NEC3 Engineering & Construction Contract

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

and

for **Main Turbine and Boiler Feed Pump Turbine Oil Purifier Replacement on Unit 1 -6 at Lethabo Power Station**

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

Part C1: Agreements & Contract Data

Contents:

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:

Main Turbine and Boiler Feed Pump Turbine Oil Purifier Replacement at Lethabo Power Station

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 B, C or D	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	Eskom	
	.....	.....
	(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)*	..... Eskom
Name & signature of witness	.....	.....
Date	.....	.....

C1.2 ECC3 Contract Data

Part one - Data provided by the *Employer*

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 the *Contractor*'s liability for his design to reasonable skill & 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)	**Boitumelo Sitshetshe**
	Address	**Lethabo Power Station Deneysville Rd Viljoensdrift**
	Tel	**016 457 5281**
	Fax	
	e-mail	**Mageleb@eskom.co.za**
10.1	The *Supervisor* is: (Name)	**Teboho Pitso**

	Address	**Lethabo Power Station Deneysville Rd Viljoensdrift**
	Tel No.	**016 457 5472**
	Fax No.	
	e-mail	**PitsoTS@eskom.co.za**
11.2(13)	The *works* are	**Main Turbine and Boiler Feed Pump Turbine Oil Purifier Replacement at Lethabo Power Station**
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. Work to be executed in an areas covered in 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	**3 Days**
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	**31 December 2023 (This project is Outage dependant)**
11.2(9)	The *key date*s and the *condition*s to be met are:	

	***Condition* to be met**	***key date***
1	**Design approval**	**3 weeks after the contract award**
2	**Supply and delivery**	**10 weeks after contract award**
3	**Unit works completion**	**2 weeks before the end of Outage**

30.1	The *access dates* are:	**Part of the Site** / **Date**
	1 **Any first unit that will be**	**1 months**

		on Outage after the contract placement. **Aiming Unit 5 (October 2021) and Unit 6 (August 2021)**	**before the Outage start.**
31.1	The *Contractor* is to submit a first programme for acceptance within	**2 weeks of the Contract Date.**	
31.2	The *starting date* is	**TBC**	
32.2	The *Contractor* submits revised programmes at intervals no longer than	**One week.**	
35.1	The *Employer* is not willing to take over the *works* before the Completion Date.	**The takeover will be after the completion of each unit**	
4	**Testing and Defects**		
42.2	The *defects date* is	**52 weeks after completion of each section of the *works*.**	
43.2	The *defect correction period* is	**Defects affecting system availability must be resolved within 4 (four) hours. Latent defects and defects not impacting system availability must be resolved within 2 (two) weeks after notification.**	
	except that the *defect correction period* for	**2 weeks**	
	and the *defect correction period* for	**2 weeks**	
5	**Payment**		
50.1	The *assessment interval* is	**The assessment interval will be between the 25th day of each successive month and based on the completed activities as per NEC option A guidelines.**	
51.1	The *currency of this contract* is the	**South African Rand.**	
51.2	The period within which payments are made is	**One calendar month**	
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:	**As stated in Annexure A to this Contract Data provided by the *Employer*.**
	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** **and these measurements:**
	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
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 Electrical Engineering Panel of Adjudicators by the Party intending to refer a dispute to him. (see www.ice-sa.org.za). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).**
	Address	**[●]**
	Tel No.	**[●]**
	Fax No.	**[●]**
	e-mail	**[●]**
W1.2(3)	The *Adjudicator nominating body* is:	**the Chairman of ICE-SA a joint Division of the South African Institution of Electrical 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	**The last day of the month preceding the month in which the latest date for the submission of the Tender falls. By way of example, if the last day for the submission of the Tender is 14 August of Year X, the Base Date is 31 July of Year X.**
X1.1(c)	The proportions used to calculate the	

	Price Adjustment Factor are:	**proportion**	**linked to index for**	**Index prepared by**
			non-adjustable	
	Total	**1.00**		
X2	**Changes in the law**	**NEC3 April 2013 Core Clauses will apply.**		

X5	**Sectional Completion**			
X5.1	The *completion date* for each *section* of the *works* is:	***Section***	**Description**	***Completion date***
		1	**Unit 5**	**As per outage date at the time**
		2	**Unit 6**	**As per outage date at the time**
		3	**Unit 4**	**As per outage date at the time**
		4	**Unit 3**	**As per outage date at the time**
		5	**Unit 2**	**As per outage date at the time**
		6	**Unit 1**	**As per outage date at the time**
X5 & X7	**Sectional Completion and delay damages used together**			
X7.1 X5.1	Delay damages for late Completion of the *section*s of the *works* are:	***section***	**Description**	**Amount per day**
		1	**Unit 5**	
		2	**Unit 6**	

		3	**Unit 4**
		4	**Unit 3**
		5	**Unit 2**
		6	**Unit 1**
	Remainder of the *works*		
	The total delay damages payable by the *Contractor* does not exceed:	**2% up to 15% maximum of the total price of the section will be applied to any delays**	
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 the contract amount**	
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**	
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** • **the amounts excluded and unrecoverable from the *Employer*'s assets policy for correcting the Defect (other than the resulting physical damage which is not excluded) plus the applicable deductible as at contract date.**	
X18.4	The *Contractor*'s total liability to the *Employer* for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	**the total of the Prices other than for the 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) 3 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 Z15 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 Confidentiality

Z4.1 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.

Z4.2 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*.

Z4.3 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.

Z4.4 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*.

Z4.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

Z5 Waiver and estoppel: Add to core clause 12.3:

Z5.1 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.

Z6 Health, safety and the environment: Add to core clause 27.4

Z6.1 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.

Z6.2 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.

Z7 Provision of a Tax Invoice and interest. Add to core clause 51

Z7.1 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.

Z7.2 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.

Z7.3 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.

Z8 Notifying compensation events

Z8.1 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".

Z9 *Employer's* limitation of liability

Z9.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)

Z9.2 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.

Z10 Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":

Z10.1 or had a business rescue order granted against it.

Z11 Addition to secondary Option X7 Delay damages (if applicable in this contract)

Z11.1 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.

Z12 Ethics

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

Affected Party means, as the context requires, any party, irrespective of whether it is the *Contractor* or a third party, such party's employees, agents, or Subcontractors or Subcontractor's employees, or any one or more of all of these parties' relatives or friends,

Coercive Action means to harm or threaten to harm, directly or indirectly, an Affected Party or the property of an Affected Party, or to otherwise influence or attempt to influence an Affected Party to act unlawfully or illegally,

Collusive Action means where two or more parties co-operate to achieve an unlawful or illegal purpose, including to influence an Affected Party to act unlawfully or illegally,

Committing Party means, as the context requires, the *Contractor*, or any member thereof in the case of a joint venture, or its employees, agents, or Subcontractor or the Subcontractor's employees,

Corrupt Action means the offering, giving, taking, or soliciting, directly or indirectly, of a good or service to unlawfully or illegally influence the actions of an Affected Party,

Fraudulent Action means any unlawfully or illegally intentional act or omission that misleads, or attempts to mislead, an Affected Party, in order to obtain a financial or other benefit or to avoid an obligation or incurring an obligation,

Obstructive Action means a Committing Party unlawfully or illegally destroying, falsifying, altering or concealing information or making false statements to materially impede an investigation into allegations of Prohibited Action, and

Prohibited Action means any one or more of a Coercive Action, Collusive Action Corrupt Action, Fraudulent Action or Obstructive Action.

Z12.1 A Committing Party may not take any Prohibited Action during the course of the procurement of this contract or in execution thereof.

Z12.2 The *Employer* may terminate the *Contractor*'s obligation to Provide the Services if a Committing Party has taken such Prohibited Action and the *Contractor* did not take timely and appropriate action to prevent or remedy the situation, without limiting any other rights or remedies the *Employer* has. It is not required that the Committing Party had to have been found guilty, in court or in any other similar process, of such Prohibited Action before the *Employer* can terminate the *Contractor*'s obligation to Provide the Services for this reason.

Z12.3 If the *Employer* terminates the *Contractor*'s obligation to Provide the Services for this reason, the amounts due on termination are those intended in core clauses 92.1 and 92.2.

Z12.4 A Committing Party co-operates fully with any investigation pursuant to alleged Prohibited Action. Where the *Employer* does not have a contractual bond with the Committing Party, the *Contractor* ensures that the Committing Party co-operates fully with an investigation.

Z13 Insurance

Z 13.1 Replace core clause 84 with the following:

Insurance cover **84**

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

84.2 The *Contractor* provides the insurances stated in the Insurance Table A.

84.3 The insurances provide cover for events which are at the *Contractor*'s risk from the *starting date* until the earlier of Completion and the date of the termination certificate.

INSURANCE TABLE A

Insurance against	Minimum amount of cover or minim limit of indemnity
Loss of or damage to the *works*, Plant and Materials	The replacement cost where not covered by the *Employer*'s insuranc The *Employer*'s policy deductible, as Contract Date, where covered by the *Employer*'s insurance
Loss of or damage to Equipment	The replacement cost
Liability for loss of or damage to property (except the *works*, Plant and 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	Loss of or damage to property *Employer*'s property The replacement cost where not covered by the *Employer*'s insuranc The *Employer*'s policy deductible, as Contract Date, where covered by the *Employer*'s insurance Other property The replacement cost Bodily injury to or death of a person The amount required by applicable l
Liability for 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	The amount required by the applicat law

Z 13.2 **Replace core clause 87 with the following:**
The *Employer* provides the insurances stated in the Insurance Table B.

