NEC3 Engineering & Construction Contract

Between **ESKOM HOLDINGS SOC Ltd**
(Reg No. 2002/015527/30)

and **[Insert at award stage]**
(Reg No. _____)

for **Replacement of battery chargers cabling scope**

Contents:		No of pages
	This cover page	1
Part C1	Agreements & Contract Data	19
Part C2	Pricing Data	6
Part C3	Scope of Work	71
Part C4	Site Information	9

CONTRACT No. **[Insert at award stage]**

Part C1: Agreements & Contract Data

Contents:		No of pages
	This cover page	**1**
C1.1	**Form of Offer and Acceptance**	**3**
	[to be inserted from Returnable Documents at award stage]	
C1.2a	**Contract Data provided by the *Employer***	**6**
C1.2b	**Contract Data provided by the *Contractor***	**19**
	[to be inserted from Returnable Documents at award stage]	
C1.3	**Proforma Guarantees**	**[●]**

C1.1 Form of Offer & Acceptance

Offer

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

Cabling works for the replacement of Battery Chargers at Lethabo Power Station for a period of three (03) years.

The tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto 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.

Options A	The offered total of the Prices exclusive of VAT is	**R**
	Sub total	**R**
	Value Added Tax @ 15% is	**R**
	The offered total of the amount due inclusive of VAT is[1]	**R**
	(in words)	

This Offer may be accepted by the *Employer* by signing the Acceptance part of this Form of Offer and Acceptance 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 (if applicable) .....

[1] This total is required by the *Employer* for budgeting purposes only. Actual amounts due will be assessed in terms of the *conditions of contract*.

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 C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work: Works Information
Part C4	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 Returnable 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.

The tenderer shall within two weeks 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 original copy signed between them of this document, including the Schedule of Deviations (if any).

Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the *Employer* in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s) .....

Name(s) .....

Capacity .....

for the *Employer* .....

(Insert name and address of organisation)

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

Note: If a tenderer wishes to submit alternative tenders, use another copy of this Form of Offer and Acceptance.

Schedule of Deviations to be completed by the *Employer* prior to contract award

Note:

1. 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)*	..... *(Insert name and address of organisation)*
Name & signature of witness	.....	.....
Date	.....	.....

C1.2 ECC3 Contract Data

Part one - Data provided by the *Employer*

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

Clause	Statement	Data	
1	**General**		
	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		
		X1:	**Price adjustment for inflation**
		X2	**Changes in the law**
		X5:	**Sectional Completion**
		X7:	**Delay damages**
		X15:	**Limitation of *Contractor's* liability for his design to reasonable skill and care**
		X16:	**Retention**
		X18:	**Limitation of liability**
		Z:	***Additional conditions of contract***
	of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)		
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	The *Project Manager* is: (Name)		
	Address	**Lethabo Power Station Deneysville Rd Viljoensdrift**	

	Tel	
	Fax	
	e-mail	
10.1	The *Supervisor* is: (Name)	
	Address	**Lethabo Power Station** **Deneysville Rd** **Viljoensdrift**
	Tel No.	
	e-mail	
11.2(13)	The *works* are	• **Design, supply, install, test and commissioning of power cables inclusive of all necessary accessories and termination kits;** • **Design, supply, install, test and commissioning of instrumentation cables inclusive of all necessary accessories and termination kits** • **Design, supply, install, test and commissioning of interposing relay panel(s).**
11.2(14)	The following matters will be included in the Risk Register	**See risk management in part 3**
11.2(15)	The *boundaries of the site* are	**Areas associated with the scope of work to be performed as per the works information.**
11.2(16)	The Site Information is in	**Part 4: Site Information**
11.2(19)	The Works Information is in	**Part 3: Scope of Work and all documents and drawings to which it makes reference.**
12.2	The *law of the contract* is the law of	**the Republic of South Africa**
13.1	The *language of this contract* is	**English**
13.3	The *period for reply* is	**1 week**
2	**The *Contractor's* main responsibilities**	**Data required by this section of the core clauses is provided by the *Contractor* in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data.**
3	**Time**	
11.2(3)	The *completion date* for the whole of the *works* is	**36 months after *Starting date***
11.2(9)	The *key date*s and the *condition*s to be met are:	***Condition* to be met** ***key date***

		Detailed Design Freeze	**6 months after *Starting date***
		Sectional Completion	**As per X5.1 below**
30.1	The *access dates* are:	**Part of the Site - TBC**	**Date - TBC**
31.1	The *Contractor* is to submit a first programme for acceptance within	**2 weeks after Contract award.**	
31.2	The *starting date* is	**TBC on award**	
32.2	The *Contractor* submits revised programmes at intervals no longer than	**1 week during execution, monthly prior execution.**	
35.1	The *Employer* is not willing to take over the *works* before the Completion Date.	**As stated above and X5.1**	
4	**Testing and Defects**		
42.2	The *defects date* is	**52 weeks after Completion of the *works*.**	
43.2	The *defect correction period* is	**Two weeks**	
5	**Payment**		
50.1	The *assessment interval* is	**The 25th day of each successive month.**	
51.1	The *currency of this contract* is the	**South African Rand.**	
51.2	The period within which payments are made is	**4 weeks.**	
51.4	The *interest rate* is	**the publicly quoted prime rate of interest (calculated on a 365 day year) charged from time to time by the Standard Bank of South Africa Limited (as certified, in the event of any dispute, by any manager of such bank, whose appointment it shall not be necessary to prove) for amounts due in Rands and** **(ii) the LIBOR rate applicable at the time for amounts due in other currencies. LIBOR is the 6 month London Interbank Offered Rate quoted under the caption "Money Rates" in The Wall Street Journal for the applicable currency or if no rate is quoted for the currency in question then the rate for United States Dollars, and if no such rate appears in The Wall Street Journal then the rate as quoted by the Reuters Monitor Money Rates Service (or such service as may replace the Reuters Monitor Money Rates Service) on the due date for the payment in question, adjusted *mutatis mutandis* every 6 months thereafter and as certified, in the event of any dispute, by any manager employed in the foreign exchange department of The Standard Bank of South Africa Limited, whose**	

		appointment it shall not be necessary to prove.
6	**Compensation events**	
60.1(13)	The place where weather is to be recorded is:	**Lethabo Power Station** **Deneysville Rd** **Viljoensdrift**
	The *weather measurements* to be recorded for each calendar month are,	**the cumulative rainfall (mm)** **the number of days with rainfall more than 10 mm** **the number of days with minimum air temperature less than 0 degrees Celsius** **the number of days with snow lying at 09:00 hours South African Time**
	The *weather measurements* are supplied by	**South African Weather Bureau**
	The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at:	**Vaal triangle**
	and which are available from:	**the South African Weather Bureau and included in Annexure A to this Contract Data provided by the *Employer***
60.1(13)	Assumed values for the ten year return *weather data* for each *weather measurement* for each calendar month are:	**As stated in Annexure A to this Contract Data provided by the *Employer*.**
7	**Title**	**There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.**
8	**Risks and insurance**	
80.1	These are additional *Employer's* risks	**Refer to risk register**
84.1	The *Employer* provides these insurances from the Insurance Table	**as stated for "Format A"** *http://www.eskom.co.za/Tenders/InsurancePoliciesProcedures/Pages/EIMS_Policies_From_1_April_2014_To_31_March_2015.aspx* **(See Annexure B for basic guidance)** **The *Contractor's* liability for payment of the *Employer's* insurance deductible shall be limited to the relevant deductibles payable in terms of the relevant insurance policy as at Contract Date.**
84.1	The *Contractor* provides these additional insurances:	**as stated for "Format A"** *http://www.eskom.co.za/Tenders/InsurancePoliciesProcedures/Pages/EIMS_Policies_From_1_April_2014_To_31_March_2015.aspx*

		(See Annexure B for basic guidance) **The *Contractor's* liability for payment of the *Employer's* insurance deductible shall be limited to the relevant deductibles payable in terms of the relevant insurance policy as at Contract Date.**
84.2	The insurance against loss of or damage to the *works*, Plant and Materials is to include cover for Plant and Materials provided by the *Employer* for an amount of	**Replacement including the amount stated in the contract data for the replacement of any plant and materials provided by the *Employer***
84.2	The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the *works*, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract for any one event is	**Whatever the *Contractor* deems necessary in addition to that provided by the *Employer*.**
84.2	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event 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).**
9	**Termination**	**There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.**
10	**Data for main Option clause**	
A	**Priced contract with activity schedule**	**There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.**
11	**Data for Option W1**	
W1.1	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).**
W1.2(3)	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.**

W1.4(2)	The *tribunal* is:	**Arbitration.**
W1.4(5)	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.**

12 Data for secondary Option clauses

X1	**Price adjustment for inflation**			
X1.1(a)	The *base date* for indices is	**TBC on award**		
X1.1(c)	The proportions used to calculate the Price Adjustment Factor are:	**proportion**	**linked to index for**	**Index prepared by**
		0.1	**non-adjustable**	
	Total	**1.00**		
X2	**Changes in the law**	**There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.**		

X5	**Sectional Completion**			
X5.1	The *completion date* for each *section* of the *works* is:	***Section***	**Description**	***Completion date***
		1	**Completion**	**4 months after Detailed Design Freeze**
		2	**Completion**	**4 months after Section 1 completion**
		3	**Completion**	**4 months after Section 2 completion**

		4	**Completion**	**4 months after Section 3 completion**
		5	**Completion**	**4 months after Section 4 completion**
		6	**Completion**	**4 months after Section 5 completion**
		7	**Completion**	**4 months after Section 6 completion**
		8	**Completion**	**4 months after Section 7 completion**
		9	**Completion**	**4 months after Section 8 completion**

X7	**Delay damages (but not if Option X5 is also used)**	
X7.1	Delay damages for Completion of the whole of the *works* are	**0.5 % of the total order value of the delay per day up to the maximum of 15%**
X15	**Limitation of the *Contractor*'s liability for his design to reasonable skill & care**	**There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.**
X16	**Retention**	
X16.1	The *retention free amount* is	**R0.00**
	The *retention percentage* is	**5% of every payment made**
X18	**Limitation of liability**	
X18.1	The *Contractor*'s liability to the *Employer* for indirect or consequential loss is limited to:	**R0.0 (zero Rand)**
X18.2	For any one event, the *Contractor*'s liability to the *Employer* for loss of or damage to the *Employer's* property is limited to:	**the amount of the deductibles relevant to the event described in the insurance policy format selected in the data for clause 84.1 above, which policy is available on** *http://www.eskom.co.za/Tenders/InsurancePoliciesProcedures/Pages/EIMS_Policies_From_1_April_2014_To_31_March_2015.aspx*
X18.3	The *Contractor*'s liability for Defects due to his design which are not listed on the Defects Certificate is limited to	**The greater of** • **the total of the Prices at the Contract Date and**
X18.4	The *Contractor*'s total liability to the	**The total of the Prices other than for the**

	Employer for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	**additional excluded matters.** **The *Contractor's* total liability for the additional excluded matters is not limited.** **The additional excluded matters are amounts for which the *Contractor* is liable under this contract for** • **Defects due to his design which arise before the Defects Certificate is issued,** • **Defects due to manufacture and fabrication outside the Site,** • **loss of or damage to property (other than the *works*, Plant and Materials),** • **death of or injury to a person and** • **infringement of an intellectual property right.**
X18.5	The *end of liability date* is	**(i) Seven years after the *defects date* for latent Defects and** **(ii) the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.** **A latent Defect is a Defect which would not have been discovered on reasonable inspection by the *Employer* or the *Supervisor* before the *defects date*, without requiring any inspection not ordinarily carried out by the *Employer* or the *Supervisor* during that period. If the *Employer* or the *Supervisor* do undertake any inspection over and above the reasonable inspection, this does not place a greater responsibility on the *Employer* or the *Supervisor* to have discovered the Defect.**
Z	**The *Additional conditions of contract* are**	**Z1 to Z12 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	**Joint ventures**
Z2.1	If the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two

or more persons or organisations then these persons or organisations are deemed to be jointly and severally liable to the *Employer* for the performance of this contract.

Z2.2 Unless already notified to the *Employer*, the persons or organisations notify the *Project Manager* within two weeks of the Contract Date of the key person who has the authority to bind the *Contractor* on their behalf.

Z2.3 The *Contractor* does not alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the *Employer* having been given to the *Contractor* in writing.

Z3 Change of Broad Based Black Economic Empowerment (B-BBEE) status

Z3.1 Where a change in the *Contractor's* legal status, ownership or any other change to his business 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.

Z3.2 The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Project Manager* within thirty days of the notification or as otherwise instructed by the *Project Manager*.

Z3.3 Where, as a result, the *Contractor's* B-BBEE status has decreased since the Contract Date the *Employer* may either re-negotiate this contract or alternatively, terminate the *Contractor*'s obligation to Provide the Works.

Z3.4 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 P1, P2 and P3 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.

Z4 Ethics

Z4.1 Any offer, payment, consideration, or benefit of any kind made by the *Contractor*, which constitutes or could be construed either directly or indirectly as an illegal or corrupt practice, as an inducement or reward for the award or in execution of this contract constitutes grounds for terminating the *Contractor*'s obligation to Provide the Works or taking any other action as appropriate against the *Contractor* (including civil or criminal action).

Z4.2 The *Employer* may terminate the *Contractor*'s obligation to Provide the Works if the *Contractor* (or any member of the *Contractor* where the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations) is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices.

Such practices include making of offers, payments, considerations, or benefits of any kind or otherwise, whether in connection with any procurement process or contract with the *Employer* or other people or organisations and including in circumstances where the *Contractor* or any such member is removed from the an approved vendor data base of the *Employer* as a consequence of such practice.

