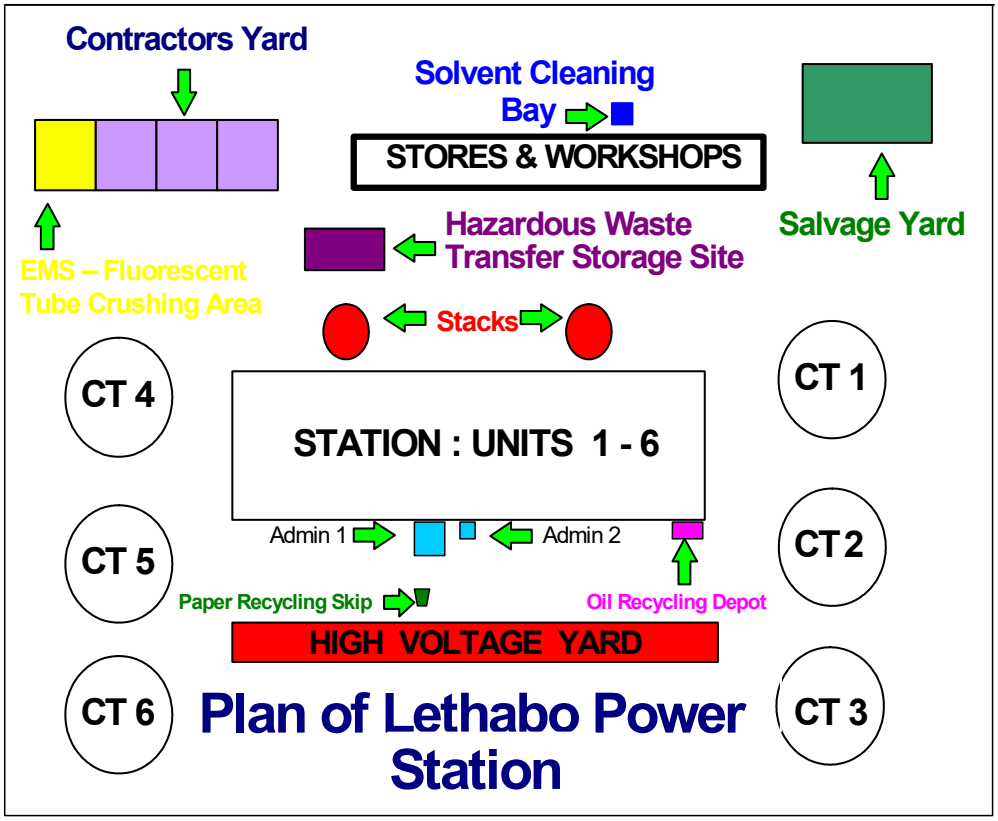
1.13 Environmental Policy and Waste Handling

Lethabo Environmental Statement of commitment must be adhered to.
The contractor shall submit to Eskom an EMP to be reviewed and approved by Eskom environmental officer, one week before the commencement of *works*.

1.14 Disposal of Waste

Waste shall be removed promptly to the designated disposal area. No stockpiling will be permitted.

- Domestic waste to the white waste bins
- Production waste in the marked bins i.e. coal and ash only
- Paper and cans to their respective recycling bins
- Contact Civil *Engineering* for the disposal of building rubble
- Scrap metal, Wood & Rubber, Redundant Valves, Pipes, and Equipment etc. to be placed in the marked bins in the new Salvage Yard. Solvents and cloths used in the Cleaning Bay.



1.15 Hazardous Waste Disposal and Handling

- Hazardous/toxic waste includes all waste which contains elements or compounds listed as hazardous substances in terms of the Hazardous Substances Act No. 15 of 1973.
- Any *Contractor* who produces hazardous waste on-site will be responsible for the safe removal of such waste to a registered Class I site by a waste removal and disposal body.
- The *Contractor* is required to produce a certificate of safe disposal in accordance with LBA 00054.
- The *Contractor* must ensure that persons handling hazardous waste have undergone suitable training and are acquainted with cleaning methods in case of a spillage.
- The *Contractor* is also responsible for the safe removal of their hazardous waste to Lethabo's Hazardous Waste Store. Other requirements for hazardous waste are detailed in LBA 00030.
- In order to ensure effective hazardous waste management, a copy of the *Contractor's* hazardous waste inventory must be supplied to the *Employer* at least 2 days prior to the occupation date.
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Abbreviated list of Hazardous Materials

Acids and alkalis	Hydrocarbons	Pesticides & insecticides
Antimony and its compounds	Inorganic cyanides	Pharmaceuticals
Arsenic compounds	Inorganic compounds containing halogens	Phosphorus and its compounds
Asbestos	Inorganic compounds containing sulphur	Selenium and its compounds
Barium compounds	Laboratory chemicals	Silver compounds
Beryllium compounds	Lead compounds	Tarry & petroleum products
Biocides & phytopharmaceutics	Medical wastes	Tellurium and its compounds
Boron compounds	Mercury compounds	Thallium and its compounds
Cadmium and its compounds	Nickel and its compounds	Vanadium compounds
Chromium compounds	Organic halogen compounds	Zinc compounds
Copper compounds	Paints and paint sludges	Waste with flash point < 60°C
Heterocyclic organic compounds	Peroxides, chlorates	

1.16 Plant & Materials

- The *Employer* may at his own discretion, supply any Plant and Materials as may be required by the *Contractor* to Provide the *Works*.
- The *Contractor* is to notify the *Employer* in writing, 48 hrs in advance, of such Plant and Materials required.