INSURANCE TABLE B

Insurance against or name of policy	**Minimum amount of cover or minimum l of indemnity**
Assets All Risk	Per the insurance policy document

Contract Works insurance	Per the insurance policy document
Environmental Liability	Per the insurance policy document
General and Public Liability	Per the insurance policy document
Transportation (Marine)	Per the insurance policy document
Motor Fleet and Mobile Plant	Per the insurance policy document
Terrorism	Per the insurance policy document
Cyber Liability	Per the insurance policy document
Nuclear Material Damage and Business Interruption	Per the insurance policy document
Nuclear Material Damage Terrorism	Per the insurance policy document

Z14 Nuclear Liability

Z14.1 The *Employer* is the operator of the Koeberg Nuclear Power Station (KNPS), a nuclear installation, as designated by the National Nuclear Regulator of the Republic of South Africa, and is the holder of a nuclear licence in respect of the KNPS.

Z14.2 The *Employer* is solely responsible for and indemnifies the *Contractor* or any other person against any and all liabilities which the *Contractor* or any person may incur arising out of or resulting from nuclear damage, as defined in Act 44 of 1999, save to the extent that any liabilities are incurred due to the unlawful intent of the *Contractor* or any other person or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z14.3 Subject to clause Z14.4 below, the *Employer* waives all rights of recourse, arising from the aforesaid, save to the extent that any claims arise or liability is incurred due or attributable to the unlawful intent of the *Contractor* or any other person, or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z14.4 The *Employer* does not waive its rights provided for in section 30 (7) of Act 44 of 1999, or any replacement section dealing with the same subject matter.

Z14.5 The protection afforded by the provisions hereof shall be in effect until the KNPS is decommissioned.

Z15 Asbestos

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

AAIA means approved asbestos inspection authority.

ACM means asbestos containing materials.

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

Ambient Air means breathable air in area of work with specific reference to breathing zone,

which is defined to be a virtual area within a radius of approximately 30cm from the nose inlet.

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

OEL means occupational exposure limit.

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

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

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

SANAS means the South African National Accreditation System.

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

Z15.1 The *Employer* ensures that the Ambient Air in the area where the *Contractor* will Provide the Services conforms to the acceptable prescribed South African standard for asbestos, as per the regulations published in GNR 155 of 10 February 2002, under the Occupational Health and Safety Act, 1993 (Act 85 of 1993) ("Asbestos Regulations"). The OEL for asbestos is 0.2 regulated asbestos fibres per millilitre of air as a 4-hour TWA, averaged over any continuous period of four hours, and the short term exposure limit of 0.6 regulated asbestos fibres per millilitre of air as a 10-minute TWA, averaged over any 10 minutes, measured in accordance with HSG248 and monitored according to HSG173 and OESSM.

Z15.2 Upon written request by the *Contractor*, the *Employer* certifies that these conditions prevail. All measurements and reporting are effected by an independent, competent, and certified occupational hygiene inspection body, i.e. a SANAS accredited and Department of Employment and Labour approved AAIA. The *Contractor* may perform Parallel Measurements and related control measures at the *Contractor*'s expense. For the purposes of compliance the results generated from Parallel Measurements are evaluated only against South African statutory limits as detailed in clause Z15.1. Control measures conform to the requirements stipulated in the AAIA-approved asbestos work plan.

Z15.3 The *Employer* manages asbestos and ACM according to the Standard.

Z15.4 In the event that any asbestos is identified while Providing the Services, a risk assessment is conducted and if so required, with reference to possible exposure to an airborne concentration of above the AL for asbestos, immediate control measures are implemented and relevant air monitoring conducted in order to declare the area safe.

Z15.5 The *Contractor*'s personnel are entitled to stop working and leave the contaminated area forthwith until such time that the area of concern is declared safe by either Compliance Monitoring or an AAIA approved control measure intervention, for example, per the emergency asbestos work plan, if applicable.

Z15.6 The *Contractor* continues to Provide the Services, without additional control measures presented, on presentation of Safe Levels. The contractually agreed dates to Provide the Services, including the Completion Date, are adjusted accordingly. The contractually agreed dates are extended by the notification periods required by regulations 3 and 21 of the

Asbestos Regulations, 2001.

Z15.7 Any removal and disposal of asbestos, asbestos containing materials and waste, is done by a registered asbestos contractor, instructed by the *Employer* at the *Employer*'s expense, and conducted in line with South African legislation.

SDLI Requirements

The following requirements are mandatory compliance for contract award and submissions can be clarified during evaluations or negotiated before contract is awarded

3.1 CIDB Skills Development

	YES	NO
a) Is there CIDB compulsory training?	☐	☑
If *Yes,* what is the% of the Construction Skills Development Goal % (CSDG)	**0.25%**	

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

Criteria	Eskom Target	Tenderer Commitment
CSDG Percentage	0.25%	
Description	7ME	

3.2. BBBEE Compliance

	YES	NO
Is there minimum BBBEE level targeted?	☐	☑
If *Yes,* what is the BBBEE status targeted for this transaction (contractor/s will be required to submit plans to achieve the target level if not met at contract award)		

3.3. Subcontracting Requirements

	YES	NO
Is there a requirement for subcontracting?	☑	☐
If *Yes,* what is the targeted subcontracting percentage	45%	

(ED requirements can be fulfilled through subcontracting)	

Civil and Structural Engineering Requirements 10%
Electrical Engineering Requirements 25%
C&I Engineering Requirements 10%

SDLI undertakings

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

3.4. Enterprise Development

The main contractor will be required to propose development in the above mentioned district municipalities;

Support Description	Tenderer Proposal
The bidder to identify and incubate a Small Measured Entity from the above mentioned District Municipalities. Assistance could be in the form of business support/ equipment/finance. In addition, they will expected to draft an ED proposal within eight weeks of contract award stage. ED agreement must be signed with the beneficiary and sent to Eskom for review and acceptance. Progress will be monitored throughout the duration of the contract.	

3.5. Job creation

Tenderer to indicate number of Jobs to be created and/or retained from this contract:

Number of Jobs to be created	Number of Jobs to be retained

Local pool criteria:

Type of jobs	Target set (local-to-site)	Suppliers Proposal
General workers	**100%**	
Semi-skilled	**70%**	
Skilled	**30%**	

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.

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	**Lethabo Power Station**
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

11.2(3)	The *completion date* for the whole of the *works* is	31 December 2023 (This project is Outage dependant)		
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	To be accepted by the Project Manager		
A	**Priced contract with activity schedule**			
11.2(20) 11.2(30)	The *activity schedule* is in The tendered total of the Prices is			
	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	**%**		
22 in SSCC	The rates of other 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 included in Defined Cost are:			

C1.3 Forms of Securities

Pro formas for Bonds & Guarantees

For use with the NEC3 Engineering & Construction Contract

The *conditions of contract* stated in the Contract Data Part 1 include the following Secondary Options:

X1: Price adjustment for inflation

X2: Changes in the law

X5: Sectional Completion

X7: Delay damages

X15: Limitation of the Contractor's liability for his design to reasonable skill and care

X16: Retention

X18: Limitation of liability

Z: *Additional conditions of contract*

Each of these secondary Options requires a bond or guarantee "in the form set out in the Works Information". Pro forma documents for these bonds and guarantees are provided here for convenience but are to be treated as part of the Works Information.

Option X16:

The *Contractor* may provide a Retention Money Guarantee in the form stated here. When the *Employer* receives and accepts a Retention Money Guarantee exactly in the form stated he will instruct the *Project Manager* not to assess any amount be retained in terms of secondary Option X16.

The organisation providing the bond / guarantee does so by copying the pro forma document onto his letterhead without any change to the text or format and completing the required details. The completed document is then given to the *Employer* within the time stated in the contract.

Pro forma Retention Money Guarantee (may be used when Option X16 applies)

(to be reproduced exactly as shown below on the letterhead of the Bank providing the Guarantee)

Eskom Holdings SOC Limited
Megawatt Park
Maxwell Drive
Sandton
Johannesburg Date:

Dear Sirs

Reference No. **[●]** *[Drafting Note: Bank reference number to be inserted]*

Retention Money Guarantee: *[Drafting Note: Name of Contractor to be inserted]*

Project [ ] : Contract Reference: *[Drafting Note: Contractor contract reference number to be inserted]*

1. In this Guarantee the following words and expressions shall have the following meanings:-

1.1 "Bank" - means [●], [●] Branch, (Registration No. [●]); [Drafting Note: Name of Bank to be inserted]

1.2 "Bank's Address" - means [●]; [Drafting Note: Bank's physical address to be inserted]

1.3 "Contract" – means the written agreement relating to the Project, entered into between Eskom and the Contractor, on or about the [●] day of [●] 200[●] (Contract Reference No. ……. as amended, varied, restated, novated or substituted from time to time; [Drafting Note: Signature Date and Contract reference number to be inserted]

1.4 "Contractor" – means [●] a company registered in accordance with the laws of [●] under Registration Number [●]. [Drafting Note: Name and details of Contractor to be inserted]

1.5 "Eskom" - means Eskom Holdings SOC Limited, a company registered in accordance with the laws of the Republic of South Africa under Registration Number 2002/015527/30

1.6 "Expiry Date" - means the date on which the Defects Certificate is issued in terms of the Contract.

1.7 "Guaranteed Sum" - means the sum of R [●] ([●] Rand); [Drafting Note: Insert amount of Retention Money Guarantee.].

1.8 "Project" - means the……..