Z4.3 Notwithstanding the provisions of core clause 90.2, the procedures on termination in terms of this clause are P1, P2 and P3 as stated in the core clause 92 and the amount due is A1 and A3 as stated in core clause 93.

Z5 Confidentiality

Z5.1 The *Contractor* does not disclose or make any information arising from or in connection with

this contract available to Others. 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 in terms of clause 25.1, the *Contractor* ensures that the provisions of this clause are complied with by the recipient.

Z5.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Project Manager*.

Z5.3 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.

Z5.4 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 *Project Manager*. All rights in and to all such images vests exclusively in the *Employer*.

Z5.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

Z6 Waiver and estoppel: Add to core clause 12.3:

Z6.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties*,* the *Project Manager*, the *Supervisor*, 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.

Z7 Health, safety and the environment: Add to core clause 27.4

Z7.1 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.

Z7.2 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.

Z8	**Provision of a Tax Invoice and interest. Add to core clause 51**
Z8.1	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 in accordance with the *Employer's* procedures stated in the Works Information, showing the amount due for payment equal to that stated in the payment certificate.
Z8.2	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 core clause 51.2 is then calculated from the delayed date by when payment is to be made.
Z8.3	The *Contractor* (if registered in South Africa in terms of the companies Act) 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.

Z9	**Notifying compensation events**
Z9.1	Delete from the last sentence in core clause 61.3, "unless the *Project Manager* should have notified the event to the *Contractor* but did not".

Z10	***Employer's* limitation of liability**
Z10.1	The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)
Z10.2	The *Contractor*'s entitlement under the indemnity in 83.1 is provided for in 60.1(14) and the *Employer's* liability under the indemnity is limited.

Z11	**Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":**
Z11.1	or had a business rescue order granted against it.

Z12	**Addition to secondary Option X7 Delay damages (if applicable in this contract)**
Z12.1	If the amount due for the *Contractor*'s payment of delay damages reaches the limits stated in this Contract Data for Option X7 or Options X5 and X7 used together, the *Employer* may terminate the *Contractor*'s obligation to Provide the Works using the same procedures and payment on termination as those applied for reasons R1 to R15 or R18 stated in the Termination Table.

Annexure A: One-in-ten-year-return *weather data* obtained from SA Weather Bureau for [weather station]

If any one of these *weather measurements* recorded within a calendar month, before the Completion Date for the whole of the *works* and at the place stated in this Contract Data is shown to be more adverse than the amount stated below then the *Contractor* may notify a compensation event.

	Weather measurement				
Month	Cumulative rainfall (mm)	Number of days with rain more than 10mm	Number of days with min air temp < 0 deg.C	Number of days with snow lying at 08:00 CAT	[Other measurements if applicable]
January	**[●]**	**[●]**	**[●]**	**[●]**	
February	**[●]**	**[●]**	**[●]**	**[●]**	
March	**[●]**	**[●]**	**[●]**	**[●]**	
April	**[●]**	**[●]**	**[●]**	**[●]**	
May	**[●]**	**[●]**	**[●]**	**[●]**	
June	**[●]**	**[●]**	**[●]**	**[●]**	
July	**[●]**	**[●]**	**[●]**	**[●]**	
August	**[●]**	**[●]**	**[●]**	**[●]**	
September	**[●]**	**[●]**	**[●]**	**[●]**	
October	**[●]**	**[●]**	**[●]**	**[●]**	
November	**[●]**	**[●]**	**[●]**	**[●]**	
December	**[●]**	**[●]**	**[●]**	**[●]**	

Only the difference between the more adverse recorded weather and the equivalent measurement given above is taken into account in assessing a compensation event.

Annexure B: Insurance provided by the *Employer*

These notes are provided as guidance to tendering contractors and the Contractor about the insurance provided by the Employer. The Contractor must obtain its own advice. Details of the insurance itself are available from the internet web link given below.

1. For the purpose of *works* contracts, insurance provided by Eskom (the *Employer*) has been arranged on the basis of "project" or "contract" value, where the value is the total of the Prices at Completion of the whole of the *works* including VAT.

   A "project" is a collection of contracts or work packages to be undertaken as part of a single identified capital expansion or refurbishment of a particular asset or facility.

   A "contract" is a single contract not linked to or being part of a "project".

2. For ECC3 there are three main "formats" of cover and deductible structure; Format A, Format B and Format Dx.

   Format A is for a project or contract value less than or equal to R350M (three hundred and fifty million Rand) inclusive of VAT.

   Format B is for a project or contract value greater than R350 M (three hundred and fifty million Rand) inclusive of VAT.

   In the case of contracts / packages within a project:

   - For a contract / package of R50M which is part of a R400M project, Format B will apply
   - For a contract / package of R250M which is part of a R6 billion project, Format B will apply;
   - For a contract / package of R120M which is part of a R350M project Format A will apply;

   For a contract which is not part of a project the same limits apply:

   - For a contract of R50M, Format A will apply
   - For a contract of R355M, Format B will apply.

   Format Dx applies only to Distribution Division projects and contracts. If a Distribution Division project or contract exceeds the Format A limit, the Eskom Insurance Management Services [EIMS] need to be contacted for advice on how to formulate the insurance cover. Cover and deductibles for Distribution Division are per the relevant policy available on the internet web link given below.

   Format A generally applies to Transmission Division projects and contracts. If a Transmission Division project or contract exceeds the Format A limit, the Eskom Insurance Management Services [EIMS] need to be contacted for advice on how to formulate the insurance cover.

3. Tendering contractors should note that cover provided by the *Employer* is only per the policies available on the internet web link listed below and may not be the cover required by the tendering contractor or as intended by each of the listed insurances in the left hand column of the Insurance Table in clause 84.2. In terms of clause 84.1 "the *Contractor* provides the insurances stated in the Insurance Table except any insurance which the *Employer* is to provide". Hence the *Contractor* provides insurance which the *Employer* does not provide and in cases where the *Employer* does provide insurance the *Contractor* insures for the difference between what the Insurance Table requires and what the *Employer* provides.

4. When the Marine Insurance is required the *Contractor* needs to obtain a copy of the latest edition of Eskom's Marine Policies Procedures found at internet website given below.

5. **Further information and full details of all Eskom provided policies and procedures may be obtained from:**

http://www.eskom.co.za/live/content.php?Item_ID=9248

C1.2 Contract Data

Part two - Data provided by the *Contractor*

Notes to a tendering contractor:

1. Please read both the NEC3 Engineering and Construction Contract (April 2013) and the relevant parts of its Guidance Notes (ECC3-GN)[2] 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 pages 156 to 158 of the ECC3 (April 2013) Guidance Notes.
2. The number of the clause which requires the data is shown in the left hand column for each statement however other clauses may also use the same data
3. Where a form field like this [ ] appears, data is required to be inserted relevant to the option selected. Click on the form field ***once*** and type in the data. Otherwise complete by hand and in ink.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The *Contractor* is (Name): Address Tel No. Fax No.	
11.2(8)	The *direct fee percentage* is The *subcontracted fee percentage* is	**%** **%**
11.2(18)	The *working areas* are the Site and	
24.1	The *Contractor's* key persons are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job Responsibilities: Qualifications: Experience:	

[2] Available from Engineering Contract Strategies Tel 011 803 3008, Fax 011 803 3009 or see www.ecs.co.za

		CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .		
11.2(3)	The *completion date* for the whole of the *works* is			
11.2(14)	The following matters will be included in the Risk Register			
11.2(19)	The Works Information for the *Contractor*'s design is in:			
31.1	The programme identified in the Contract Data is			
A	**Priced contract with activity schedule**			
11.2(20) 11.2(30)	The *activity schedule* is in The tendered total of the Prices is	**(in figures)** **(in words), excluding VAT**		
	Data for Schedules of Cost Components	*Note "SCC" means Schedule of Cost Components starting on page 60, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC3 (April 2013).*		
A	**Priced contract with activity schedule**	**Data for the Shorter Schedule of Cost Components**		
41 in SSCC	The percentage for people overheads is:	**%**		
21 in SSCC	The published list of Equipment is the last edition of the list published by The percentage for adjustment for Equipment in the published list is	**Minus %**		
22 in SSCC	The rates of otAher Equipment are:	**Equipment**	**Size or capacity**	**Rate**
61 in SSCC	The hourly rates for Defined Cost of design outside the Working Areas are **Note: Hourly rates are estimated 'cost to company of the employee' and not selling rates.** **Please insert another schedule if foreign resources may also be used**	**Category of employee**	**Hourly rate**	

62 in SSCC	The percentage for design overheads is	**%**
63 in SSCC	The categories of design employees whose travelling expenses to and from the Working Areas are include in Defined Cost are:	

PART 2: PRICING DATA
ECC3 Option A

Document reference	Title	No of pages
	This cover page is	1
C2.1	Pricing assumptions: Option A	2
C2.2	The *activity schedule*	3
	Total number of pages	6

C2.1 Pricing assumptions: Option A

How work is priced and assessed for payment

Clause 11 in NEC3 Engineering and Construction Contract, (ECC3) Option A states:

Identified and defined terms 11 11.2

(20) The Activity Schedule is the *activity schedule* unless later changed in accordance with this contract.

(27) The Price for Work Done to Date is the total of the Prices for

- each group of completed activities and
- each completed activity which is not in a group.

A completed activity is one which is without Defects which would either delay or be covered by immediately following work.

(30) The Prices are the lump sum prices for each of the activities on the Activity Schedule unless later changed in accordance with this contract.

This confirms that Option A is a lump sum form of contract where the work is broken down into activities, each of which is priced by the tendering contractor as a lump sum. Only completed activities are assessed for payment at each assessment date; no part payment is made if the activity is not completed by the assessment date.

Function of the Activity Schedule

Clause 54.1 in Option A states: “Information in the Activity Schedule is not Works Information or Site Information”. This confirms that specifications and descriptions of the work or any constraints on how it is to be done are not included in the Activity Schedule but in the Works Information. This is further confirmed by Clause 20.1 which states, “The *Contractor* Provides the Works in accordance with the Works Information”. Hence the *Contractor* does **not** Provide the Works in accordance with the Activity Schedule. The Activity Schedule is only a pricing document.

Link to the programme

Clause 31.4 states that “The *Contractor* provides information which shows how each activity on the Activity Schedule relates to the operations on each programme which he submits for acceptance”. Ideally the tendering contractor will develop a high level programme first then resource each activity and thus arrive at the lump sum price for that activity both of which can be entered into the *activity schedule*.

Preparing the *activity schedule*

Generally it is the tendering contractor who prepares the *activity schedule* by breaking down the work described within the Works Information into suitable activities which can be well defined, shown on a programme and priced as a lump sum.

The *Employer*, in his Instructions to Tenderers or in a Tender Schedule, may have listed some items that he requires the *Contractor* to include in his *activity schedule* and be priced accordingly.

It is assumed that in preparing his *activity schedule* the *Contractor:*

- Has taken account of the guidance given in the ECC3 Guidance Notes pages 19 and 20;
- Understands the function of the Activity Schedule and how work is priced and paid for;
- Is aware of the need to link the Activity Schedule to activities shown on his programme;
- Has listed and priced activities in the *activity schedule* which are inclusive of everything necessary and incidental to Providing the Works in accordance with the Works Information, as it was at the time of tender, as well as correct any Defects not caused by an *Employer's* risk;
- Has priced work he decides not to show as a separate activity within the Prices of other listed activities in order to fulfil the obligation to complete the *works* for the tendered total of the Prices.
- Understands there is no adjustment to the lump sum Activity Schedule price if the amount, or quantity, of work within that activity later turns out to be different to that which the *Contractor* estimated at time of tender. The only basis for a change to the Prices is as a result of a compensation event.

An activity schedule could have the following format:

C2.2 the *activity schedule*

Item No	Activity Description	Qty (total)	Rands (each)	Rands (total)
1	**General**			
1.1	Site Establishment (considering weather conditions and storage)	Sum		
1.2	Compilation & Approval of Safety File prior to commencement of project	Sum		
1.3	Site de-establishment	Sum		
2	**Design**	Sum		
3	**Installation and Commissioning**			
3.1	**Section 1 - Completion**	Sum		
	Supply/Delivery of Material (Instrumentation and power cables)	Sum		
	Installation	Sum		
	Decommissioning/Removal of infrastructure	Sum		
	Commissioning/Final inspections	Sum		
	As-built documentation and data pack	Sum		
4	Documentation	Sum		
	TOTAL (excl VAT)			

NOTES:

1. Please refer to minimum quantities in Part C3.1 (Appendix I) for base equipment requirements.

Part 3: Scope of Work

Document reference	Title	No of pages
	This cover page	1
C3.1	*Employer*'s *Works* Information	
C3.2	*Contractor*'s *Works* Information	
	Total number of pages	78

C3.1: *EMPLOYER*'S WORKS INFORMATION

Contents

Description of the *works*

1 Executive overview

This document provides the *Employer*'s technical specifications relating to the works required at the Eskom Lethabo Power station (the *Employer*'s site) in the Free State Province of South Africa, South East of Vanderbijlpark and Sasolburg. The site coordinates are 26°44'15.4"S 27°58'45.6"E.

The Lethabo Power Station essential and emergency power supply systems are comprised of 220 V, 50 V, 48 V, 24 V, and 12 V DC direct current (DC) systems ensuring safe operation, shutdown and timeous restoration of production when normal AC power supplies are interrupted. These (DC) systems, located in substations across the site are equipped with industrial-type battery reserves coupled to power electronic rectifiers, commonly referred to as battery chargers.