1.17 Access to and Departure from the Site:

- The Site is at Lethabo Power Station situated ± 18 km South of Vereeniging on the Viljoensdrift - Deneysville Road, Free State. Access to the site will be via the main security gate only. The *Employer* informs the *Contractor* of the access procedures, and it should be expected that such procedures may change depending on the prevailing security situation.
- The *Contractor* allows in his price and program for delays at the security gate.
  The *Employer* reserves the right for its Security personnel to search persons or vehicles entering or leaving the premises. This includes but is not limited to briefcases and toolboxes.

1.18 Temporary Gate Permits

- The *Contractor* provides the *Employer* with the personal details of their staff at least two days prior to the occupation date. All names and details to be submitted to the *Employer* who arranges for all gate permits.

1.19 Equipment or Material Access and Removal Access

- The *Contractor* ensures that all equipment and materials brought through the security gate is signed in at the main security gate on an OV18 form.

Removal

- The *Contractor* is not allowed to remove any equipment or materials from site without producing the relevant OV18 forms or the equipment lists.
- If the equipment or material is to be removed the same day, on which they were brought on to site, then the OV18 form will need to be produced at the gate when leaving the site.
- If the equipment or material is removed after this time then a Non-Returnable Gate Release will be provided by the *Employer*, on receipt of the original OV18, with which the *Contractor* brought the equipment on site.
- *Contractor* is to provide his own scaffolding.

1.20 Site or Area Establishment and Evacuation

Application for Site Establishment:

- Sites are allocated according to availability, the period for which the *Contractor* is going to be on-site, or if special circumstances warrant the allocation of a site. Documentation to support this application can be submitted.
- The location of the site or area is indicated during the site or area take-over inspection.

Site Establishment:

- The *Contractor* does not occupy any site or area other than that allocated to him.
- The *Contractor* does not occupy the site or area prior to the take-over inspection.
- The *Contractor* maintains the site or area provided to him to the satisfaction of the *Employer*.
- The *Employer* subjects the *Contractor's* site or area to periodic inspection.

Site Evacuation:

- The *Contractor* advises the *Employer* in writing, five (5) days in advance of evacuation in accordance with LBA 00030. Immediately prior to evacuation the necessary take-over inspection must take place.

1.21 Electrical Equipment / Appliances, Lighting and Power:

- Any electrical equipment or appliances used by the *Contractor* must comply with all relevant safety regulations and requirements as detailed in LBA 00030, and be maintained in safe and proper working condition.
- The *Employer* has the right to stop the *Contractor's* use of any electrical equipment or appliance, which in the *Employer's* opinion does not conform to the foregoing.
- The *Contractor* provides at his own expense any temporary local lighting, and ensures that it is in accordance with the requirements of the Factories Inspector.
- The *Contractor* provides at his own expense, all temporary wiring and cabling to route power from the point of supply to the various points where it is required, maintain same and remove on completion.

1.22 Water

- The *Contractor* provides at his own cost, all connection fittings, pipe-work, temporary plumbing, and pumps necessary to lead the water from the point of supply to the various points where it is required, maintain same and remove on completion.
- Such fittings must be compatible with the *Employer's* fittings so that galvanic corrosion of pipework is prevented
- Water wastage due to un-maintained pipe work or fittings provided by the *Contractor* will be calculated and will be for the cost of the *Contractor.*

1.23 Compressed Air

The *Contractor* provides at his own cost, all connection fittings and pipe work necessary to lead the compressed air from the point of supply to the various points where it is required, maintain same and

- remove on completion. Such fittings must be compatible with the *Employer's* fittings so that galvanic corrosion of pipework is prevented
- Compressed air wastage due to un-maintained pipe work or fittings provided by the *Contractor* will be calculated and will be for the cost of the *Contractor.*

1.24 Ventilation

- The *Contractor* is responsible for adequate ventilation of the *works*.

1.25 Security

- The *Contractor* is responsible for all security on *site*, fencing off, night watch and access control in order to secure all plant, materials and the w*orks* itself. All these measures must be in accordance with any relevant regulations and standards and subject to the *Employer's* approval.
- It is also the *Contractor's* responsibility to ensure the security of all completed portions of the w*orks* prior to Completion.

1.26 Offices, *Works*hops and Stores

- The *Contractor* shall provide, erect and maintain for his own use, any additional office accommodation and stores he requires, together with drainage, lighting, heating, and hot and cold-water services as required.
- The *Contractor's* site establishment price includes all treatment of the site that he considers necessary for his entire operation throughout his period of occupation and under all weather conditions.
- The *Contractor* also includes for all security and access arrangements that he considers necessary.

1.27 Sanitary Facilities

- The *Contractor* shall provide service, maintain and remove on completion any additional facilities required and allow for it in his *Price*.
- The *Contractor's* employees who work with asbestos are not allowed to use the *Employer's* ablution or messing facilities at the workplace during and after stripping of lagging materials, for fibres that may be attached to workers clothing, or to any other article.

1.28 Housekeeping

- Working areas are cleaned daily.
- All electrical cables and hoses are routed so as to not cross over floors and walkways.
- All equipment is packed neatly without interference to access.
- All excess scaffolding material is removed from working areas after the scaffolding has been erected.
- Scrap bins are available on the zero-meter level and emptied daily by the *Employer*.

1.29 Barricading

- Access to danger zones is done using handrail type guards of at least 1,2 meters high, able to block access to the danger zone.
- Symbolic safety signs depicting "Danger" and "No entry" are attached to the guards.

1.30 Scaffolding

- All scaffolding erected complies with procedure PS/031/001.
- At least one person in the *Contractor's* service shall be competent to inspect scaffolding in the case where the *Contractor* himself needs scaffolding.
- Certificates must be handed in at the *Project Manager* after contract award.
- The Contractor is responsible for the supply, erection and dismantling of its scaffolding.