2. At the instance of the Contractor, we the undersigned _____ and _____, in our respective capacities as _____ and _____ of the Bank, and duly authorized thereto, confirm that we hold the Guaranteed Sum at the disposal of Eskom, as security for the proper performance by the Contractor of all of its obligations in terms of and arising from the Contract and hereby undertake to pay to Eskom, on written demand from Eskom received prior to the Expiry Date, any sum or sums not exceeding in total the Guaranteed Sum.

3. A demand for payment under this guarantee shall be made in writing at the Bank's address and shall:

3.1 be signed on behalf of Eskom by a director of Eskom or his authorised delegate.

3.2 state the amount claimed ("the Demand Amount');

3.3 state that the Contractor has failed to carry out his obligation(s) to rectify certain defect(s) for which he is responsible under the Contract (and the nature of such defect(s)) alternatively that the Demand Amount is payable to Eskom in the circumstances contemplated in the Contract.

4. Notwithstanding the reference herein to the Contract the liability of the Bank in terms hereof is as principal and not as surety and the Bank's obligation/s to make payment:

4.1 is and shall be absolute provided demand is made in terms of this bond in all circumstances; and

4.2 is not, and shall not be construed to be, accessory or collateral on any basis whatsoever.

5. The Bank's obligations in terms of this Guarantee:

5.1 shall be restricted to the payment of money only and shall be limited to the maximum of the Guaranteed Sum; and

5.2 shall not be discharged and compliance with any demand for payment received by the Bank in terms hereof shall not be delayed by the fact that a dispute may exist between Eskom and the Contractor.

6. Eskom shall be entitled to arrange its affairs with the Contractor in any manner which it sees fit, without advising us and without affecting our liability under this Guarantee. This includes, without limitation, any extensions, indulgences, release or compromise granted to the Contractor or any variation under or to the Contract.

7. Should Eskom cede its rights against the Contractor to a third party where such cession is permitted under the Contract, then Eskom shall be entitled to cede to such third party the rights of Eskom under this Guarantee on written notification to the Bank of such cession.

8. This Guarantee:

8.1 shall expire on the Expiry Date until which time it is irrevocable;

8.2 is, save as provided for in **Error! Reference source not found.** above, personal to Eskom and is neither negotiable nor transferable;

8.3 shall be returned to the Bank upon the earlier of payment of the full Guaranteed Sum or expiry hereof;

8.4 shall be regarded as a liquid document for the purpose of obtaining a court order; and

8.5 shall be governed by and construed in accordance with the law of the Republic of South Africa and shall be subject to the jurisdiction of the Courts of the Republic of South Africa.

8.6 Any claim which arises or demand for payment received after expiry date will be invalid and unenforceable.

9. The Bank chooses domicilium citandi et executandi for all purposes in connection with this Guarantee at the Bank's Address.

Signed at _____ Date _____ Bank's seal or stamp

For and behalf of the Bank

Bank Signatory: _____ Bank Signatory: _____

PART 2: PRICING DATA

ECC3 Option A

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option A	
C2.2	The *activity schedule*	

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*

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Item No.	Activity description	Total	Amount	
1	Main turbine and BFPT oil purifier detail design			R152,929.14
2	Main turbine oil purifier skid			R836,943.90
3	BFPT oil purifier skid			R592,316.63
4	Decommissioning of the old oil purifiers			
5	Labour cost (Installation and commissioning; Mechanical, C&I, Electrical and Civil)			
6	Transport cost			
7	General costs (Project management costs: site supervisor, safety officer and environmental management plan)			
	TOTAL (excl VAT)			
	TOTAL (incl VAT)			

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	

1. INTRODUCTION

The current main turbine and BFPT oil purifier skids at Lethabo Power Station were declared obsolete by the Original Equipment Manufacturer (OEM) in 1990 and 1992 respectively. The OEM can no longer supply spares and technical support for these oil purifiers. This is why they need to be replaced. The requirements provided in support of the replacement of the oil purifiers include electrical, C&I, etc. specifications.

2. DEFINITIONS

Description	Definition
Centrifuge	A device that uses centrifugal force to separate oil and water.
Lube oil	Oil used to lubricate and cool the turbine and BFPT bearings.
Stakeholder	Is considered to be anyone that has an interest in the outcome of the project.
Turbine Plant	A collection of the turbine centreline and auxiliaries plants.

3. ABBREVIATIONS

Abbreviation & Acronyms	Description
AKZ	Anlagen-Kennzeichnungs System
BFPT	Boiler Feed Pump Turbine
CoE	Centre of Excellence
C&I	Control and Instrumentation
CM	Configuration Management
DCS	Distributed Control System
ECM	Engineering Change Management
ECR	Engineering Change Request
EDMS	Electronic Document Management System
EDWL	Engineering Design Work Lead
EE	Electrical Engineering
EMAP	Engineering Management Plan
EMS	Electrical Maintenance Services
ERA	Execution Release Approval
FAT	Factory Acceptance Test
GO	General Overhaul
HMI	Human Machine Interface
HP	High Pressure
IR	Interim Repairs
ISO	International Organization for Standardization
kW	Kilowatt

Abbreviation & Acronyms	Description
LCP	Local Control Panel
LDE	Lead Design Engineer
MMS	Mechanical Maintenance Services
MSDS	Material Safety Data Sheet
NB	Nominal Bore
NCR	Non Conformance Report
NDE	Non Destructive Examination
OEM	Original Equipment Manufacturer
OES	Optical Emission Spectroscopy
PEI	Production Engineering Integration
PLC	Programmable Logic Controller
QCP	Quality Control Plan
RCA	Root Cause Analysis
ROC	Required Operational Capability
SANS	South African National Standard
SoW	Scope of Work
SRD	Stakeholder Requirements Definition
TPE	Turbine Plant Engineering
VDSS	Vendor Document Submittal Schedule

4. ROLES AND RESPONSIBILITIES

The following roles and responsibilities apply:

Person	Responsibility
Engineering	Clarification of scope if required. Quality inspections for technical adherence. Documentation review, final acceptance and sign-off
Employer	Issues the scope of work
Contractor	Execution of the specified scope of work.
Project Manager	Planning and execution of the project
Site QC	Quality inspections

5. BACKGROUND AND HIGH LEVEL SCOPE

5.1. PROJECT BACKGROUND

Lethabo Power Station has six units. The station has one main turbine oil purifier and one BFPT oil purifier per unit. The oil purifiers are used to remove water and particle contaminants from their respective lube oil systems. The station's water content specification is 200 ppm (maximum) and the cleanliness specification (particle contamination) is 15/12 (maximum) according to ISO 4406. They also heat up the oil and maintain it at a desired temperature. Lube oil is used to cool and lubricate the turbine and BFPT bearings. Both oil purifiers are centrifuges originally supplied by Alfa Laval (OEM). The main turbine oil purifier (MAB 209) was declared obsolete by the OEM in 1990 and the BFPT oil purifier (MAB 204) was declared obsolete in 1992. Spares are still available upon request but have long lead times. The OEM cannot guarantee spares availability or technical support for these oil purifier models.

For the above reasons an alternative oil purification technology, which is capable of maintaining the station's turbine lube oil specification needs to be considered. Figure 1 shows the main turbine lube oil system. The main turbine oil purifier takes suction from the bottom of the main oil tank and discharges the oil back to the tank. The current main turbine oil purifier has an operating flow rate of 13 700 l/hr, and it is operated locally.

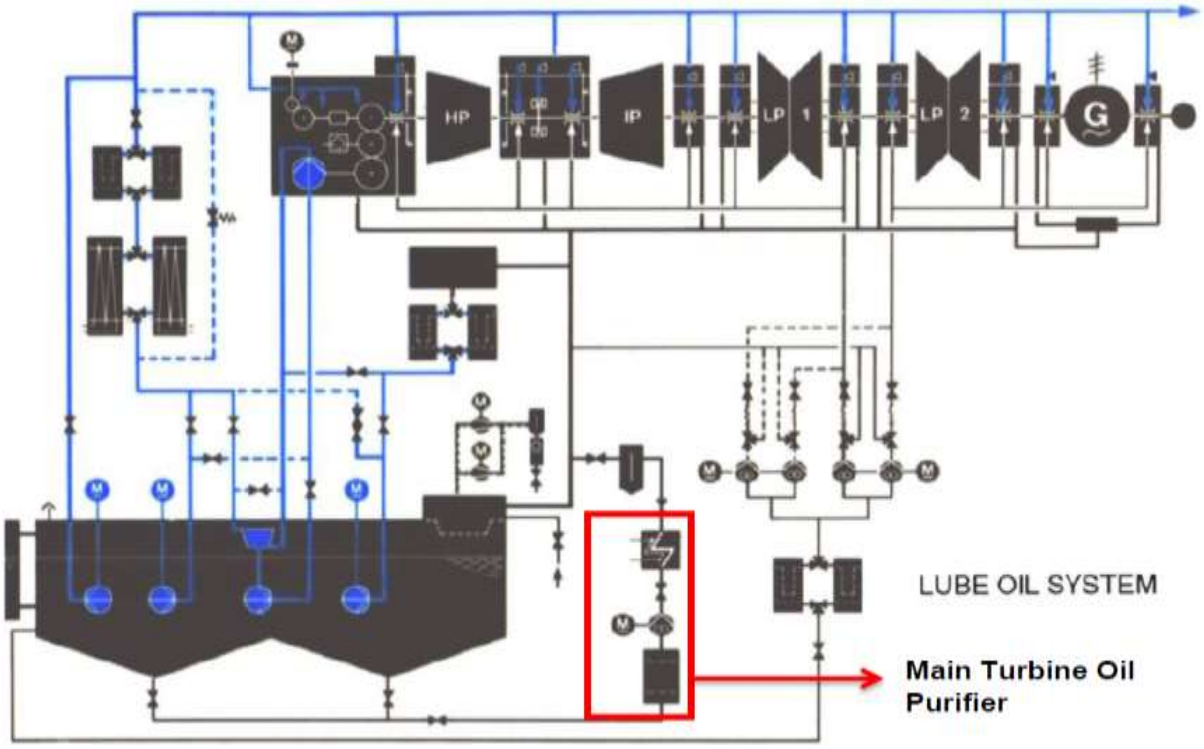


Figure 1: Main Turbine Lube Oil System

Figure 2 shows the BFPT lube oil system. The BFPT oil purifier takes suction from the bottom of the BFPT lube oil tank and discharges the oil back to the tank. The current BFPT oil purifier has an operating flow rate of 2 800 l/hr, and it is operated locally.