Cabling systems are utilized to energise these battery chargers supplied from the various *Employer*'s 380V AC switchgear boards and to interconnect the battery reserves connected to the battery chargers.

Operating and maintenance personnel are notified of any battery charger faults through the alarm cabling interface between chargers, alarm interface panels and operator stations.

The *Employer* has initiated a project to replace the obsolete battery chargers. The project further provides enhancements to the redundancy, operability and maintainability attributes of the overall DC system design. These enhancements introduce dedicated unitised battery chargers and battery banks reducing the risk of multiple unit trips (MUTs) and additional battery tripping units (BTUs) on the outside plant.

The battery chargers and battery reserves are provided by *Others* and thus this project scope is limited to the provision of:

- Power cabling from chargers to loads and battery banks,
- Cabling between chargers and *Employer's* switchgear
- Cabling and interface panels for remote alarming between chargers and *Employer's* automated control systems.

The project boundaries are captured in this specification supported by the *Employer's* Limits of Supply and Services (LOSS), detailed in Appendix A of this document.

The *Contractor's* works include procurement, design, manufacture, factory testing, delivery and transportation, storage and preservation, off-loading, installation, site testing and commissioning, project management, quality control, training and handover of the required cabling systems and interposing relay alarm panel interfaces, ensuring a fully operational and functional DC electrical system.

2 Employer's objectives and purpose of the *works*

The objective of the project is to satisfy the following requirements, as a minimum:

- The newly installed cabling and alarm interface panels shall yield improved plant performance, availability and reliability by minimising a single point of failure.
- The design shall take into account and comply with all applicable Eskom, SANS/IEC specifications and safety standards.

3 Interpretation and terminology

The following abbreviations are used in this *Works* Information:

Abbreviation	Description
AFC	Approved for construction
AC	Alternating Current
BTU	Battery Tripping Unit
C&I	Control and Instrumentation
CV	Curriculum Vitae
DC	Direct Current
DCS	Distributed Control System
ECM	*Engineering* Change Management
EOD	Electrical Operating Desk
IDR	Interim Design Review
LOSS	Limit of Supply and Services
MUT	Multiple Unit Trip
OPCR	Outside Plant Control Room
MDL	Master Document List
MDR	Multi-disciplinary Review
MUT	Multiple Unit Trip
OBL	Outside battery limits
OEM	Original Equipment Manufacturer
PVC	Polyvinyl Chloride
SHEQ	Safety Health Environment Quality
SHERQ	Safety Health Environment Risk Quality
SWA	Steel Wire Armoured
V	Voltage
VDSS	Vendor Document Submittal Schedule
SANS	South African National Standard

The following list of definitions are used in this *Works* Information.

Definitions	Description
Contractor	The principal *Contractor* responsible for the *Works* of this project.
Control Room	Core functional entity and its associated physical structure, where operators are stationed to carry out centralized control, monitoring, and administrative responsibilities.
Controlled Disclosure	Controlled disclosure to external parties (either enforced by law or discretionary).
Employer	The Client for this project is Eskom Holdings, Lethabo Power Station.
Factory acceptance test (FAT)	It is an engineering verification activity conducted at the *Contractor's* manufacturing facility demonstrating equipment compliance with the specification(s) prescribed.
Master Document List (MDL)	*Engineering* design and document submittal and transmittal register indicative of all technical document types, inclusive of document acceptance and revision status, submitted by the *Contractor* to the *Employer* for approval.
Original Equipment Manufacturer	It is the registered legal entity that owns the rights for the manufacture, design, and repair of the equipment.
Others	*Contractor*(s) responsible for the *Works* of Other projects.
Primary Racking and Servitudes	*Employer's* existing main cable tunnels and trenches housing cable racks and cables.
Secondary Racking and Servitudes	Cable racking servitudes from the *Employer's* main cable tunnels and trenches to plant specific equipment.
Spare-Equipped-Circuit	A switchgear functional unit that is considered for spare capacity usage, but also has the necessary electrical components installed and is ready to supply power to a load. This excludes all cable(s).
Spare-Unequipped-Circuit	A switchgear functional unit that is considered for spare capacity usage but does not have the necessary electrical components installed to supply power to a load. This excludes all cable(s).
Specification	The document/s forming part of the contract in which are described the methods of executing the various items of work to be done, the nature and quality of the materials to be supplied and include technical schedules and drawings attached thereto as well as all samples and patterns.

4 Management and start-up.
5 Management meetings

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

Title and purpose	Approximate time & interval	Location	Attendance by:
Kick-off meeting	Upon contract award	Site	*Employer's* and *Contractor*'s Representatives
Risk register and review	As and when required	Projects Boardroom	*Contractor,* SHE Officer, *Employer* and Employer
Tool box sessions	Every day before commencing work	Site	All the *Contractor*'s employees.
Compensation events	As and when required	To be confirmed	*Employer's* and *Contractor*'s Representatives
Overall contract progress and feedback	Time to be agreed upon contract award	Projects Boardroom	*Employer's* and *Contractor*'s Representatives

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 *Employer* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or registers shall not be used to confirm actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of the Contract* to carry out such actions or instructions.

6 Health and safety risk management
The *Contractor* shall provide a health and safety plan based on the *Employer's* Safety, Health and Environmental (SHE) Specification.

7 Safety Requirements

1. The *Contractor* shall comply with the latest revision of the Eskom Generation Plant Safety
   a. Regulations, site-specific procedures and stipulations of the OHS Act.
2. The *Contractor* shall provide authorized supervisors to oversee their work at all times. This will be
   a. explained in the contract *Works* information (Part C4).
3. The *Contractor* complies with the following:
   a. Lethabo Power Station Health and Safety Standards as per Lethabo Power Station Health & Safety Specifications for *Contractor's* (LBS 00067 PC -H) attached to the Invitation to Tender. This procedure will be handed over during tender enquiry and will enable the successful Tenderers to compile a Health & Safety plan that has to be approved by the *Employer* before the commencement of work.
   b. Compliance with Eskom No Smoking Policy.
   c. Adhere to the OHS Act 85 of 1993.
   d. All staff will undergo Safety Induction, presented by the Lethabo Risk Management Department.
4. *Employer's* site regulations as stipulated in Form LBS 00067 PC -H, cover the following:
   a. Clean lines

b. Storage of material

c. Safety precautions and fire prevention

d. Permits to work

e. Other *Contractor*'s work

f. Representation of Sub*Contractor's*

g. Maintenance staff to witness construction

h. Supervision

i. Hand over

j. *Contractor*'s Site

8 Health and Safety Plan (Construction Regulations)

The following is required after contract award:
The *Contractor* compiles a Health and Safety Plan, filed in a Health and Safety File, comprising of the following:

a. Proof of the contracting company's own Health and Safety Policy.

b. Proof of appointments, assignments and designations as required in terms of the Occupational

c. Health and Safety Act, No 85 of 1993.

d. Proof of Risk Assessments regarding Hazards identified and proof of training of own employees regarding controls derived from the risk assessment.

e. Proof of Safe Work Procedures derived out of the Risk Assessments.

f. Proof of the contracting company's Emergency Plan that will deal with their on-site emergencies.

g. Proof of a Fall Protection Plan, if required to perform work at elevated levels developed by a competent person appointed by the contracting company.

h. Proof of Overhead Power Line protection plan to protect equipment and employees working underneath the HV power lines.

i. Proof of "Notification to perform Construction Work" – a copy of the notification addressed to the Department of Labour as required by Regulation 3 of the Construction Regulations.

j. Proof of an Induction Program (it is advised that the Lethabo SHE Rules as a Guide) and an attendance register signed by its employees before the commencement of any construction work on site.

k. Proof of the contracting company's employee's Medical Fitness Certificate which must still be valid for one year and issued by an occupational health practitioner.

l. Proof of *Contractor's* weekly Health and Safety Rep Inspections regarding its site and where work is performed

m. Proof of Personal Protective Equipment (PPE) issued to *Contractor*'s employees.

n. Proof of contracting company's Accident/Incident Reporting and Investigation System.

o. Proof of checklists and where applicable test certificates, regarding the *Contractor*'s tools, equipment, machinery, mobile equipment, vessels under pressure and any other applicable checks and verifications required by the Act.

p. A "Section 37(2) Agreement with Mandatory" needs to be drawn up by the *Employer* and co-signed by the *Contractor* before work can commence.

q. The *Contractor* shall ensure that his Sub*Contractor* does also have a Health and Safety File and that it must be accepted by the *Contractor*.

r. The Safety Officer employed by Lethabo Power Station will audit these Health and Safety Plans to ensure compliance with the provisions of the Act.

9 SHE Documentation Required from the *Contractor* at Tender

1. The *Contractor* provides the following documents in terms of Health, Safety and Environmental performance with the tender. Should the *Contractor* not provide this information it will be assumed that it does not exist:
2. Letter of good standing with COID or any insurance body
3. An Organogram indicating the names of all persons that will hold legal appointments on the project in terms of the Act
4. The expected roles, responsibilities and authority of those who are proposed to receive legal appointments
5. Provide an overview of the system/program that is utilized to manage Safety, Health and the Environment.

10 Occupational Health and Safety Act 1993, Section 37

1. The *Contractor* complies with the following:
   a. The Occupational Health and Safety Act, 1993, and all Regulations made there under.
   b. All *Employer* Safety and Operating Procedures, which are attached hereto.
2. The *Contractor* acknowledges that he is fully aware of the requirements of all the above and undertakes to employ only people who have been duly authorised in terms thereof and who have received sufficient safety training to ensure that they can comply therewith.
3. 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.
4. The *Contractor* shall appoint a person who will liaise with the *Employer* Safety Officer responsible for the premises relevant to this contract. The person so appointed shall on request:
   a. Supply the *Employer* Safety Officer with copies of minutes of all Health and Safety Committee Meetings, whenever he is required to do so.
   b. Supply the *Employer* 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 *Employer* Safety Officer of any changes thereto. The *Contractor* shall appoint a Construction Manager, Safety Officer with minimum M3+ qualification and registered with the statutory body (SACPCMP).
5. The *Employer* may, at any stage during the currency of this agreement be entitled to:
   a. Do safety audits at the *Contractor*'s premises, its work places and on its Employees.
   b. Refuse any Employees, Sub*Contractor* or agent of the *Contractor* access to its premises if such persons are found to commit any unlawful act or any unsafe working practice or are found to be not authorised or qualified in terms of the Act.
   c. Issue the *Contractor* with a work stop order or a compliance order should the *Employer* become aware of any unsafe working procedures or conditions or any non-compliance with the Act, Regulations and Procedures by the *Contractor* or any of its Employees, Sub*Contractor* or agents. Stoppages of this nature will not constitute a compensation event.

11 Occupational Health and Safety Act 1993 additional information

1. The Medical Station is available on-site during normal working hours. The after-hours emergency telephone number is 5555 or from a Lethabo phone, the extension is 5555 that can be phoned for assistance.
2. Fire protection and rescue services are available on-site 24 hours per day.
3. The *Contractor* must comply with Lethabo Power Station *Contractor's* Safety Manual.
4. The *Contractor* and his Sub*Contractor* must comply with Eskom's Non-Smoking Policy.

5. The *Contractor* and his Sub*Contractor* must comply with the Occupational Health and Safety
   a. Act 85 of 1993.
6. The following will be an advantage
   a. NOSA accreditation.
   b. NOSA MBO system in place.
7. The *Contractor* is not allowed to weld onto any steam piping, working structures or plant.
8. The *Contractor* must appoint Safety Representatives to assist the *Employer*'s Representative to:
   a. Identify and mitigate potential hazards, dangers and risks.
   b. Ensure a safe working environment.
9. The *Employer*'s Representative shall be entitled to request the *Contractor* to stop work, without penalty to the *Employer* when the *Contractor* fails to conform to the prescribed and accepted health and safety standards or contravene the health and safety sections and regulations.
10. The *Employer*'s Representative must be informed within 24 hours of any injury or damage to property or equipment.

12 Housekeeping

1. Working areas are cleaned daily. All electrical cables and hoses are routed 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*.

13 Barricading

1. 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.

14 **Radiographic examinations**

1. N/A

15 Scaffolding

1. 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 to the Employer after the contract award. The *Contractor* is responsible for the supply, erection and dismantling of its scaffolding.

16 *Contractor*'s Responsibilities

1. In addition to the safety requirements identified, the *Contractor* ensures that the following responsibilities are complied with:
2. To meet regularly, as agreed, with the *Employer* / *Supervisor* who is responsible for:
   a. Safety assurance
   b. Quality assurance
   c. Construction
   d. Commissioning
   e. Any other relevant persons or subject matters
   f. To commission equipment, if contractually required, in accordance with the commissioning committee's approved commissioning programmes and procedures. The programmes are to identify and account for the interface requirements of other *Contractor's* and the dates contained in the Contract Data.