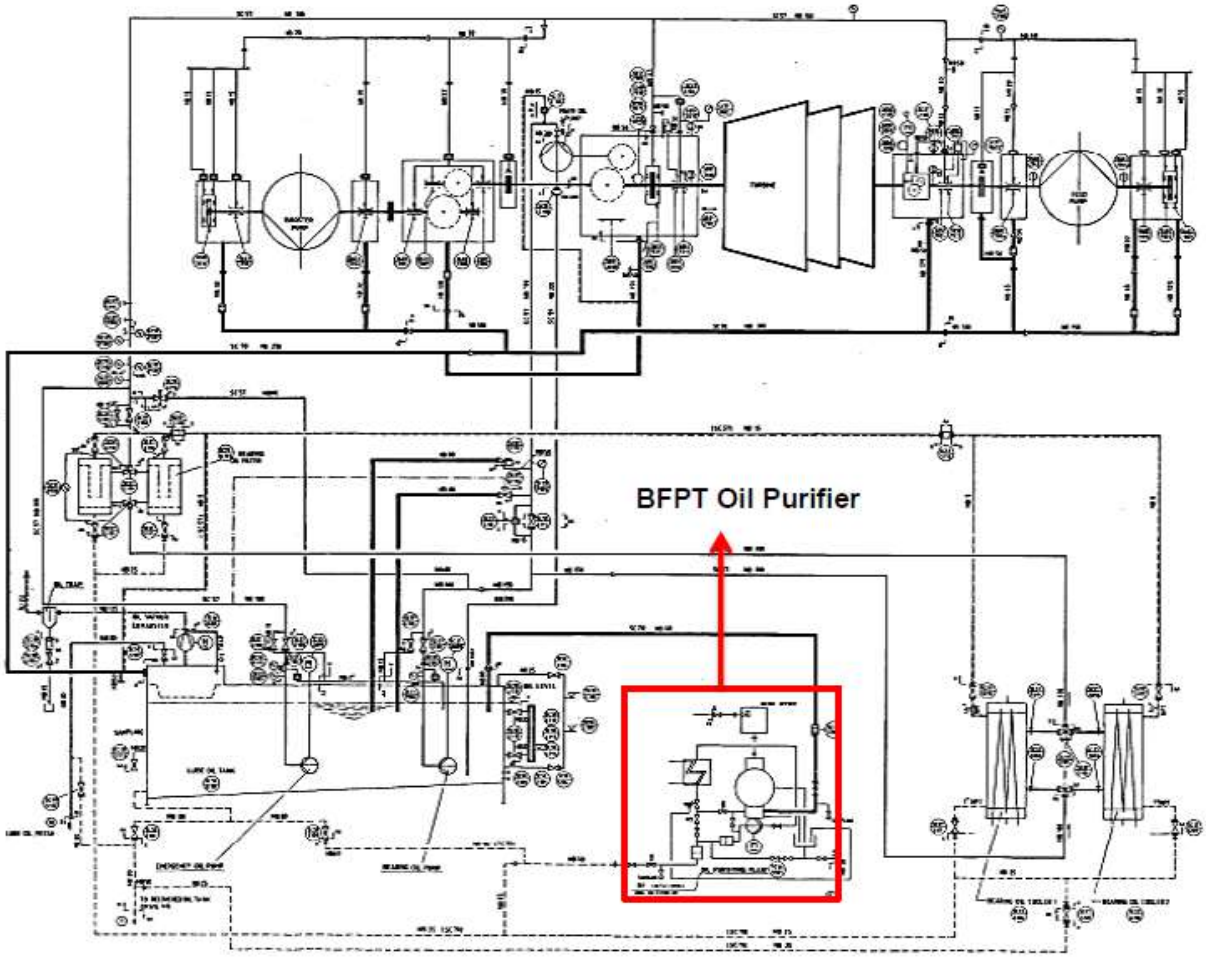


Figure 2: BFPT Lube Oil System

5.2. PROJECT PURPOSE AND HIGH LEVEL SCOPE OF WORK

The purpose of this project is to replace the current main turbine and BFPT oil purifiers with suitable centrifuges so as to improve the availability and reliability of the oil purification plant for both the main turbine and BFPT lube oil systems. The high level scope of this project, applicable to units 1 through 6.

5.2.1. HIGH LEVEL SCOPE OF WORK

- The Contractor will be responsible for the detail design, manufacturing, supply, installation, quality assurance, commissioning and handover associated to this project as stated in the scope of work as per sections 8.1-8.4 of this document.
- Detail design to be reviewed and accepted by the Employer.
- Contractor site establishment to commence once the detail design is accepted and the project is ready for execution.
- The Employer will decommission the current main turbine and BFPT oil purifiers. The Contractor will remove the current main turbine and BFPT oil purifier skids installed at the plant. The Contractor will transport the above mentioned to a location of the Employer's choosing.
- The Contractor will execute the detailed mechanical (Section 8.1), C&I (Section 8.2), Electrical (Section 8.3) and civil (Section 8.4) scope as stated in this document.

- The Contractor will be responsible alongside the Employer's representatives for commissioning of the new plant installations. The Contractor will conduct factory acceptance tests (FAT) of the new oil purifier skids before installation in the presence of the Employer's representatives.
- The Contractor will provide the Employer with all relevant documentation applicable to the new installations as stated in this document.
- The Contractor will provide training on the new installations to the Employer's maintenance, operating and engineering staff. Training will take place before installation and commissioning of the first oil purifier skids. The training shall include both theoretical and practical training. Training for operating staff will be focused on operating and troubleshooting of the oil purifier skid. Training for maintenance and engineering staff will be focused on operating, troubleshooting and maintenance of the oil purifier skid. Training for MMS turbine and TPE personnel must focus on operating, mechanical troubleshooting and maintenance of the oil purifiers. Training for EMS and EE personnel must focus on operating, electrical troubleshooting and maintenance of the oil purifiers. Training for C&I maintenance and engineering personnel must focus on operating, C&I troubleshooting and maintenance of the oil purifiers. Operating and maintenance trainees must receive certificates upon successful completion of the training. Training will be done on site and the Contractor will provide the training material. The minimum number of people that will require training from each department is as follows:
    - Operating – 21
    - Maintenance – 50 (MMS Turbine 10, EMS 20 and C&I Maintenance 20)
    - Engineering – 7 (TPE 2, EE 2 and C&I Engineering 3)

6. CODES AND STANDARDS

The Contractor shall adhere to the following codes and standards:

6.1. C&I

- 240-56227443 Requirements for Control and Power Cables for Power Stations Standard.
- 240-56355815 Control & Instrumentation Field Enclosure and Cable Termination Standard.
- 240-56355466 Alarm Management System Guideline
- 240-56355888 Temperature Measurement Systems Installation Standard
- 240-56355843 Pressure Measurement Systems Installation Standard
- 240-56355789 Flow Measurement Systems Installation Standard

6.2. Electrical

- 240-56356396 Earthing and Lightning Protection.
- 240-56355754 Field Equipment Installation Standard.
- 240-57617975 New Low Voltage Motors Procurement Standard.

6.3. Mechanical

- 240-56063935 Turbine Oil Standard
- 240-89147446 Impulse Piping for Coal Fired Power Plants Standard
- 240–106628253 Welding Requirements on Eskom Plant Standard
- 240-83539994 Non-Destructive Testing (NDT) on Eskom Plant Standard

6.4. Civil

- 240-56364545 Structural Design and Engineering Standard

6.5. Drawings and Procedures

- 240-86973501 Engineering Drawing Standard – Common Requirements.
- 240-56030537 Review of Piping and Instrumentation Diagrams.
- 240-109607332 Eskom Plant Labelling Abbreviation Standard.
- 240-61227631 Piping and Instrumentation Diagram (P&ID) Standard.

- 36-943 Engineering Drawing office and Engineering Documentation Standard.
- 240-105658000 (QM 58) Supplier Quality Management Specification.

7. REQUIREMENTS

7.1. GENERAL REQUIREMENTS

- Provision, erecting, removal and replacement of scaffolding, lagging and cladding and all rigging requirements as required for the completion of the works will be provided by the *Contractor*.
- All off-site NDE (during manufacturing) will be the responsibility of the *Contractor* and must comply with the requirements of section 4.4 NDE Requirements. The *Employer*'s representative will conduct inspections (as per agreed hold-points) at the *Contractors*' premises to ensure compliance if and when required.
- Unless otherwise stated (for example, items that are to be relocated), the *Contractor* is responsible for the removal of all items and material that are redundant (items that are removed) as part of the works. These are removed from the plant area and are laid down on site at a location to be indicated by the *Employer*.
- Where this document is not clear about the location of an item to be installed or work to be done, it is the *Contractor's* responsibility to determine the correct location from the *Employer's* engineering representatives, and the *Contractor* will only act upon confirmation by receipt of an Engineering Instruction via the *Employer's* Project Manager. Incorrectly positioned items, or incorrect work done (where Engineering Instructions were not issued) will be moved / removed / replaced / changed / reinstalled by the *Contractor* at his cost unless it can be explicitly proven that this document unambiguously shows an incorrect position/arrangement.
- The *Contractor* will be responsible for all interfacing, functionality and compatibility of the oil purifiers, C&I and electrical installations.
- All flanged connections loosened as part of the works shall be fitted with new gaskets (All gaskets to be supplied by the *Contractor*). Non-asbestos type gaskets to be used and MSDS for gaskets should also be provided. Bolts to be used must be torqued to 60% of the yield strength. All bolts to be torqued (not flogged) in the "star" sequence in increments as sound engineering practice dictates. All bolts and nuts to be lubricated. After final tightening of the bolt at least two threads will protrude behind the nut.
- The Contractor shall provide the Employer's Project Manager with a method statement and project schedule. The project schedule shall align with the Employer's outage dates as replacement of the oil purifier skids will be done during outage opportunities (IR or GO).

7.2. MATERIAL REQUIREMENTS

- The Contractor is responsible for supply of the main turbine and BFPT oil purifier skids, connection brackets (if any), any and all consumables required, C&I and electrical cabling, gaskets as well as bolts and nuts if required.
- All material and equipment supplied by the Contractor shall be designed to operate in a high temperature, oily and dusty environment. The material and equipment must also be able to handle oil with the following specifications:
    - Operating Temperature: 50 – 70 ^{o}C
    - Viscosity: 46 cSt @ 40 ^{o}C
    - Pour Point: - 6 : ^{o}C
    - Flash Point: 190 ^{o}C

- Water Concentration: 200 ppm

8. WORKS TO BE EXECUTED BY THE CONTRACTOR

8.1. MECHANICAL *WORKS* TO BE EXECUTED BY THE *CONTRACTOR*

8.1.1. Detail Design Works

- The *Contractor* shall do a detail design of the main turbine oil purifier with a minimum operating flow rate of 13 700 l/hr and a rated capacity of 18 000 l/hr. The main turbine oil purifier must be a centrifuge. Table 1 shows the required minimum specifications based on the existing oil purifier skid.

Table 1: Main Turbine Oil Purifier Requirements

Item	Component	Specification
1	Pump and motor	Screw pump, 50 Hz, 7.5 kW, Protection IP 55, insulation class F, 380 V
2	Separator motor	50 Hz, 18.5 kW, Speed 2890 rpm, Protection IP 55, insulation class F, 380 V
3	Heater	64 kW

- The *Contractor* shall optimise the design of the main turbine oil purifier to meet the specified flow requirements and fit in the plant without modifying the current pipework. The oil purifier skid pipework must comply with the EN 13480-3 design code. The current oil purifier piping interfaces are as follows:
  - The suction line is a 65 NB pipe.
  - The discharge line is a 40 NB pipe
  - The drain line is an 80 NB pipe.
- The *Contractor* shall do a detail design of BFPT oil purifier with a minimum operating flow rate of 2 800 l/hr and a rated capacity of 4 100 l/hr. The BFPT oil purifier must be a centrifuge. Table 2 shows the required minimum specifications based on the existing oil purifier skid.

Table 2: BFPT Oil Purifier Requirements

Item	Component	Specification
1	Pump and motor	Screw pump, 50 Hz, 2.3 kW, Protection IP 55, insulation class F, 380 V
2	Separator motor	50 Hz, 3 kW, Speed 2890 rpm, Protection IP 55, insulation class F, 380 V
3	Heater	36 kW

- The *Contractor* shall optimise the design of the BFPT oil purifier to meet the specified flow requirements and to fit in the plant without modifying the current pipework. The oil purifier skid pipework must comply with the EN 13480-3 design code. The current oil purifier piping interfaces are as follows:
  - The suction line is a 40 NB pipe.
  - The discharge line is a 40 NB pipe.
  - The drain line is a 20 NB pipe.
- The *Contractor* shall send the detail design package (main turbine and BFPT oil purifiers) to the *Employer* upon completion for acceptance
- The *Contractor* shall manufacture/procure the new main turbine and BFPT oil purifiers once the design packages have been accepted.
- The *Contractor* will conduct FATs for the new oil purifier skids before installation in the presence of the *Employer's* representatives. Dirty lube oil will be purified using the new oil purifier skids. The *Employer* will provide the *Contractor* with the dirty lube oil required for the FATs. The results of the FATs must show that the new oil purifiers meet the specified flow requirements and can purify dirty lube oil to the station's specifications (water concentration and cleanliness).

8.1.2. Installation and Commissioning

- The *Contractor* to supply a method statement for installation of the main turbine and BFPT oil purifiers. The method statement is to be reviewed and accepted by the *Employer* before installation of the new equipment can commence. The method statement to include the following documents as a minimum:
    - Oil purifier removal and installation procedure (including rigging and scaffolding requirements).
    - Commissioning procedure (Mechanical, C&I and electrical respectively). The commissioning procedure should contain – similar to the manufacturing and installation QCP's – detailed intervention points. Opportunity should be afforded to the *Employer* to review, comment, insert hold and witness points and acceptance prior to commencement of commissioning.
- The *Contractor* shall remove the current main turbine and BFPT oil purifiers.
- The *Contractor* shall install the new main turbine and BFPT oil purifiers.
- Commissioning of the new main turbine and BFPT oil purifiers will be done by the *Contractor* with involvement from the *Employer*'s representatives.
- The *Contractor* should provide the ***Employer's*** representative with all the design package drawings, technical data and manuals (operating and maintenance) for the main turbine and BFPT oil purifiers upon completion of the installation. Where required this information will be updated and be submitted in "as-built" status.

8.2. C&I *WORKS* TO BE EXECUTED BY THE *CONTRACTOR*

- The *Contractor* provides an off the shelf skid solution that meets the ***Employer's*** requirements. The *Contractor* notifies the *Employer* of any potential customization of equipment. Customizations will be subject to approval by the *Employer,* before the Contractor undertakes the customization.
- The *Contractor* provides an Oil purifier skid solution that is equipped with locally available spares. The Oil purifier skid must have local support for future maintenance, commissioning etc. activities.
- The *Contractor* provides a Control and Instrumentation solution as per LOSS diagram found in Appendix A
- The *Contractor* provides the *Employer* with the design documentation as per VDSS.
- All control and instrumentation equipment provided by the *Contractor* should be suitable for the current environment of exposure, with dust, temperature, humidity, water ingress and vibration taken into account. C&I equipment provided is be rated at IP65 minimum.
- The presently configured oil purifier skid alarms are shown in Table 3. The currently obsolete control system can only accommodate two alarm signals per oil purifier skid. The *Contractor* implements his standard-design alarm interface solution, but common's out the alarms, in order to be compatible with the limitations of the current system (i.e. only two alarms can be sent to control system per skid), so that the existing control system remains unaffected. The new alarms are selected based on the ***Contractor's*** skid design and operating philosophy and it is not required to have the same alarm descriptions that are provided currently.
- It is required that the ***Contractor's*** design retains the current alarm / signal tags.
- The *Contractor* submits an alarm philosophy that details operator action, alarm priority, etc as per Alarm Rationalization Guideline for all alarm signals, refer to VDSS.

Table 3: Current Alarm Signals for the Oil Purifier Skids

Plant	Incoming Signal		Alarm on Desk	
Main Turbine	SC16W001 XG01	M TURB OIL PURIFYING PLANT ALARM	SC10U200 XU08	M TURB OIL PURIFYING PLANT DISTURBANCE
	SC16W001 XG52	M TURB OIL PURIFYING PLANT MCB FAILURE		
BFPT	SC56W001 XG01	BFPT OIL PURIFYING PLANT ALARM	SC50U200 XU08	BFPT OIL PURIFYING PLANT DISTURBANCE
	SC56W001 XG52	BFPT OIL PURIFYING PLANT MCB FAILURE		

- The *Contractor* shall re-terminate new replacement instrument cables as per the current design (refer to Appendix A). The alarm cable runs from the purifier terminal strip in the field, to a field Junction Box and then to the C&I cubicle which is located in the unit C&I equipment room. Only the replacement of the instrument field cable between the oil purifier terminal strip and Junction Box is part of the Scope (refer to Appendix B LOSS Diagrams). Table 4 shows the full loop details.