17 Specific Risks

1. The following risks are identified by the Employer and the *Contractor* specifically addresses these risks to ensure that the work is carried out safely:

a. Working at heights
b. Dusty conditions
c. High noise area
d. Work is being carried out overhead by others
e. Work is being carried out below
f. Work in confined spaces
g. Possibility of noxious gasses
h. Possibility of fires or explosions
i. Rigging

18 Plant Safety Regulations

1. The *Employer*, on request from the *Contractor*, isolates the required plant from all sources of danger as described in the Plant Safety Regulations.
2. The *Employer*, on request, makes available a copy of the latest revision of the Plant Safety Regulations available to the *Contractor*.
3. The *Contractor* shall perform Plant Safety Regulation authorisation training for supervision as an authorised supervisor (AS).
4. The *Contractor* supplies the protective equipment necessary to carry out the works.
5. The *Contractor* is also responsible for inspecting and maintaining such equipment as required in terms of the OHS Act and local procedures.
6. The *Contractor* will comply with the *Employer*'s 'Permit to Work' system.
7. The *Contractor* shall ensure that the permit to work is issued by the *Employer*'s responsible person before commencing work in any specific area covered under this scope of work.
8. The *Contractor* conforms to all rules and regulations applicable to plant safety and completes the Workman's Register before working on the plant.
9. The *Contractor* declares any grinding and welding to be carried out on the workers' register.
10. At every permit change the *Contractor* withdraws himself/herself/his staff for that period of permit suspension/revocation and thereafter only proceeds with the works after signing onto the new permit.
11. The *Contractor* ensures that he/she/all sub-*Contractor*/personnel/staff/his visitors are medically, physically and psychologically fit to enter the Lethabo Power Station, and specifically any confined space.
12. The onus is on the *Contractor* to ensure that the correct confined space requirements and tests have been done or met by the Employer before entry into any confined space or hazardous plant areas.
13. The *Contractor* is prohibited from entering Radiation Areas.
14. The *Contractor* ensures that all personnel are competent to carry out the work. Proof of competency for technical and safety aspects must be available as and when required on-site.
15. The *Contractor* shall comply with the health and safety requirements as per Eskom's Rules and Regulations

19 Environmental constraints and management

1. Contactor to be familiarized with Lethabo Environmental statement of commitment (PS010). The SHE File shall be approved by the Environmental department. Lethabo has an Environmental Policy, to which the *Contractor* and his employees must adhere. It is the responsibility of the *Contractor* to ensure that he obtains copies of the Lethabo Environmental Policy, the legal register applicable to his area of responsibility, the *Contractor* shall submit an Aspect and Impact Register and Environmental management plan that complies with the ISO 14001: 2015 standard and the Lethabo procedures (applicable to the *Contractor*'s area of responsibility) and to familiarize themselves on such procedures, within 30 days from the date of commencement of work at Lethabo, to assist the *Contractor* and his/her employees to prevent pollution and to comply with legislative requirements. Copies of the above-mentioned documents shall be obtained from the Employer or Environmental Officer on the first day before the commencement of work at Lethabo. The *Contractor* shall submit proof to the Environmental Officer of Lethabo that he and his employees have done all the necessary training on procedures and Policies supplied to them and that they do understand the contents of the procedures, registers, and policies and shall adhere to them at all times. Self-audits during work execution will be conducted weekly whereby environmental risks are identified. The *Contractor* shall comply with the LBE22005 Environmental spill management procedure and LBE22004 Environmental waste management procedure. The *Contractor*'s SHE File shall be approved by the Environmental Department using LFM 443 checklist.
2. The *Contractor* shall report all incidents or risks whilst on the job to the Eskom Project leader who will inform the environmental department.
3. The *Contractor* adheres to the following rules:
   a. Provide sufficient storage containers, labelled depicting general or hazardous waste and store them in a designated storage area
   b. No hazardous waste may be stored for a period of more than 90 days on the Lethabo premises.
   c. Ensure that all hazardous waste is disposed of at a licensed Class H disposal site. A copy of the hazardous waste disposal certificate is submitted to the Employer.
   d. Ensure that all other general waste is disposed of at the local municipal waste dump.
   e. Ensure that the *Contractor*'s site does comply with the general good housekeeping practices.
   f. Redundant materials are moved to allocated sites. No scrap shall be stored in the *Contractor*'s yard.
   g. Scrap is to be cleared from the site daily.
4. The non-adherence to the Lethabo Environmental policy and rules could result in the termination of this contract.

20 Quality assurance requirements

The *Contractor* shall conform to quality requirements as per ISO 9001:2015 and Supplier Quality Management Specification 240-105658000 (also known as QM58). If the *Contractor* is registered, the appropriate ISO 9001:2015 Registration certificate of conformance must be supplied with the tender.

21 Quality Management System

1. The Supplier shall prepare and submit quality documentation as per the tender selected category (indicated in Form A) using the tender returnable document.
2. By signature on Form A, the *Contractor* acknowledges and agrees to comply with and adhere to Eskom's policies and procedures (current and/or latest revisions) including the Supplier Contract Quality Requirement Specification (QM58).
3. The Supplier further ensures that the outsourced product/service programmes conform to the requirements of the *Works* Information
4. The Supplier shall compile and submit a Contract Quality Plan that is specific to SOW; it shall be reviewed and signed off by Eskom technical /relevant skilled personnel before work commencement or within 3 days after a contract has been awarded to the Supplier. The plan shall address the minimum requirements as per ISO 10005

22 Access to the Supplier and Sub-suppliers premises and facilities

1. Should the need arise, supplier capability and capacity assessment shall be performed including performance on quality–related aspects

23 Control of nonconforming output

1. The Supplier shall conform to the requirements of QA/QC or inspections method to be conducted on the Sub-supplier and suppliers of all materials. This level should be based on the criticality of equipment and be controlled in a form of a QCP
2. The QCPs shall be approved by Eskom System *Employer* & Quality Controller Inspector before execution.
3. The Supplier shall adhere to all interventions (Witness and Hold) points during execution.
4. The Supplier shall compile a data book for the SOW executed within one (1) week after completion of work.

24 Performance Inspection and testing

1. The Supplier shall ensure that performance inspection and testing are conducted in accordance with SANS 9, ISO 4309.
2. Certificates shall be signed by LMI with his/her registration number.

25 Contract Quality Management Plan Requirement

1. The *Contractor* prepares a contract quality management plan that where appropriate, indicates the following:
    a. Indicates the interface with the *Contractor's* quality system and applicable documents such as procedures and work instructions
    b. Establishes communication channels between the *Contractor* and the Quality *Employer* / Employer in respect of quality and the integration of such with the prescribed contract communication channels
    c. Indicates how specific sub*Contractor's* will be monitored
    d. Identifies items or activities for which quality control plans will be prepared
    e. Identifies the specifications, drawings and acceptance criteria for material for which quality control plans are not required
    f. Identifies the areas or processes requiring special controls
    g. Index of items to be manufactured, refurbished and newly purchased
    h. How quality records will be controlled and retained (Description of how all quality records shall be controlled (e.g. identified, completed, retained and disposition method) Do not attach a procedure
    i. Identifies the *Contractor*'s Management Representative and personnel responsible for the control of quality activities and their relationship to the *Contractor*'s management structure
    j. Identifies the documents which are to be submitted to the Employer
    k. Indicates the *Contractor*'s quality monitoring programme
2. The *Contractor* periodically updates the contract quality management plan to reflect changes in any of the above details. The frequency of such updates is determined by the Quality *Employer* but will not be greater than one year.

26 Quality Control Plan

1. The *Contractor*'s or Sub*Contractor*'s quality control plans cover inspection and test proposals for items or activities to be supplied as part of the works.
2. The quality control plan indicates the following as appropriate:
    a. The identification of the item.

b. A list of the sequence of operations including inspections and tests. (Please list the high-level activities sequentially from 1st activity to the last activity)

c. The identification of the specification, drawings or procedures for each operation.

d. The acceptance criteria regarding the appropriate technical specification, in-house, national or international standard and relevant clause number.

e. The inspections and tests the *Contractor* has nominated for hold and witness points.

f. Provision for inspections and tests nominated by the Quality *Employer*.

g. Provision for inspection status indication.

h. Inspection and test records are generated by the *Contractor*.

3. Project Name/Contract Title

a. The Quality *Employer* and Employer to allow for insertion of his specific requirements, including hold, review of the quality control plans and witness points, before the commencement of work. The *Contractor* does not commence work until the Employer accepts.

27 Programming constraints

1. The *Contractor* shall submit the first programme to the Employer for acceptance within the period stated in the Contract Data and it must be updated as per the intervals prescribed in the Contract Data.

2. The Accepted Programme at the Contract Date serves as a baseline for the execution of the works until the latter of the defects date or the end of the defects correction period. This baseline is shown on all subsequent graphical presentations of revised programmes.

3. The *Contractor* adheres to the following programming constraints:

a. The *Contractor* shall submit a program, compiled in Microsoft Project/Primavera or a similar program, which will provide details of the list of activities and the duration of each activity. The program should be no longer than 3 years.
b. The Approval of Detailed Design shall be limited to 3 months.
c. The Duration for execution shall be in accordance with the accepted program from the day access is granted to the plant.
d. The program shall be updated weekly and will be used to manage all activities.
e. The *Contractor* submits a bar chart program within two weeks after contract award as specified in the Contract Data, showing the following:
- The early start and early completion date of each activity.
- The late start and late completion of each activity Planned completion.
- The order and planning of operations which the *Contractor* plans to do to provide the works.
- The *Contractor* prepares and submits an update, seven days after the start date, showing actual progress and the effect upon the remainder of the activities to be completed.

28 Progress reporting

1. The *Contractor* submits, together with the progress reports, a written report which contains the following:

a. Statement and report on those sections of the works where delay against the programme has occurred (if any), together with the reasons why the delay has occurred and a plan denoting the action to be taken and the period necessary to recover such delay.
b. Statement and report on those sections of the works that are currently ahead of the programme (If any).
c. The impact of any programming changes arising is reflected in the revised forecast rate of invoicing schedules and resource schedules.

29 *Contractor*'s management, supervision and key people

1. The *Contractor* is to provide a detailed organogram at tender. The organogram must indicate the employee's details. In the event of any person within the *Contractor*'s organogram changing, the *Contractor* is to obtain approval for the replacement from the Employer.

2. The *Contractor* shall provide his authorised supervisor (AS) as required by the Permit to Work system on-site during the duration of the works.

30 Invoicing and payment

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

The *Contractor* shall address the tax invoice to
Lethabo accounts payable section (APS).
Private Bag x 415
Vereeniging
1930

and include on each invoice the following information:

a. Name and address of the *Contractor*.
b. The contract number and title;
c. *Contractor*'s VAT registration number;
d. The *Employer*'s VAT registration number 4740101508;
e. The total Price for Work Done to Date that the *Contractor* has completed;
f. Other amounts to be paid to the *Contractor*;
g. Less amounts to be paid by or retained from the *Contractor*;
h. The change in the amount due since the previous payment being the invoiced amount - excluding VAT, the VAT and including VAT;
i. The original invoice together with the Employer's payment certificate shall be emailed to Invoiceseskomlocal@eskom.co.za

31 Insurance provided by the *Employer*

1. Refer to section 8 clause 84.

32 Contract change management

1. The change management process for addressing changes in the contract shall be as follows;
   a. All requests for contract changes shall be submitted in writing by the *Contractor* to the Employer as per the terms and conditions of the contract.
   b. The Employer shall follow the prescribed requirements for managing contract changes as per his/her delegation of authority.
   c. Changes that are not within the delegated authority of the Employer will be submitted for approval to the relevant adjudicating authority in accordance with Procurement and Supply Chain Management Procedure, 32-1034.
   d. The *Contractor* shall ensure that all approved changes are documented and kept as a record.

33 *Contractor* Requirements

1. All scaffolding and rigging requirements where applicable shall be the responsibility of the *Contractor*.
2. The *Contractor* shall be responsible for the supply of all the equipment and tools to conduct the works.
3. The construction price on the price list should cater for equipment, tools and scaffolding and rigging cost.
4. The *Contractor* shall appoint one or more competent persons as the authorized supervisor who shall undergo 5 days of authorized supervisor training.
5. The *Contractor*'s authorized supervisor would be responsible to carry out duties outlined in the Eskom plant safety regulations.
6. The *Contractor* shall allow in his program, 3 weeks for the authorized supervisor training and panel interview before commencing with the works on site.
7. During execution, the *Employer* shall do random SHERQ audits.

8. The *Contractor* shall adhere to the agreed schedule and apply project management principles to avoid delays.
9. No work shall commence without the authorised supervision and or availability of key personnel on-site as required by the legislation.
10. The *Contractor* shall deploy candidates or personnel with the required qualifications and previous experience.
11. Toolbox talk and risk assessment are to be done every day before work commencement.
12. The risk register shall be signed by all personnel before the work commencement.
13. The *Contractor* shall provide a site diary on site to keep a record of all daily site activities/events and instructions by the Employer
14. The *Contractor* shall not act or execute any instruction made by any person without the Employer's knowledge.

34 Provision of bonds and guarantees

1. The *Contractor* shall refer to the Contract Data.

35 Records of Defined Costs, payments & assessments of compensation events kept by the *Contractor*

1. To substantiate the Defined Cost of Compensation Events, the *Employer* may require the *Contractor* to keep records of amounts paid by him for people employed by the *Contractor*, Plant and Materials, work subcontracted by the *Contractor* and Equipment.

36 Training workshops and technology transfer

1. Maintenance, operating and engineering training on the new equipment shall be based on the official OEM-certified training.
2. The *Contractor* and *Employer* agree on the most suitable training content.
3. The *Contractor* compiles training manuals for official training courses and submits them for acceptance.
4. The *Contractor* shall provide two (x2) training sessions for a total of twelve (x12) Eskom employees from maintenance, operating and engineering.
5. Training must be conducted on the functionality and operation of the equipment as well as precautions which should be taken to ensure the long life of the equipment.
6. Training must be conducted on the correct removal, configuration and installation of the equipment.
7. Other activities that the Contractor deems important maintenance items must also be included in this training.