Table 4: C&I Loop details for oil purifier alarm signals

	LOOP CONFIGURATION DETAILS									
Signal	**Field (Skid)**		**Field Cable**		**Junction Box & Terminal No**		**Trunk Cable**		**Cabinet (S400)**	**LOGIC and ALARM**
SC16W001 XG01	SC16B001 (See wiring diagrams for pins)	-	U2414	-	KT13C (13,14,15)	-	U21401	-	HC08 Rack E	See S200 and S300 Drawings in Appendix A
SC16W001 XG52					KT13C (50,51,52)		U21402			
SC56W001 XG01	SC56B001 (See wiring diagrams for pins)	-	U2467	-	KU11C (34,35,36)	-	U21406	-		
SC56W001 XG52					KU11C (68,69,70)		U21407			

- The *Contractor* provides signal isolation, in the form of potential free contacts, for the hardwired alarm interface to the *Employer's* equipment. The alarm contacts must be provided as double contacts, i.e. have both NO (Normally Open) and NC (Normally Closed).
- For oil purifier skid solutions that are provided with PLC controllers, the following needs to be complied to:
  - PLC engineering tools must be provided to enable the Employer to perform diagnostics and maintenance functions.
  - The Contractor provides in-depth PLC specific training, covering all aspects of engineering and maintenance, to enable the Employer to be proficient in engineering and maintenance of the control equipment.
  - Recommended spares list of control equipment (including but not limited to controller, IO cards, communication modules etc.)
  - Logic diagrams must be provided
- Installation of the oil purifiers is required to comply with the *Employer's* standards.
- The two alarms going to the operator and displayed on the operator's desk will remain as:
  - Main Turbine Oil Purification disturbance alarm
  - BFPT Oil Purification disturbance alarm
- As part of commissioning, full loop tests are required for the signals in Table 3 in order to verify the signal integrity.
- Wire break monitoring is required on the loops which will be reinstated under this project. The wire break monitoring shall be designed as per the loop drawing and resistor datasheet attached in Appendix A.
- The drawings in Appendix A are required to be updated to reflect the new design. Drawings and documentation to be generated by the *Contractor* as per attached VDSS, but are not limited to:
  - Controller Cubicle layout drawing
  - Loop drawing
  - Termination drawings
  - Cable Schedule
  - Wiring diagrams
  - Junction Box drawings
  - Signal list (Hardwired Interface

8.3. ELECTRICAL *WORKS* TO BE EXECUTED BY THE *CONTRACTOR*

The electrical *works* is limited to the power supply, cabling and local control panels. Furthermore, earthing requirements and motor requirements are specified. The *Contracto*r's scope includes disconnection, manufacture/ procure, supply, installation, quality assurance, commissioning and handover of the electrical *works* described herein; applicable to all 6 units.

8.3.1. Power Supply and Cabling

- The existing power supply points and cables shall be re-used as far as practically possible for the new oil purifiers. The *Contractor* shall assess if the existing power supply (inclusive of fuses and cables from the *Employer*'s switchgear) is adequate for the new oil purifiers' specifications. Should the cables, fuses and fuse holders be inadequate, the *Contractor* shall correctly size the new components; these shall be reviewed and accepted by the *Employer* before procurement can commence.
- The existing power supply details for each unit are detailed in Table 5:

Table 5: Existing power supply

Power Supply	Main Turbine	BFPT oil purifier
Supply point	0*CA 380 V Unit Board *A	0*CA 380 V Unit Board *A
Circuit	043	008
Fused switch and fuses	400 A	100 A
Cable	185 mm^2, 4 core, PVC SWA	35 mm^2, 4 core, PVC SWA

- The *Contractor* shall disconnect and secure the power cables in the field during the decommissioning and removal of the old oil purifiers and reconnect them on completion of the installation of the new oil purifiers.
- Should the orientation of the new oil purifiers change and the existing cable slag is insufficient, the *Contractor* shall supply and install a junction box and interconnecting cables to the local control panel (LCP).
- Where the new proposed equipment is rated less than the existing equipment, the *Contractor* shall test and re-use the cables provided the test results are satisfactory and the cable length is still adequate. For the new proposed equipment rated higher than the existing equipment, the *Contractor* shall assess the existing cables in terms of cable ratings, condition and length to determine if there is a need for cable replacement. Any additional cables from the LCPs to various loads based on the detail design shall be supplied and installed by the *Contractor*.
- The cables from the LCPs to various oil purifier loads shall remain as is, unless there is a requirement to replace them due to cable condition, length and/or rating from the outcome of the assessment to be done by the *Contractor*.
- Cabling scope shall comply with the *Employer*'s 240-56227443 Requirements for Control and Power Cables for Power Stations Standard. All necessary tests shall be conducted on existing and any new cables, in accordance with this standard.
- The *Contractor* shall ensure the cables are provided with durable cable numbers in accordance with the E*mployer*'s 240-56227443 Requirements for Control and Power Cables for Power Stations Standard.

8.3.2. CONTROL PANEL Construction and Functional Requirements

- The *Contractor* shall ensure that the main turbine and BFPT oil purifier local control panels adhere to the following minimum requirements during the detail design and manufacturing phases:
- Accessible live parts inside the CONTROL PANEL shall have a degree of protection of at least IP2X.
- For maintenance purposes, padlocking facilities shall be installed for all switch disconnection devices and provided both on the outside and the inside of the section or sub-section to lock the switch-disconnecting device in the isolated position.
- AC busbars are colour coded RED, WHITE & BLUE for the phases and BLACK for neutral busbar.
- DC busbars rated at 220 V shall be colour coded RED, for the positive conductor and BLACK for the negative.
- DC busbars rated at 24 V shall be colour coded RED, for the positive conductor and BLUE for the negative, and the zero bar shall be colour coded BLACK (where required).
- Collection busbars need to be constructed where SCPD's (Short Circuit Protective Device) and MCBs need to be connected in cascaded circuits. Collection busbars shall be rated for the full prospective short-circuit rating and equal to the de-rated current rating of the supply SCPD.

- Earthing or bonding to the protective earth (PE) conductor shall be applied to all doors by means of at least 6 mm^2 cross-sectional area multistrand conductors.
- The PE conductor shall be dimensioned in accordance with SANS 10142-1 with respect to the thermal stresses due to duration of short-circuit at 60 % of the CONTROL PANEL prospective short-circuit rating kA. The size of the PE conductor shall not be less than 150 mm^2. The conductor shall also be pre-drilled.
- The PE conductor shall be colour coded GREEN with a YELLOW stripe and the screened earth bar shall be left uncoloured.
- Where cables of 95 mm^2 and larger are required, they shall be provided with robust, individual, un-drilled, removable gland plates. These gland plates shall be non-magnetic in case of single core cables.
- All control wiring connected to a source of fault energy shall be capable of carrying continuously a current equal to 1,5 times the rating of the fuse protecting it and withstanding the total let-through current of the fuse under any fault condition from overload to short circuit without suffering perceptible damage.
- Only stranded conductor cable shall be used. Single or solid conductor shall not be used. Aluminium conductors shall also not be used.
- Multistrand cable with conductors of 1,5 mm^2 cross sectional area shall be used for control circuits. Wiring of circuits of up to 50 V shall be 0.5 mm^2 multistrand conductor cable.
- Wiring of the current and voltage transformer circuits shall be done by multistrand conductor at least 2.5 mm2 cross-sectional area. The circuits and shall be colour coded according to the phases to which it is connected.
- Cable used on 24 V DC control circuits shall consist of at least 1.5 mm^2 multistrand conductors.
- Joints or splices in any circuit as well as the termination of more than one conductor in one lug will not be acceptable.
- Conductors carrying currents in excess of 100 A and passing through metal shall either be all three phases (both poles of DC conductors) or the metal barrier shall be split.
- Components shall be arranged and mounted in the CONTROL PANEL in such a way that maintenance work can be performed in a safe and orderly manner.
- Control conductor sheath shall be coloured as follows:
    - BLACK for AC circuits
    - GREY for DC circuits
- Conductors of CT and VT circuits shall bear the phase colours. The neutral conductor shall be coloured BLACK.
- Control conductors shall be marked at both ends with an interlocking type of ferrule with permanent black letters impressed on a white or yellow background. The numbered ferrule shall not fall off when disconnecting the cable. Ferrules shall read in a consistent manner in both vertical and horizontal planes.
- Conductors for control wiring shall be terminated with pre-insulated compression type lugs.
- Each terminal strip mounting rail shall be provided with not less than 10% spare length with a minimum of 50 mm.
- Wiring for voltmeters shall be arranged in such a way that the CONTROL PANEL's fault free-zone's integrity will not be impaired.
- Terminal barriers shall be fitted between terminals with different voltage levels.
- All terminals shall have a flammability rating of V0 in accordance to UL 94.
- Terminals or terminating conductors associated with one functional unit shall be grouped together.
- All termination arrangement not in accordance with IP2X shall be provided with separate covers to act as shroud so that accidental contact is impossible when making off adjacent cables.
- The finished external colour of the AC CONTROL PANEL shall be G29: LIGHT GREY to SANS 1091 except for mounting plates and other support structures, which can be galvanized, or alloy cold rolled zinc steel. The base-frames shall be painted BLACK.
- The finishing coat shall be free from craters, pinholes, embedded foreign matter and other visual defects. The topcoat shall also provide complete hiding, consistent coverage and thickness, and uniform colour.
- The control panel enclosure shall comply to SANS 62208..
- Each control panel shall have a nameplate stating the following:
    - Name of the ASSEMBLY
    - Plant coding
    - Manufacturer

  - Manufacturer's address and contact telephone number
  - Contract Number
  - Standard to which it was manufactured
  - Main Busbar current rating
  - Rated operating voltage
  - Control voltage
  - Rated impulse withstand voltage
  - IP rating doors open and doors closed
  - Short-circuit rating in kA and duration in seconds
  - Form of separation of respective sections
  - Degree of Pollution
- Minimum creepage distances shall be for Pollution Degree 3, material group 111a with the specified insulation voltage.
- Rated impulse voltage shall be 8 kV for AC power components, busbars and circuits and 6 kV for AC control circuits.
- No components or equipment shall be mounted in any position where it is not visible and accessible to a viewer looking into the compartment through the door opening (fixed circuits).
- The CONTROL PANEL's metal enclosure shall have a minimum external degree of protection of IP3X in accordance with SANS 60529.
- Routine testing of CONTROL PANELS shall be in accordance with SANS 1973-3 Annex E.
- Routine tests shall be carried out on each CONTROL PANEL during the Factory Acceptance Testing (FAT), prior to dispatch and which shall serve to check for manufacturing and material defects.
- The LCP (local control panel) shall display all alarms individually to enable fault finding and diagnostics.