37 *Engineering* and the *Contractor*'s design
38 *Employer*'s design

39 Existing Plant

1. The *Employer* provides the following documentation as input to the *Contractor's* tender submission and *Contractor's* detailed design.
2. **Error! Reference source not found.** defines the scope boundaries for both the Employer and Contractor.
3. **Error! Reference source not found.** Vendor Document Submittal Schedule provides all design documentation deliverables of both the Employer and Contractor from tender phase to project completion and handover.
4. Appendix C: DC Supply Equipment List provides a summary of affected charger and battery reserves, located in various substations across the Station (Units 1 - 6 and common plant).
5. Appendix D provides the Employer's as-built drawings and substation layouts.
   a) Switchgear schedules specifying the charger 380V AC supply point of supply.
   b) Substation charger location layout drawings enabling cabling system design and routing.
   c) Cable destination plant equipment termination details and cable numbers.
6. **Error! Reference source not found.** contains the *Employer's* charger cabling requirements.
   a) As built power and alarm cable types.
   b) Preliminary cable types, ratings and lengths.
   c) Preliminary battery (Ah) ratings.

   The preliminary information provided by the *Employer* shall be utilized for the *Contractor's* tender submission and further developed by the *Contractor* during detailed design.

40 Project Boundaries and Battery Limits

1. The *Contractor*'s scope boundaries are defined in **Error! Reference source not found.** *Employer's* Limits of Supply and Services.
2. The *Contractor'*s boundary of scope includes:
   a) Cable number verification, disconnection, testing, design, reuse, installation, cable end-to-end termination verification and handover of cabling systems from the *Employer's* 380V AC switchgear feeder circuits to the respective battery chargers.
   b) Modification, reuse and provision of all components for unequipped spare functional units required to safely commission the charger 380V AC switchgear feeder circuits.
   c) DC cabling between chargers and battery reserves. The scope includes the re-use of all existing charger DC load cables and the installation of new DC load cables as specified by the Employer.
   d) Reuse of battery charger alarm cabling and installation of new alarm cables as specified by the Employer.
   e) Electrical bonding of chargers and battery cabinet housings.
   f) Design, installation and commissioning of alarm interposing relay panels.
3. The following is explicitly excluded from these *Works*:
   a) Provision, installation and commissioning of chargers, battery reserves and cabinets.
   b) Inter-row battery cabling.
   c) Inter charger communication cables.

41 *Employer's* Switchgear Point of Supply

1. The *Employer* is solely responsible to allocate suitable 380V AC supplies for the chargers listed in **Error! Reference source not found.**.
2. The *Employer* envisages an equivalency of charger rating for the new chargers supplied by Others. The *Employer's* switchgear 380V AC point of supply shall thus be verified, modified and reused by the *Contractor*.
3. All of the *Employer's* new chargers are of the 3phase (3ph - without neutral) type and thus the *Employer* in **Error! Reference source not found.** has tabulated the preliminary 230V AC single-phase rectifier supplies which shall be decommissioned by the *Contractor.*
4. The *Employer*'s new cabling requirements and switchgear point of supply for the single (3ph) as well as the dual (2 x 3ph) rectifier incoming 380V AC (3ph) supplies are similarly tabulated in **Error! Reference source not found.**.
5. The *Employer* has provided the incomer 380V AC (3ph) charger load requirements enabling the *Contractor* to perform verification and detailed feeder point of supply feeder circuit designs.
6. The *Contractor* shall during the detailed design phase utilize and redline the *Employers* switchgear schedules for the affected electrical points of supply.

42 *Employer's* Power Cable Identification and Termination Drawings

1. The *Employer's* cable termination, design base, indicative of the cable numbers and cable core termination details per charger are provided in the drawings listed in Appendix D.
2. The *Employer* provides the cable and termination schedule templates for the *Contractor's* detailed cable termination verification and design phase against the *Employer's* cable termination design base.
3. The *Employer* updates and issues new cable numbers where required and retires decommissioned cables from the Lethabo cable database.

43 *Employer's* Control and Instrumentation C&I Alarm Cabling

1. The *Employer* provides the existing charger alarm C&I alarm cabling interface as defined in the drawings listed in Appendix D. These schedules shall be verified by the *Contractor* during the design phase against the *Employer's* cable termination design base in accordance with section 65 of this specification.

44 Parts Of The *Works* Which The *Contractor* Is To Design

The *Contractor's* works include procurement, design, manufacture, factory testing, delivery, off-loading, storage and preservation, site verification, installation, site testing, commissioning, acceptance testing, project management, quality control, training and handover of the required cabling systems and interposing relay alarm panel interfaces, ensuring a fully operational and functional DC electrical system.

1. The *Contractor* shall safely execute the design verification, testing, disconnection, reuse, end-to-end re-termination and installation of new cables for the following:
   a) 380V AC charger supply cables from the *Employer's* switchgear to affected chargers.
   b) DC charger load cables.
   c) DC charger to battery reserve cabling.
   d) Battery charger alarm cabling.
   e) Identification, verification and decommissioning of cables.
2. Design, modification and reuse of all components required for unequipped spare 380V AC switchgear functional feeder units.
3. Electrical bonding of chargers and battery cabinet housings.
4. Design, provision and commissioning of additional alarm interposing relay panels.
5. Support to the *Employer* and Other *Contractor's* directly responsible for the charger commissioning.
6. The *Contractor* standardises the designs and installations across all affected areas.
7. The *Contractor* complies with the requirements stipulated in this specification and referenced *Employer* standards. In the event of a conflict between specified requirements, the *Employer* shall be notified to provide a resolution.
8. The *Contractor* clearly states in writing any deviation from the *Employer*'s requirements. The absence of such deviation requests shall be interpreted by the *Employer* to mean that the offer and *Works* are in full compliance.
9. Where additional information is required, the *Contractor* shall formally issue a timeous Request for Information (RFI) to the *Employer*.
10. The *Contractor* is solely responsible to collect all data required for the design from the *Employer* for completion of the *Works*. The *Contractor* performs plant walk-downs and inspections and clarifies and coordinates all relevant interfaces required.
11. The *Contractor* is solely responsible and professionally accountable for the detailed design and installation of the *Works* within the specified project boundaries defined. All submitted design documents shall be signed off by a professionally ECSA-registered electrical engineer or technologist, who will be accountable for the design and site *Works* respectively.
12. The *Contractor*'s submission of all information shall be provided in English.
13. The scope boundaries and exclusions to the *Contractor's* scope are provided in section 40.
14. As a tender returnable, the Bidder completes and provides
    a) Compliance schedule Appendix 1 confirms compliance with the *Employer's* technical requirements stipulated in section 3. Any deviations from these requirements shall be unambiguously substantiated by the *Contractor* in the compliance schedule.

45 *Contractor*'s Design and Execution Methodology

As a tender returnable, the *Contractor* provides a design, installation and execution methodology demonstrating the *Contractor's* design and execution approach in fulfilling compliance with the *Employer's* technical requirements stipulated in section 3.2.1. The *Contractor* shall develop and maintain this document for the duration of the *Works*.

In accordance with the *Employer's* design section **Error! Reference source not found.**, the *Contractor* is solely responsible for the following:

46 Verification of Design Base

1. The *Contractor* performs this activity at the commencement of the detailed design phase and critically before disconnection of any cables.
2. During the detailed design phase, the *Contractor* shall utilize the *Employer's* termination drawings provided in Appendix D to verify the as-built cable tag numbers and core termination details for the charger cables.
3. The *Contractor* notifies the *Employer* of all discrepancies, red lines the *Employer's* termination drawings and highlights the correct cable number tags and terminations on these drawings.
4. The *Contractor performs* a detailed design cable termination design for new and existing installations where required, utilizing the *Employer's* cable and termination schedule templates.
5. The *Employer* updates and issues new cable numbers where required and retires decommissioned cables from the Lethabo cable database.

47 Design Phase

The *Contractor* shall after the verification phase and by use of the *Contractor*'s verified red-lined drawings perform the following :

1. Develop and submit for each charger a cable block drawing, cable schedule and cable termination schedule utilizing the *Employer's* cable schedule 240-56176097 and termination 240-77302094 templates provided.
2. These cable and termination schedules shall be the control documents for the *Works*. The schedules developed for each charger shall reflect the existing, new and decommissioned cables.
3. The *Contractor* provides the calculation methodology utilized in performing a detailed cable rating design for the size, length and route of new cables.
4. The Contractor submits the final cable and termination schedules and cable pull cards to the *Employer* for approval.
5. The *Contractor* shall apply the *Employer*'s Eskom cable codes 0.00/1310 and 0.00/2713 for the *Works*.
6. The *Contractor* utilizes the *Employer's* switchgear functional circuit designs S11 type (0.63/8297 sheet 2) as a design reference and submits the final circuit designs, circuit general arrangement design, components and spares list to the *Employer* for acceptance.

48 Implementation Phase and Disconnection of Cables

1. The *Contractor* shall before disconnection of any cables verify the accepted design schedules and red line termination drawings performed during the verification phase.
2. Permission shall be granted by the *Employer* to commence with cable disconnection, end-to-end (source to destination) cable continuity tests and testing of cables, especially for unlabelled cables.
3. The *Contractor* labels and disconnects all charger cables at the charger terminals. The *Contractor* drops or neatly positions the cables in an area permitting *Others* to remove and install the new chargers.
4. The *Contractor* shall make provision for testing after disconnection, at the early phase of execution, determining the condition of the cables that cannot be reused and submits this report to the *Employer* for acceptance.
5. The *Contractor* is required to measure off, test, gland and re-terminate the cables on completion of the equipment installation performed by Others.

6. The *Contractor* performs a final safety continuity test and safety clearance shall be performed ensuring the plant is safe to energise.
7. The *Contractor* disconnects the existing charger earthing systems.

49 Cable Testing

1. Disconnection, tracing of unlabelled cables and testing of cables shall be performed by the *Contractor* in accordance with 240-56227443, confirming technical suitability for re-use of the cabling systems installed. The testing of these cables shall be witnessed and signed off by the *Employer* or *Employer's* representative and non-compliant cables shall be replaced by the *Contractor*. The test results of all cables including installed deficient cables shall be provided to the *Employer* for acceptance.

50 Cable Handling, Management and Preservation

1. The *Contractor* shall provide a cable handling methodology procedure for the implementation phase with specific consideration to the element that most cables have not been tampered with since station commissioning.
2. The methodology describes the *Contractor's* approach to the implementation phase for new and existing cables concerning the quality control, testing and acceptance criteria, visual checks, cable end capping, quality control and handling minimising risk to the *Employer* with a focal point of optimisation in the re-use of the existing cables and cable accessories installed.
3. The *Contractor* shall provide and implement a cable drum management system.
    a) This data shall be compared to the *Employer's* cable delivery to the site management system and be consolidated every week.
    b) All cable deliveries to the site shall be logged on a cable drum delivery schedule provided by the *Contractor* and approved by the *Employer*.
    c) The cable drum delivery schedule shall be signed by both the *Contractor*'s representative and the *Employer*.
    d) The *Contractor* shall utilize a cable pull card system which contains the as-built status of the cables, cable length installed and drum number from which the cable has been pulled which is also logged into the cable management system.
    e) The *Contractor* provides a cable yard drum site preservation procedure for acceptance by the *Employer*
4. The *Contractor* shall provide consideration to the risk of cable drum and cable offcut theft. The *Contractor* shall provide mitigations for these risks, such as lockable containerised solutions for *Employer's* approval.

51 Cabling, Routing and Racking

1. The cabling *Works* shall strictly adhere to the Eskom Standard 240-56227443 - Generation Requirements for Control and Power Cables for Power Stations Standard.
2. The *Contractor* will reuse the existing cables, cable accessories and cable racking systems as far as reasonably and practically possible.
3. The *Contractor* shall disconnect, test and re-terminate all existing and new cables reflected in the design in accordance with the test prescripts defined in 240-56227443. Non-compliant cables such be replaced by the *Contractor*.
4. The testing of these cables shall be witnessed and signed off by the *Employer's* representative.
5. The test results of all cables including deficient cables shall be provided to the *Employer* for acceptance. The *Contractor* conducts tests on all cables where Work was performed and provides the cable test certificates and safety clearances.
6. The *Employer's* preliminary cable types, rating and estimate lengths are provided in **Error! Reference source not found.** for tender purposes and thus subject to amendment on submission of the *Contractor*'s detailed design.

52 Racking

1. The existing *Employer*'s cable racking servitudes and structures shall be reused by the *Contractor*.
2. The *Contractor* shall make provision for the design, supply and installation of cable racks and supplementary steelwork for secondary cable racking where required.

53 Cabling

1. The *Contractor* shall supply and install all cable data sheets, 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 in accordance with 240-56227443.
2. The *Contractor* provides the cable data sheets and type test reports (SANS 1507-3) in compliance with 240-56227443 par 3.3.3.1. The *Contractor* shall provide type test certifications reports and complete 240-56227443 Schedule A&B in accordance with the VDSS submission requirements.
3. The *Contractor* completes and submits the *Employer's* 240-56227443 cable schedule A&B for all cables offered.
4. As a tender returnable, the *Bidder* shall submit Appendix 2 cable schedule A&B 240-56227443 (Appendix A&B) completed in full, for the largest (mm^2) electrical LV and control and instrumentation multicore cables offered.
5. The voltage regulation (volt drop) for new AC cables shall be in accordance with 240-56227443 par 3.9.4.1 (5%) and new DC battery and DC load cables shall not be more than 1.5%.
6. The *Contractor*'s final design for new cables shall be performed in such a manner as to minimise the range of cable types and sizes, assisting the *Employer* in reduced spare holdings.
7. The *Contractor* shall provide additional new power cables from the 380 V boards interfacing with the battery chargers for the dual input configurations.
8. The *Employer* reserves the right to optimise the *Contractor's* cable and termination schedule detail design through the application of the project and engineering management procedure in section 78.
9. The *Contractor* performs end-to-end tracing and verification of unlabelled existing cables where required.
10. As a tender returnable, the *Contractor* provides:
    a) Letter of confirmation that the electrical and control and instrumentation cables offered have been type tested and compliant to SANS 1507 requirements stipulated in 240-56227443 - Generation Requirements for Control and Power Cables for Power Stations Standard 240-56227443 par 3.3.3.1.
    b) Tenderer submits cable datasheets for both the electrical and instrumentation power cables and accessories offered.

54 Single to Three-Phase Charger Cabling Requirements

1. The charger (AC) cable supply requirements for all chargers are provided in **Error! Reference source not found.**.
2. The (230V AC 1ph) charger supply cables identified in **Error! Reference source not found.** shall be decommissioned by the *Contractor* in accordance with the cable decommissioning prescripts defined in section 58.

55 New Cable Installations

1. New DC charger installations, which are not currently installed on the plant such as the unitised 220V DC chargers and common outside plant BTU systems necessitate new cabling systems to be installed by the *Contractor*.
2. These systems are indicated in **Error! Reference source not found.** for tender purposes and the *Contractor's* detailed design.

56 Dual AC input battery chargers

1. The chargers requiring dual AC charger supplies are provided in **Error! Reference source not found.**.

57 220/24 VDC Charger Load Cable Installations

1. The installations comprise of DC load distribution and DC charger to battery cables.
2. These systems are indicated in **Error! Reference source not found.** for tender purposes and the *Contractor's* detailed design.
3. The existing cable system shall be reused as far as reasonably practical.
4. The volt drop for new DC cables shall not exceed 1.5% as prescribed in 240-56227443 par 3.9.4.1.

58 Decommissioning of Cables

1. The *Contractor* shall fully comply with the Lethabo Power Station Waste Management Work Instruction (240-65666252) when disposing of any equipment not required by the project.
2. The *Contractor*'s scope includes the decommissioning of all existing cables that will not be reused as per their design of the works.
3. The cables identified for decommissioning shall not be removed by the *Contractor* due to the likelihood of damage to adjacent cables on the racking gantry. The *Contractor* shall :
   a) Cable end-to-end plant verification of the affected cables utilizing the *Employer's* termination and switchgear schedules.
   b) Redline the affected documentation indicating the cable number and "Decommissioned Status".
   c) Submit to the *Employer*, the charger cable and termination schedules inclusive of the decommissioned 1-phase cables and new 3-phase cables.
   d) Disconnect and coil the decommissioned cable on the cable rack in the substation basement.
   e) The existing cable tags shall not be removed and additional steel punched cable tags applied on both ends punched "Decommissioned" placed next to the existing label.

59 Electrical Bonding

1. The *Employer's* existing substation earthing bonding systems shall be reused by the *Contractor*.
2. The *Contractor* is responsible for the disconnection, electrical bonding and testing of all equipment defined in the scope and **Error! Reference source not found.**.
3. The electrical bonding of the equipment shall be performed by the *Contractor* in accordance with 240-56356396 Earthing and Lightning Protection Standard and 0.54-393-c30-1.

60 Modification and Reuse of *Employer's* 380V Feeder Circuits

1. The charger AC power supplies are energized from the *Employer*'s fixed pattern functional unit switchgear as defined in section **Error! Reference source not found. Error! Reference source not found.**.
2. The *Employer* is solely responsible to allocate suitable 380V AC supplies for the chargers as listed in Appendix C: DC Supply Equipment List. These supplies may be spare equipped or spare unequipped circuits.
3. The *Contractor* is responsible to reuse, verify, equip, modify the *Employer's* switchgear functional feeder supply circuits with all components, providing a fully functional and safe feeder circuit.
4. These 380V feeder circuits and circuitry shall be of the fused isolator, S11 type (0.63/8297 sheet 2), with external and internal lockout facilities in accordance with 240-56227516 par 3.3.5.
5. The existing feeder circuits are to be reused.
6. The new feeder circuits and charger rectifier AC-current ratings are provided in **Error! Reference source not found.** enabling the Contractor to perform a detailed feeder circuit design.
7. The *Contractor*'s *Works* on the *Employer's* switchgear shall conform to the *Employer's* LV switchgear standard 240-56227516.

8. The *Contractor* is responsible for the fuse selection and ratings applied for the unequipped new circuits.
9. The Contractor shall make provision for commissioning spares for each type of *Employer's* combined fuse switch fuse switch disconnector and fuses.

61 Core drilling

1. In exceptional cases where secondary racking is not possible, no cable slots are available or holes for pulling of cables, core drilling shall be performed by the *Contractor*.
2. Before drilling the exact position of the hole shall be identified, marked and indicated on the relevant drawing. The civil or layout drawing shall be provided by the *Employer* when requested by the *Contractor*.
3. No core drilling is permitted without approval in writing from the *Employer*. The as-built details shall be indicated on the drawing and be handed over to the *Employer* after the drilling.

62 Termination of cables and cores

1. The *Contractor* shall terminate all cables of the *Works* at both ends after successful testing of the cables.
2. Cable termination shall be in accordance with the standard referenced 240-56227443 - Generation Requirements for Control and Power Cables for Power Stations Standard.
3. The *Contractor* shall size all cable glands correctly, cut glands plants, install and fit cable glands to the correct position on the gland plates.
4. Splices in cable termination leads as well as terminating of more than one conductor in one lug shall not be acceptable.
5. Terminals which are on the live side of a fuse or switch shall be completely shrouded.
6. Compressed lugs shall match the conductor size and shall be compressed using the correct size crimping tool of the type to ensure that it does not release the termination lug during normal compression until the conductor crimp has been fully formed as per 0.54/5609. No damaged wiring shall be terminated. The fitting of lugs shall be done in such a way that no bare conductor is visible when the lug is compressed.
7. The stripping of insulation shall be carried out in such a way that no damage occurs to the conductor when the insulation is removed.
8. Neutral connections shall be of the same rating as the phase connections unless otherwise specified or approved by the *Employer*.
9. The majority of the existing cables to be reused are of the 3-phase + Neutral, 4-core cable type. The new chargers do not require the neutral conductor and are 3 Phase 3 wire systems as indicated in Appendix C. The *Contractor* shall not connect and decommission the neutral core utilizing a method proposed and approved by the *Employer*.

63 Wire identification

1. All wire leads shall be marked in accordance with 240-56227443 - Generation Requirements for Control and Power Cables for Power Stations Standard.
2. The numbered ferrule shall not fall off when disconnecting the wire.

64 Cable System Design Approval

1. The *Contractor* shall group the works and approval submission thereof into substation groups.
2. The *Contractor* shall for each charger within the substation provide the following for the *Employer's* approval:
   a) Cable design calculations for the new cables installed.
   b) Red Line Drawings of the *Employer's* cable termination drawings (Plant verification).
   c) Red Line Drawings of the *Employer's* switchgear schedule schedules (Plant verification).
   d) 240-56176097 *Employer's* Template Electrical Cable Schedule per charger (Detailed design).

e) 240-77302094 *Employer's* Template Electrical Termination Schedule per charger (Detailed design).

f) Cable block diagrams for each charger (Detailed design).

g) Cable routing information for each charger.

h) Cable rack designs (where applicable)

i) Cable Test certificates for each cable

j) Electrical earthing (bonding) tests and certificates

k) Safety clearance certificate

65 Control and Instrumentation Alarm Configuration

1. All battery chargers require remote alarming triggering first-line response and intervention of the plant operator or maintenance personnel.
2. The *Contractor* with the support of Others, designs, supplies, installs, tests, commissions and handovers the cabling alarm systems for the required battery charger alarm interfacing as per Figure 1, further expanded in sections **Error! Reference source not found.** to **Error! Reference source not found.** and the limits of supply and services (LOSS) Appendix A.
3. Control cabling shall be cable type UVGxACM as per Eskom drawing 0.00/02713 (Instrument Cable Code). The rated core dimension (A=0.5mm²) shall be confirmed during the detailed design.
4. The *Contractor's* control and instrumentation alarm cabling scope comprise of control cabling to and from the local alarm panels and for the entire loop from the battery charger to the station control room and outside the plant control room including all end-to-end terminations.
5. As a tender returnable, the *Contractor* shall provide a signed letter indicating compliance to the control and instrumentation scope defined within this specification section **Error! Reference source not found.**.

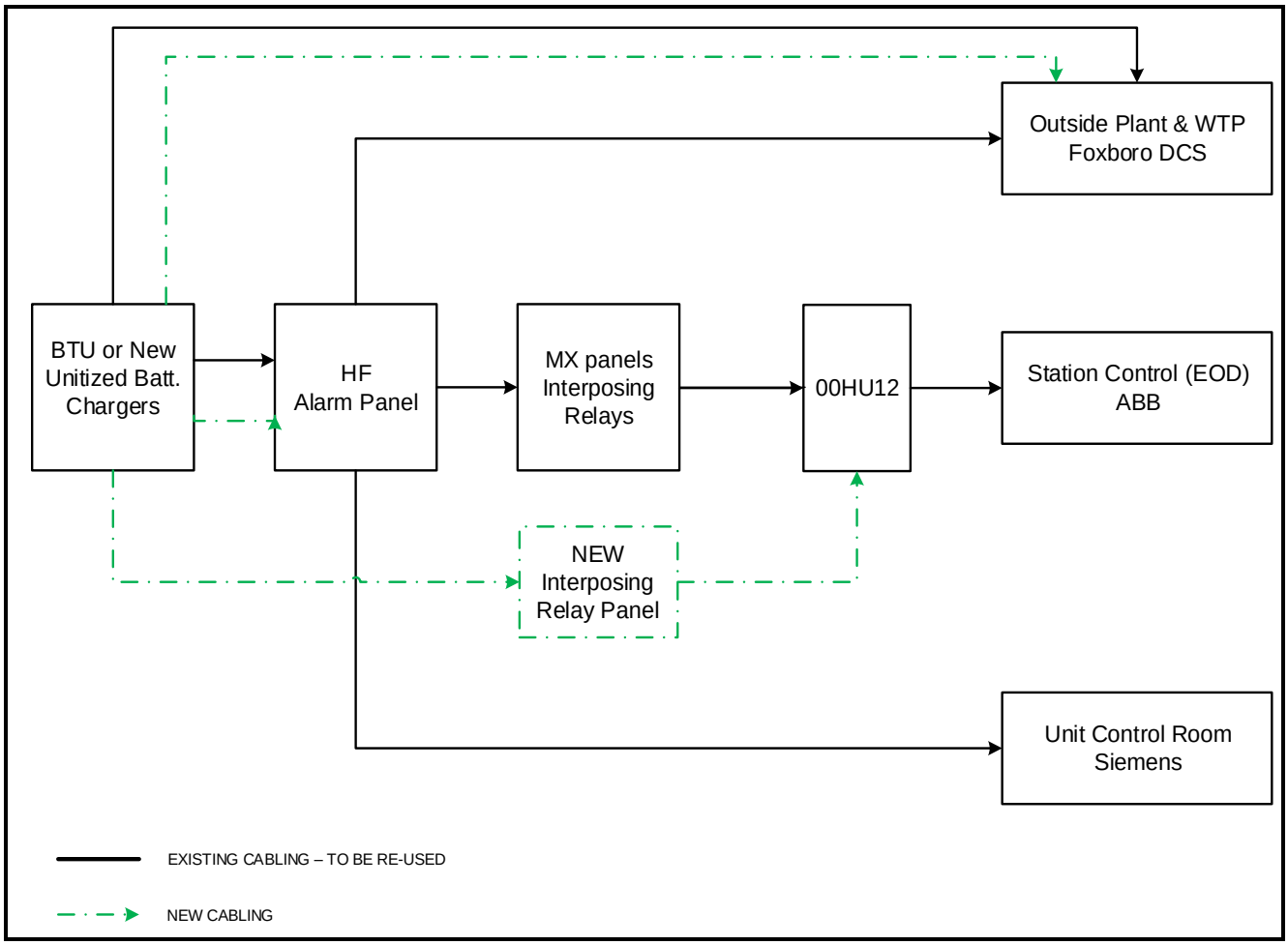


Figure 1 Alarm interfacing at Lethabo Power Station

66 Outside Plant Control Room

67 Alarm Interface Outside Plant Battery Chargers

1. Outside plant battery chargers excluding BTUs shall have remote alarms grouped as listed in **Error! Reference source not found.** routed to the Foxboro DCS outside plant control room.
2. The alarm grouping of these alarms shall be performed by Others.
3. The *Contractor* shall cater for new Foxboro Hardware IO where required. The IO modules shall be sourced from an authorised Foxboro authorised reseller.

Item	New Battery Charger Alarm Description	New Battery Charger Grouped Remote Alarm Description
1	AC Fail	AC Fail
2	Charger Fail	Charger Fail
3	Charger Unhealthy	
4	DC System Fail	DC System Fail
5	DC System Abnormal	DC System Abnormal
6	Charger Facility Abnormal	

Table 1 Alarm requirements for outside plant battery chargers

68 Existing BTU Alarm Interface

1. The outside plant BTUs shall have remote alarms grouped by Others as listed in **Error! Reference source not found.**.
2. The following outside plant BTU's alarm cabling systems shall interface with the following control systems:
   a) Sub South BTU shall interface with the Fuel Oil Plant West Foxboro DCS.
   b) Sub North BTUs shall interface with Unit 3 Equipment room.
   c) Raw water BTUs shall interface with Water Treatment Plant Foxboro DCS for OPCR alarms.
   d) Raw water BTUs shall further interface with Water Treatment Plant HF panels for EOD alarms.
   e) MMD and *Works*hop BTUs shall interface with the Foxboro DCS for OPCR alarms.
   f) MMD and *Works*hop BTUs shall interface with HF panels in the OPCR substation for EOD alarms.