8.3.3. Earthing and Lightning Protection

- All equipment installed shall be bonded to the existing station earth mat in accordance to the Employer’s 240-56356396 Earthing and Lightning Protection standard. Continuity and resistivity tests shall be conducted by the Contractor to confirm the adequate bonding of the system. Test results shall be provided to the Employer for acceptance.

8.3.4. Motors

- The motors that form part of the oil purification plants shall adhere to 240 – 57617975 New Low Voltage Motors Procurement Standard.

8.4. CIVIL WORKS TO BE EXECUTED BY THE CONTRACTOR

- The *Contractor* ensures that the new main turbine and BFPT oil purifier skids fit within the available area in their respective oil rooms during the detail design phase. The available area for the main turbine oil purifier skid is 2.8 m x 1.5 m. The area available for the BFPT oil purifier skid is 2.52 m x 1 m.
- The *Contractor* is required to carry out a structural integrity assessment of the existing main turbine and BFPT oil purifier skid foundation plinths and reinforced concrete slabs in order to ensure that they can withstand the weight of the new oil purifier skids. The structural integrity assessment of the reinforced concrete foundation plinths and slab must be in accordance with the Eskom standard 240 – 56364545: Structural design and Engineering standard.
- The *Contracto*r is required to submit the reinforced concrete slab and plinths assessment report and the method statement on replacement for the execution of the *works* to the *Employer* in advance of replacement commencement for review by the *Employer*’s engineering team.

9. WORKS TO BE EXECUTED BY THE EMPLOYER

- The Employer’s engineering representatives will review the detail design package, will assist with quality assurance during project execution, review QCPs, assess validity of equipment specifications against design before installation and assist with commissioning of plant.
- The Employer’s operating representative will assist with testing and commissioning of the new oil purifier skids.

- The Employer assigns personnel from operating, maintenance and engineering for operating, troubleshooting and maintenance training on the new oil purifiers.

10. GENERAL REQUIREMENTS OR INFORMATION

10.1. Configuration and Documentation Management

10.1.1. Plant Coding

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 done according to LIM103 and applied during the design review stage(s) and cross referenced to all arrangement drawings, schematics, instructions and manuals and where practical to spare parts list/manuals. The *Contractor* shall be required to include allocated coding to the electronic design drawings.

10.1.2. Plant Labelling

The *Contractor* shall submit a list of identified plant items that require AKZ codes to the *Employer*. The *Employer* will provide AKZ codes for the plant items and the *Contractor* shall then manufacture and install AKZ labels to the plant items.

11. Health and Safety Risk Management

The Contractor is appointed to act on behalf of the Employer in terms of the Occupational Health and Safety Act no 85 of 1993 for the Works.

11.1 Safety of Workers

The Contractor ensures the following but not limited to:

- The safety of all persons working on Site.
- The Contractor informs their personnel about the following evacuation procedures: Emergency Alarm Activation and Evacuation of Personnel – LBS00036.
- Compliance to local Plant Safety Regulations

11.1.2. General Safety Rules

The Contractor complies with the following:

- Lethabo Power Station Health and Safety Standards as per Lethabo Power Station Health & Safety Specifications for Contractors (PA/270/003) 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 prior to commencement of work.
- Compliance with Eskom No Smoking Policy
- Adhere to the OHS Act 85 of 1993
- All staff will undergo Safety Induction, presented by Lethabo Risk Management Department

11.1.3. Health and Safety Plan

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, if required to perform work:
- Proof of the contracting company’s own Health and Safety Policy
- Proof of appointments, assignments and designations as required in terms of the Occupational Health and Safety Act, No 85 of 1993
- Proof of Risk Assessments regarding Hazards identified and proof of training of own employees regarding controls derived from the risk assessment
- Proof of Safe Work Procedures that derived out of the Risk Assessments
- Proof of the contracting company’s own Emergency Plan that will deal with their own emergencies on site
- Proof of a Fall Protection Plan, if required to perform work at elevated levels developed by a competent person appointed by the contracting company

- Proof of “Notification to perform Construction Work” – a copy of the notification addressed to the Department of Labour as required Regulation 3 of the Construction Regulations
- Proof of an Induction Program (it is advised that the Lethabo SHE Rules as a Guide) and an attendance register signed by its employees prior the commencement of any construction work on site.
- Proof of the contracting company’s employees Medical Fitness Certificate. (Must still be valid – one year. May only have been issued by an occupational health practitioner)
- Proof of contractors weekly Health and Safety Rep Inspections regarding its own site and where detached work is performed
- Proof of Personal Protective Equipment (PPE) issued to Contractor’s employees.
- Proof of contracting company’s Accident/Incident Reporting and Investigation System
- Proof of checklists and where applicable test certificates, regarding contractor’s tools, equipment, machinery, mobile equipment, vessels under pressure and any other applicable checks required by the Act
- 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
- The Contractor shall ensure that his Subcontractors do also have a Health and Safety File and that it must be accepted by the Contractor.
- The Safety Officer employed by Lethabo Power Station will audit these Health and Safety Plans to ensure compliance with the provisions of the Act.

11.1.4. SHE Documentation Required from the *Contractor* at Tender

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:
- Letter of good standing with COID or any insurance body
- An Organogram indicating the names of all persons that will hold legal appointments on the project in terms of the Act
- The expected roles, responsibilities and authority of those who are proposed to receive legal appointments
- Provide an overview of the system / program that is utilized to manage Safety, Health and Environment.

11.1.5. Occupational Health and Safety Act 1993, Section 37

The Contractor complies with the following:

- The Occupational Health and Safety Act, 1993, and all Regulations made there under.
- All Employer Safety and Operating Procedures, which are attached hereto.

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.

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 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:

- Supply the Employer Safety Officer with copies of minutes of all Health and Safety Committee Meetings, whenever he is required to do so.
- 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.

Employer may, at any stage during the currency of this agreement be entitled to:

- Do safety audits at the Contractor's premises, its work places and on its Employees.
- Refuse any Employees, sub-Contractor or agent of the Contractor access to its premises if such person are found to commit any unlawful act or any unsafe working practice or is found to be not authorised or qualified in terms of the Act.

- Issue the Contractor with a work stop order or a compliance order should 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-Contractors or agents. Stoppages of this nature will not constitute a compensation event.

11.1.6. Occupational Health And Safety Act 1993 additional information

- The Medical Station is available on site during normal working hours. The afterhours emergency telephone number is 5555 or from a Lethabo phone the extension is 5555 that can be phoned for assistance.
- Fire protection and rescue services are available on site 24 hours per day.
- The Contractor must comply with Lethabo Power Station Contractors Safety Manual. This manual is available on request from the Employer's Representative.
- The Contractor and his sub-contractors must comply with Eskom's Non Smoking Policy.
- The Contractor and his sub-contractors must comply with the Occupational Health and Safety Act85 of 1993.
- The following will be an advantage
- NOSA accreditation.
- NOSA MBO system in place.
- The Contractor is not allowed to weld onto any steam piping, working structures or plant.
- The Contractor must appoint Safety Representatives to assist the Employer's Representative to:
- Identify possible hazards, dangers and risks.
- Ensure potentially and actions are mitigated.
- Ensure a safe working environment.
- The Employers 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.
- The Employer's Representative must be informed within 24 hours of any injury or damage to property or equipment.

11.1.7. Housekeeping

- Working areas must be cleaned daily. . All equipment must be packed neatly without interference to access.

12. Environmental Management

- 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 aspect register 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 Project Manager or Environmental Officer on the first day prior to commencement of work at Lethabo. The Contractor shall submit proof to the Environmental Officer of Lethabo that he and his employees has 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 will adhere to them at all times.

- **Where applicable**, the Contractor adheres to the following rules:
- Provide sufficient storage containers, labelled depicting general or hazardous waste and store in a designated storage area
- No hazardous waste may be stored for a period of more than 90 days on the Lethabo premises.
- Ensure that all hazardous waste is disposed off at a licensed Class H disposal site. A copy of the hazardous waste disposal certificate is submitted to the Project Manager.
- Ensure that all other general waste is disposed off at the local municipal waste dump
- Ensure that the Contractor's site does comply with the general good housekeeping practices. Redundant materials are moved to allocated sites. No scrap shall be stored in the Contractor's yard. Scrap is to be cleared from Site daily.
-

- The non-adherence to the Lethabo Environmental policy and rules could result in the termination of this contract.

12.1. Environmental constraints and management

- The Contractor provides an environmental management plan applicable while executing the Works.
- The Contractor ensures that all goods, services or Works supplied comply with applicable environmental legislation.The Contractor is responsible for keeping the work area clean of any environmental waste.
- All waste introduced and/or produced on the Employer's premises by the Contractor is handled in accordance with the minimum requirements for the Handling and disposal of Waste in terms of Government Legislations and Employer's environmental requirements.