69 Additional new BTU Alarm Interface

1. All additional BTUs shall have EOD alarms grouped into one alarm.
2. The outside plant BTUs shall have remote alarms grouped by Others as listed in **Error! Reference source not found.**.
3. The *Contractor* shall interface the new additional BTUs to the existing BTU alarms on the HF panels.

70 Station Control Room (SCR) Alarm Interface

1. The *Contractor* shall provide new charger alarm interface cables from the following chargers to the SCR:
   a) Existing Unitised battery chargers
   b) Existing Station battery chargers.
   c) New Unitised (12x 220VDC) battery chargers.

2. These chargers shall have remote alarms grouped by Others as listed in **Error! Reference source not found.**.

Item	New Battery Charger Alarm Description	New Battery Charger Grouped Remote Alarm Description
1	AC Fail	AC Fail
2	Charger Fail	Charger Fail
3	Charger Unhealthy	
4	DC System Fail	DC System Fail
5	DC System Abnormal	DC System Abnormal
6	Charger Facility Abnormal	Charger Facility Abnormal

Table 2 Alarm Requirements For Outside Plant BTUs And Unitised Chargers

3. All unitised and Station battery chargers that alarm to the HF Panels and Station Control Room shall maintain the grouped alarm to the existing HF Panels.

71 Interfacing with ABB Melody DCS and Symphony Plus

1. The works performed on the Station Control ABB Melody DCS, shall be executed by the original equipment manufacturer (ABB) or an authorised ABB system integrator.
2. The scope of work includes the supply, design engineering, documentation, supervision, installation, configuration, licensing and commissioning of the following:

   a) Additional Alarm input modules

   The *Contractor* shall supply, install and configure five (5) new CBI 20-P Digital Input modules in the existing rack in the HU03 panel.

   b) Cabling

   With reference to **Error! Reference source not found.**, the cabling between the new interposing relay panel and HU12 and between HU12 and the new Digital Input Modules in HU03 (Station Control (EOD) DCS) shall form part of this scope including the provision of any specialised cables, connectors, accessories and expertise.

   c) Configuring new charger inputs and updating existing charger alarms

   The *Contractor* shall add and configure all new alarms and update all existing charger alarms that form part of this Project in the Symphony Plus system for display on the alarm screens.

72 Unit Control Room

1. The grouped alarms for all the existing and new unitised chargers in the Unit Control Rooms shall remain unchanged.
2. Alarms for new additional unitised battery chargers shall be grouped into one alarm and interfaced with the existing 220 V battery charger alarm in HF panels.
3. The unitized charger's remote alarms shall be grouped with Others.
4. The *Contractor* shall make provision for the interface of the unitized battery chargers in the HF panels.

73 New Alarm Interfacing Relay Panel

1. The *Contractor* shall provide a new interposing relay panel with relays to accommodate 350 alarms, at the Station control room.
2. The interposing relay coil shall be rated to accommodate a 48 V DC power supply.
3. The relay panels shall be utilized for the following charger systems:
   a) The *Contractor* shall provide alarm cabling systems for the unitised and station battery chargers which shall relay the five alarms from each of the unitised battery chargers to the ABB DCS at the Station control room.
   b) The *Contractor* shall provide alarm cabling systems for the outside plant charger alarms which are also to be routed to Station Control (EOD) through a new loop similar to the (i.e. MMD and *Works*hop BTUs and Raw Water BTUs).
   c) Outside plant Charger alarms are to be routed to the outside plant control room as per **Error! Reference source not found.**.

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

1. The *Contractor* submits the final design documentation to the Employer for acceptance.
2. The *Contractor* is only allowed to start procurement after written approval has been received from the Employer.
3. The acceptance of the design by the Employer does not make him/her accountable for the design by the *Contractor*

75 Use of *Contractor*'s design

1. The *Contractor*'s design will become the property of the *Employer*.

76 As-built drawings, operating manuals and maintenance schedules

1. The *Contractor* supplies manuals as either Microsoft Word Documents or in the Adobe Portable Document Format.
2. The manuals must be searchable documents.
3. The manuals must not be scanned images of hardcopy manuals.
4. Each complete manual must be in one file.
5. Separate manuals must be in separate files.
6. The creation, issuing and control of all *Engineering* Drawings will be in accordance with the latest revision of 240-86973501 *Engineering* drawing Standard. Drawings issued to Eskom will be a minimum of one hard copy and an electronic copy.
7. All *Contractor's* are required to submit electronic drawings in Micro Station (DGN) format and scanned drawings in pdf format. No drawings in TIFF, AUTOCAD or any other electronic format will be accepted. Drawings issued to Eskom may not be "Right Protected" or encrypted.
8. As a tender returnable, the *Contractor* provides a letter stating their ability to update and create drawings in compliance with the *Employer's* drawing requirements. The *Contractor* shall provide loop, termination, hook-up and cable block diagram examples.

77 Design report

1. The *Contractor* submits all design reports before fabrication for approval by the *Employer*. The *Contractor* shall not commence with the fabrication of the components covered in the design report without the approval of the *Employer*. The *Contractor* shall submit the design reports timeously to allow for a 3-week review period by the *Employer* and to subsequently allow for comments from the review to be addressed without resulting in delays in delivering the *Works*. Acceptance of design reports by the *Employer* shall not relieve the *Contractor* from any form of accountability for the correctness, completeness, compliance with codes and accuracy of the design.
2. The *Contractor* remains accountable for the design.
3. The *Contractor* shall provide all documentation required in support of the *Employer's* Design Review Procedure (240-53113685) for interim and baseline design reviews.

78 Project and *Engineering* Change Management

The *Contractor* shall familiarize and strictly adhere to the following procedures:

1. The *Contractor* shall ensure that all design changes and management thereof are performed in accordance with the Eskom Project *Engineering* Change Management Procedure (240-53114026) and *Engineering* Change Procedure 240-53114002.
2. Any uncertainty regarding this procedure should be clarified with the *Employer* and clarification updates should be reflected in updated versions of this procedure.

79 Documentation control

All documents supplied by the *Contractor* shall be subject to Eskom's approval. The language of all documentation shall be in English. The *Contractor* shall include the *Employer*'s drawing number in the drawing title block. This requirement only applies to design drawings developed by the *Contractor* and his Sub*Contractor*. Drawing numbers will be assigned by the *Employer* as drawings are developed.

80 Document Identification

1. The *Contractor* is required to develop and maintain an up-to-date project document register or master document list (MDL) submitted weekly to the delegated Eskom Representative. Eskom will utilize the document register to pre-allocate design submission document numbers and return these preallocated numbers to the *Contractor* through the delegated Eskom Representative.
2. The master document list shall be provided in (Xls) format and as a minimum indicate the transmittal number, transmittal date, *Contractor's* document number, *Employer's* document number, document submission format, document revisions and review status (C1 - Accepted with no comments, C2 - Reviewed with minor comments - resubmit, C3 - Rejected, C4 - Not reviewed – information only, C5 -As built, C6 - Cancelled). The MDL is a live document and thus changes must be discussed and agreed upon by all parties. Changes in the MDL can be additional documentation to be submitted, changes in submission dates or corrections in documentation descriptions, document numbers, etc.
3. The *Employer* shall ensure that the *Contractor* is provided with the *Employer*'s latest revisions of all referenced procedures, specifications and standards. Any uncertainty regarding these documents shall be clarified with the *Employer*.

81 Document Submission

All project documents must be submitted to the delegated Eskom Representative with a transmittal note according to Project / Plant Specific Technical Documents and Records Management Work Instruction (240-76992014). Standardisation of all documents used within the project shall follow the same layout, style and formatting as described in the Work Instruction. The *Contractor* is required to submit documents as electronic and hard copies and both copies must be delivered to the *Eskom Representative* with a transmittal note.

In addition, the *Contractor* shall comply with the following standards:

1. Documentation Management Review and Handover Procedure for Gx Coal Projects (24066920003)
2. Project Documentation Deliverable Requirement Specification (240-65459834).
3. Technical Documentation Classification and Designation Standard (240-54179170).
4. The *Contractor* is required to submit documents listed in **Error! Reference source not found.** VDSS as per agreed dates with the delegated Eskom Representative.

82 Drawing Format and Layout

1. The creation, issuing and control of all *Engineering* Drawings shall conform to the following:
   a) 240-86973501 *Engineering* Drawing Standard and
   b) 36-946 *Works* Instruction for Electrical Drawings.
2. Drawings issued to Eskom will be a minimum of one hard copy and an electronic copy. All *Contractor's* are required to submit electronic drawings in Micro Station (DGN) format and scanned drawings in pdf format. No drawings in TIFF, AUTOCAD or any other electronic format will be accepted. Drawings issued to Eskom may not be "Right Protected" or encrypted.
3. The *Contractor* provides drawings for the required equipment. The *Employer* provides typical drawing templates for tender purposes only and will form the basis for the design and formatting.

83 Plant Coding and Labelling

1. The coding of the design shall be based on the latest revision of 240-131050729 Hybrid Coding Standard and the *Employer* shall undertake the coding in line with its standards. The AKZ coding shall be applied during the design review stage(s) and cross-referenced to all arrangement drawings, schematics, cables, panels, components, instructions, manuals and where practical spare parts lists. The *Contractor* shall be required to include allocated coding in the electronic design drawings.

84 Plant Labelling

1. The *Contractor* shall also manufacture and install AKZ labels for the new interposing relay panel inclusive of power and control cable numbers. Labels shall be manufactured and installed according to the *Employer*'s Plant Labelling Standard 240-71432150.

85 Reliability, Availability and Maintainability

1. The *Contractor* ensures that the installation yields a system that is reliable, available and maintainable.

86 Design and Construction Requirements

1. The *Contractor* shall utilize the *Employer*'s design information and templates as defined in this specification and submitted in accordance the Appendix B VDSS.

87 Procurement

1. At tender stage, the *Contractor* shall provide the following supplementary information and documents as requested by the *Employer*.
   a) Company Profile
   b) Proof of conformance to the Occupational Health & Safety Act 85 of 1993 and the Construction Regulations
   c) Provision of SHE requirements as specified (refer to SHE Specification document)
   d) Provisional of Quality requirements as specified, including Quality Control Management System
   e) Proof of registration with DTI (Department of Trade & Industry) and Classification of Business
   f) Company Organogram
   g) Covering Letter confirming verification, standards, and substitutions deviations (deviation schedule) and alternative.
   h) Brochures and technical information as specified
   i) List of names of key personnel that will be involved in the Construction
   j) Sub-*Contractor* information and percentage portion intending to outsource.
   k) CVs and proof of competency for all key personnel, including all qualifications and proof of NEC ECC training
2. At least three company contact details for reference purposes, where similar projects have been carried out in the past five years.

88 People

89 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.

90 BBBEE and preferencing scheme

1. The *Contractor* must comply with any Broad Based Black Economic Empowerment (B-BBEE) or preferencing scheme measures.

91 Supplier Development Localisation and Industrialisation (will become contractual requirements with contract award)

1. The *Contractor* shall provide a training proposal:

92 Accelerated Shared Growth Initiative – South Africa (ASGI-SA)

1. Not applicable

93 Subcontracting

94 Preferred sub*Contractor's*

1. The *Contractor* will be required to provide the *Employer* with all information regarding his Sub*Contractor*. The *Employer* will need to approve all *SubContractors* to be used by the *Contractor*. The *Contractor* shall be responsible for all the *activities* performed by the *Subcontractors*.

95 Subcontract documentation, and assessment of subcontract tenders

1. The *Contractor* shall be responsible for all documentation and work performed by *SubContractor*. The *Contractor* shall ensure that all work performed by the *SubContractor* is in accordance with the *Employer's Works* Information and meet all quality requirements. The *Employer* may make use of his quality control officers to conduct audits on work performed by the *SubContractor*.

96 Limitations on Subcontracting

1. The *Contractor* may not subcontract 100% of the scope of work

97 Attendance on sub*Contractor's*

1. N/A

98 Plant and Materials

99 Quality

1. N/A

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

1. All Plant and Materials are to be provided by the *Contractor*.

101 *Contractor*'s procurement of Plant and Materials

102 Spares and consumables

1. The *Contractor* shall supply, on acceptance by the *Employer*, a set of spares considered to be essential as part of the *works*.
2. The *Contractor* shall submit, on tender submission, a detailed listing of the recommended spares and prices for the *Employer's* acceptance to comply with the aforementioned requirement. The prices quoted shall include packing, delivery to and off-loading at the site, inspection and testing and adequate protection against corrosion, damage and weathering during transit and storage.

103 Tests and inspections before delivery

1. The *Employer* carries out quality inspections at his discretion.
2. All inspections and testing are to be performed in accordance with the Quality Control Procedure developed by the *Contractor*.
3. The *Employer* shall be provided access to the *Contractor's* premises for the purposes of:
   a. Establishing compliance with the contractual requirements through inspections, surveillance and audits.
   b. Witnessing the performance of any tests.
5. The *Contractor* shall obtain clearance from the *Employer* or the *Employer's* agent before despatching of the equipment. This factory release inspection does not release the *Contractor* of any of his obligations under the contract.
6. No Plant shall be released for dispatch without the AS MANUFACTURED documentation and drawings accompanying them.

104 Marking Plant and Materials outside the Working Areas

N/A

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

N/A

106* Cataloguing requirements by the *Contractor

N/A

107 Construction

108 Temporary works, Site services & construction constraints

109 *Employer*'s Site entry and security control, permits, and Site Regulations

1 Refer to Part C4 Site information

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

1. The *Contractor* shall comply with the restrictions as per site rules relating to roads, walkways and barricades. There are areas marked as red zones which the *Contractor* should comply to.
2. 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.

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

1. Normal working hours must be maintained as far as possible. The normal working hours on site will be from 07:15 to 16:30 Monday to Thursday and 07:15 to 12:00 pm on Fridays. Should the *Contractor* wish to work outside these normal working hours, he should notify the Employer in writing. The Contractor must keep records of his people on Site, including those of his Sub*Contractor* which the *Employer* or *Supervisor* has access to at any time.

112 Health and safety facilities on Site

1. It is required, for the proper coordination and execution of the *Works* that the *Contractor* (if required) has an office on-site for the duration of the installation and optimisation. A site will be made available to the *Contractor* for his yard within the power station security area. The yard is a raw site and will be used by the *Contractor* for the establishment of his offices, workshop and stores.
2. The Contractor's yard is subject to periodic inspection by the Employer. The location of the nearest point to the sewer manhole, power distribution point, portable water connection stormwater channel and road access point is indicated by the Employer. The Contractor is responsible for the connection to the closest point of supply.

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

1. Refer to paragraph 2.3 above.

114 Title to materials from demolition and excavation

1. All reusable equipment will remain the property of the *Employer*. All identified scrap materials are to be scrapped daily and disposed of at the *Employer's* scrap yard.

115 Cooperating with and obtaining acceptance of Others

1. The *Contractor* shall interface with others during execution, proper planning and communication should be effected to ensure the smooth running of the project. In cases where there is an outage, the activities shall be interfaced with others by arranging planning meetings.

116 Publicity and progress photographs

1. Lethabo Power Station is a national key point and taking photos is not allowed onsite. Should there be a need to take pictures/photos on-site permission should be requested in writing from the head of security.

117 *Contractor*'s Equipment

1. The *Contractor's* equipment shall comply as prescribed on the SHE Specification. The *Contractor* shall provide all necessary equipment to execute the works i.e. scaffolding, lifting equipment, rigs and cranes.

118 Equipment provided by the *Employer*

1. The *Employer* will not provide any equipment, The *Contractor* shall ensure all equipment as per the scope of work is catered for.

119 Site services and facilities

1. The location of the nearest point to the sewer manhole, power distribution point, portable water connection stormwater channel and road access point is indicated by the Employer. The Contractor is responsible for the connection to the closest point of supply.
2. The *Contractor* shall provide everything else necessary for Providing the *Works*.
3. Upon approval of the safety file, a site will be allocated to the *Contractor* for establishment.

120* Facilities provided by the *Contractor

Electrical equipment/appliances, lighting and power

1. Any electrical equipment or appliances used by the Contractor must comply with all relevant safety regulations and requirements as detailed in Eskom Procedures and be maintained in safe and proper working condition. The Supervisor has the right to stop the Contractor's use of any electrical equipment or appliance which, in the Supervisor'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 lead power from the point of supply to the various points where it is required, maintains the same and removes on completion.

2. Electricity will be made available for construction purposes free of charge from power points which will be indicated by the Employer. The Contractor will be responsible for the provision of the reticulation system from the point of supply. Both 220 (AC) Volt and 380 (AC) Volt are available on request. All points of supply requested by the Contractor are provided in terms of quantity and location at the discretion of the Employer. No guarantees of power supply quality are given and power supply breaks of some duration may occur without warning.

3. The Contractor makes arrangements at his own expense to improve continuity and quality of power where necessary for any reason and no claim of any nature relating to power failures is considered. No connection is made to the permanent installation at the Power Station without the prior acceptance of the Employer. The power supply is managed in accordance with the latest revision of the Employer‘s safety regulations, Operating Regulations for High-Voltage Systems and Plant Safety Regulations. The Contractor shall ensure that all electrical equipment is tested and accompanied by a COC before connections to Eskom supply are permitted.

121 Security

1. The Contractor is responsible for all security on site, viz., fencing off, night watch and access control to secure all plant, materials and the works itself. All these measures must be in accordance with any relevant regulations and standards and are subject to the Supervisor’s acceptance.

2. It is also the Contractor’s responsibility to ensure the security of all completed portions of the works before Completion.

122 Accommodation of employees

1. The *Contractor* is responsible for the provision of accommodation or meals for their personnel, and the cost thereof is to be included in his Price.

123 Sanitary facilities

1. The *Contractor* provides services, maintains and removes on Completion any facilities required and allows for same in his Price.

124 Housekeeping

1. The *Contractor’s* equipment does not impair the operation of the surrounding plant or access to the surrounding plant.

125 Plant and materials

1. The *Contractor* is to recommend the keeping of any additional stocks of spare parts based on experience gained by him during the execution of the works.

2. The *Employer* reserves the right to inspect and carry out any checks of its own that he considers necessary

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

Not applicable

127* Survey control and setting out of the *works

N/A

128 Excavations and associated water control

N/A

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

N/A

130 Control of noise, dust, water and waste

1. The *Contractor* shall comply with OHS Act for the health and safety of the plant and personnel

131 Sequences of construction or installation

1. The sequence of the works is to be approved by the client.

132 Giving notice of work to be covered up

N/A

133 Hook-ups to existing works

1. Refer to the technical Specification document

134 Completion, testing, commissioning and correction of Defects

135 Work to be done by the Completion Date

1. Clause 35.2 in ECC3 provides that the *Employer* may use any part of the works before Completion has been certified but if he does so he takes over the part of the works except if the use is for a reason stated in the *Works* Information
2. The Contractor is to prepare and submit a handover certificate to the Employer for each unit completed and the Employer shall issue a completion Certificate for each unit completed. The Contractor is to comply with the testing, commissioning and defects requirements mentioned elsewhere in this document.

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

N/A

137 Materials facilities and samples for tests and inspections

1. The *Contractor* provides all test equipment and resources for site testing, inspection and commissioning.
   a) Testing the quality of welds
   b) Authorised LMI for the load testing of Equipment.
   c) Any electrical certification that might have to be produced by the *Contractor*

138 Commissioning

1. Commissioning is defined as bringing into service all items and meeting the functional requirements and performance criteria for the *Works*. The *Contractor* is responsible for coordinating and executing commissioning (including that of the *SubContractor's*) activities in conjunction with the various departments of the *Employer* namely Operations, *Engineering*, Commissioning and QA/QC. Commissioning includes testing and verification of the stated performance criteria with:
2. Minimum Testing and Assessment criteria (as set out in previous sections of this *Works* Information document as well as supplementary requirements which will be discussed with the detailed QA/QC plan).
3. Commissioning of the *Works* will commence after the plant safety clearance (which includes all turnover packages from construction to commissioning and includes submissions such as the *Contractor*'s Mechanical Completion Certificate to the *Employer*).
4. The *Contractor* submits a recommended Commissioning and Testing Program to the *Employer* for
5. Consideration and acceptance. The accepted schedule forms the basis of the commissioning and testing program that is implemented during the overall unit commissioning and testing program.
6. Any commissioning and testing activity is confirmed on the project schedule with the *Employer* and if necessary, rescheduled (and where requested, in writing) by the *Contractor* in the appropriate forum provided 48 hours in advance to allow for the release of the plant for operation.
7. The *Contractor* interfaces directly with the station's commissioning staff and other involved *Contractor's* and is available on a 24-hour basis on-site if required for specific activities until this phase is completed.
8. The *Contractor* prepares and submits the Commissioning and Testing Procedures two months before the installation phase commences, for approval to the *Employer*, the Commissioning and Testing Procedures for all the commissioning and testing activities to be performed, detailing the methods, functionality checks, and acceptance criteria that are applicable.

9. Visually inspect the *Works* and components to verify the placing of plant labels, for their correctness and completion as per the requirements as set out in the technical evaluation, it should also be on the ITP/QCP and data book documentation.

10. The *Contractor* will provide sufficient skilled personnel for the satisfactory and timely commissioning of equipment; including the re-commissioning of existing equipment that will form part of the *Works*. The *Contractor* also provides all the test equipment for the commissioning of the *Works*.

11. The *Contractor* must certify, in writing and in an official format (Certificate of Manufacture), to the *Employer* that the equipment is in a suitable and safe condition for use before it is placed in service. The *Contractor* submits to the *Employer* on the ITP/QCP and documented in the data book for approval and endorsement of the following documents:

    a) All commissioning check sheets and tests

    b) Operational Acceptance Test reports

    c) Permits and Safety

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

1. *Works* shall be put into operation once completion has been achieved. This shall be monitored in conjunction with signed-off quality plans.

2. Where necessary the *Contractor* shall arrange with the *Employer* or *Supervisor* to test the plant installed.

140 Take over procedures

1. The *Employer* will take over the plant after he is satisfied with the optimisation. The *Contractor* will need to be on standby for the first 14 days after handover and must provide further telecommunication assistance for the whole testing duration. The *Contractor* must be available on-site within 24 hours to provide technical assistance if required during the testing period of 3 months.

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

1. After the works have been put into operation, the *Contractor* will be required to follow the Plant Safety Regulations to work on the *Works*. He shall not work without a Work Permit to gain access to the plant.

142 Performance tests after Completion

1. Employee to provide methods of performance test, performing the test and supplying the results in a document

143 Training and technology transfer

The *Contractor* shall refer to section 36 of this document.

144 Plant and Materials standards and workmanship

N/A

145 List of Applicable Standards

146 *Employer*'s Documentation for *Contractor's* Detailed Design

Link to attachments: Supporting Documents

Appendix A: Employer's Limits of Supply and Services

Appendix A LOSS.xlsx

Link to attachments: LOSS

Appendix B: Vendor Document Submittal Schedule (VDSS)


Appendix B VDSS.xlsx

Link to attachments: VDSS

Appendix C: DC Supply Equipment List


Appendix C Equipment List.xlsx

Link to attachments: Equipment List

Appendix D: *Employer's* Drawings

Appendix E *Employer's* Preliminary Cable Requirements

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 the award of the contract now become obligations of the *Contractor* per core clause 20.1.

Typical subheadings 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
C4.1	Site Information	8
	Total number of pages	9

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

147 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* ensure at all times 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.
- **Additional:** 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

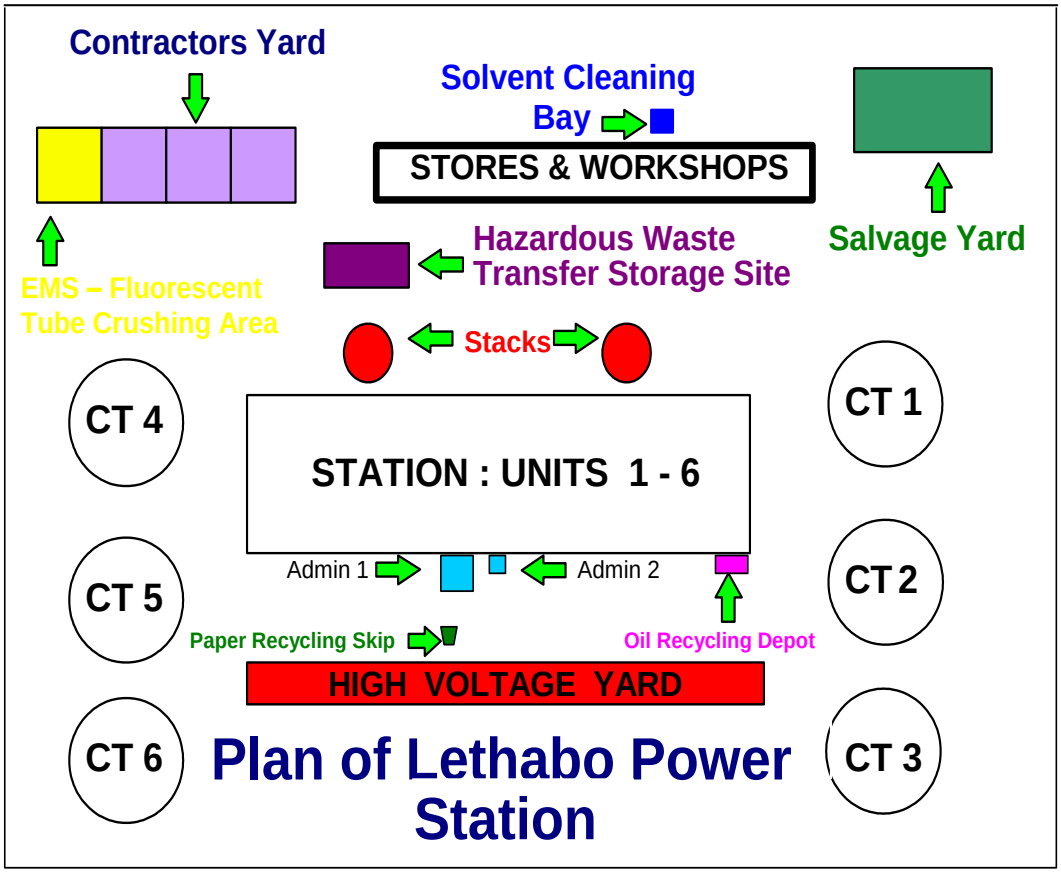
1.13 Environmental Policy and Waste Handling

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.

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.