13. Quality Assurance Requirements

- No work will be done without a QCP that is approved by the Employer. A QCP must be submitted to the Employer for the works 14 days before that part of the work is to commence.
- QCP's and related documentation shall be subject to comment and acceptance by the Employer's Quality Control personnel as well as Engineering. QCP's will make provision for signatures for interventions by at least the Contractor's QC Representative, the Employer's QC Representative and the Employer's Engineering Department.
- Each QCP will have a page for proof signatures, so that any signature can be traced to the individual who has endorsed any activity on QCP.
- Intervention points will be signed as the work progresses and no back-dating will be allowed.
- Notification for hold and witness points shall be in writing and shall be done at least 24 hours in advance.
- The following minimum hold points must be included for the Employer's Quality Control Department:
    - Approval of QCP.
    - Review material certificates and specifications for the main turbine and BFPT oil purifier skids.
    - Main turbine and BFPT oil purifier skid inspection once manufacturing is complete.
    - Review specifications for all C&I and electrical consumables purchased/to be used during installation.
    - Review and assist with the commissioning of the new installations.
    - Final Sign off and Acceptance.
    - Final data book Review.
- The following points to be included as a minimum on the Contractor's QCP:
    - Approval of QCP's by the Employer's Engineering representative, Employer's QC and the Contractor's representative.
    - Intervention points for the Employer during manufacturing, installation and commissioning. These intervention points will be based on the agreement between the Contractor and Employer. Welding activities to adhered to Eskom welding standard 240-106628253 and testing of quality of welds use NDT standard 240-83539994
    - Ensure that all permits are established before work can commence.
    - Mark the equipment with the appropriate AKZs. Labelling should be done in accordance with the Lethabo Power Station Information Manual [27].
    - Remove current main turbine and BFPT oil purifiers from the plant.
    - Visual inspection of consumables, nuts and bolts, new oil purifier skids before installation into the plant.
    - Mechanical, C&I and electrical commissioning and functionality testing by the Contractor and Employer's representatives.
    - Final approval of QCP and plant handover to the Employer's engineering representative.

14. Drawing Requirements

- The Contractor shall update all plant drawings, increasing the revision number by 1 for the final version. The complete plant drawings must be updated to reflect the plant changes made by the Contractor.

- In cases where the plant drawings are not sufficiently clear, the Contractor shall contact the Employer for clarity.
- All Drawings to be provided shall be in accordance with the Engineering Drawing Standard – Common Requirement (240-86973501).
- The general oil purifier skid drawings should contain all applicable data and technical specifications.
- The following general requirements apply to all the drawings:
    - Space shall be provided for Employer approvals.
    - All drawing revisions must be provided as paper copies in original (as per Engineering Drawing Standard – Common Requirement (240-86973501), but in all cases, at least A3 size) as well as provided in pdf format and original micro station format.

All C&I drawings will be updated by the Contractor as per VDSS (refer to Appendix A) to reflect all changes made to the plant – refer to Appendix A for the applicable drawings. The drawing standards stated in section 6 will apply with regards to updating mechanical, C&I, civil and electrical drawings.

15. Documentation Requirements

- All documents supplied by the Contractor shall be subject to the Employer's acceptance. Documents such as detail design report, QCP's, method statements and other documents impacting the Works must be accepted by the Employer at least 14 working days prior to commencement of the Works.
- Each revision of a document or drawing shall be accompanied with a list of the comments made by the Employer on the previous revision if applicable and the response/corrective action taken by the Contractor. Changes will be recorded in a revision table contained on/in each drawing/document.
- Documents and drawings shall indicate the Employer's reference number as allocated by the Employer. The Contractor may have his own document or drawing number on the document or drawing, but where reference is made among documents or drawings, the Employer's number shall be used.
- The Contractor shall compile a complete data book for all works done containing the following as per VDSS:
    - Scope of work.
    - Detail design report.
    - Approved QCPs.
    - Inspection reports and procedures.
    - As built drawings.
    - Material summary that gives full traceability between components used, assembly drawings, material certificates and complete ordering information.
    - Pump performance curves.
    - Control philosophy and alarms.
    - Maintenance, operating and troubleshooting documentation of all new plant equipment installed (as a minimum).
    - Mechanical assembly drawings of installed main turbine and BFPT oil purifier skids.
    - Wiring drawings of the installed main turbine and BFPT oil purifiers.
    - Cable test results.
    - As built Cable Schedules as per the Employer's 240-56176097: Electrical Cable Schedule Template.
    - Electrical load list as per the Employer's 240-56227927: Electrical Load List Template.
    - Control panel GA, single line diagrams, schematics.
    - Updated switchgear schedules (drawing 0.63/5049) where necessary.
    - Earthing test results and drawings indicating earth connection points for the new equipment.
    - All NCR's and corrective actions (Contractual Defect Notifications).

All documents supplied by the Contractor shall be subject to the Employer's approval. The language of all documentation shall be in English. All documentation shall be controlled and managed in accordance with Document and Records Management Procedure (32-6).

16 Programming constraints

16.1 General

a. Planning and control of the works is to be done by the Contractor in line with the accepted Work Breakdown Structure.

b. A single programme is to be used for planning of the Works, incorporating the programmes of all sub-contractors, where applicable.
c. Interface points with sub-contractors and others, including interfacing between different subcontractors and others are to be clearly identified.
d. Project Key Milestone Dates (stated in the contract data) as supplied by the Project Manager are to be incorporated into the programme by the Contractor.

16.2. Work execution planning and reporting

a. Contractor to submit the plan for work execution.

16.3. Additional programme requirements

a. A programme is to be submitted after 14 days of contract award, stipulating high level execution of this project.

16.4. Contractor's management, supervision and key people

The Contractor is to provide a detailed organogram at tender. The organogram must clearly 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 Project Manager.

In a case where the Authorised Supervisor is required,the Contractor shall provide his own responsible person (authorised supervisor) as required by the Permit to Work system on site during the duration of the works.

17.1 Invoicing and payment

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

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

Alternatively email it to:
Invoiceseskomlocal@eskom.co.za

and include on each invoice the following information:

- Name and address of the Contractor.
- The contract number and title;
- Contractor's VAT registration number;
- The Employer's VAT registration number 4740101508;
- The total Price for Work Done to Date which the Contractor has completed;
- Other amounts to be paid to the Contractor;
- Less amounts to be paid by or retained from the Contractor;
- The change in the amount due since the previous payment being the invoiced amount - excluding VAT, the VAT and including VAT;
- The original copy of an invoice shall be send to the Employer's accounts payable section (APS).

17.2 Contract change management

The change management process for addressing changes on the contract will be as follows;

- All requests for contract changes shall be submitted in writing by the Contractor to the Project Manager as per the terms and condition of the contract.
- The Project Manager will follow the prescribed requirements for managing contract changes as per his/her delegation of authority.

Changes that are not within the delegated authority of the Project Manager will be submitted for approval to the relevant adjudicating authority in accordance with Procurement and Supply Chain Management Procedure, 32-1034. The Contractor shall ensure that all approved changes are documented and kept as record.

17.3 Constraints on how work will be conducted, as per the Works information or where applicable;

- The contractor shall be responsible for supply of all the equipment and tools to conduct the works.
- The construction price on the price list should cater for equipment, tools and cost.
- The warranty for the works shall start from the day after successful commissioning onwards.
- The Contractor shall submit proper off-loading procedure two weeks before equipment delivery to Employer's site.
- The contractor shall allow in his program, 2 days for induction training and access to site..
- During works, the employer shall do random SHERQ audits.
- The contractor shall adhere to the agreed schedule, and apply project management principles to avoid delays.
- No work shall commence without the supervision and or availability of key personnel on site as required by the legislation.
- The contractor shall carry out the works according to the specifications and designs provided by the Employer.
- The Contractor's deployment of key personnel on site shall be strictly in line with the requirements of the Employer's technical requirement criteria.
- Normal working hours must be maintained as far as possible. The normal working hours on site will be from 07:30am to 16:30pm Monday to Friday. Should the Contractor wish to work outside these normal working hours, he should notify the Project Manager in writing.
- The Contractor will only be allowed to work outside the specified hours once the Project Manager has approved the request in writing.
- All provisions of the Occupational Health and Safety Act, 85 of 1993, and any other applicable legislation, must be adhered to.
- No equipment shall be provided by the Employer for the works
- If the outage is deferred, the installation shall be postponed until that specific outage time.
- The Contractor will be notified through Early Warnings if the outage is deferred, since the deferments are beyond the Employer's control.
- The Employer intends to second staff, both engineering and maintenance, part-time or full-time to the Contractor's team during the installation and commissioning stages of the contract, without affecting the Prices. The aim is that the Employer's personnel receive "on-job" training in order to become familiar with the equipment forming part of the works.

18. Procurement

The Contractor will be required to provide the Employer with all information regarding his sub-contractors. The Employer will need to approve all sub-contractors to be used by the Contractor. The Contractor shall be responsible for all the activities performed by the sub-contractors.

18.1 Subcontract documentation, and assessment of subcontract tenders

The Contractor shall be responsible for all documentation and work performed by subcontractors. The Contractor shall ensure that all work performed by the sub-contractor is in accordance to 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 sub-contractor.

BBBEE and preferencing scheme

Refer to conditions of tendering.

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

Refer to conditions of tendering.

The Contractor complies with and fulfils the Contractor's obligations in respect of the Accelerated and Shared Growth Initiative - South Africa in accordance with and as provided for in the Contractor's ASGI-SA Compliance Schedule stated below

.

[Insert the agreed ASGI-SA Compliance Schedule here]

The Contractor shall keep accurate records and provide the Project Manager with reports on the Contractor's actual delivery against the above stated ASGI-SA criteria. [Elaborate on access to and format of records and frequency of submission etc.]

The Contractor's failure to comply with his ASGI-SA obligations constitutes substantial failure on the part of the Contractor to comply with his obligations under this contract.

19. Plant and Materials

19.1. Quality

The Contractor shall produce and submit a project plan and quality control plan to the Employer within 21 days after the contract has been awarded.

PART 4: SITE INFORMATION

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

PART 4: SITE INFORMATION

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

1. Site Procedures and Regulations

1.1 Site location and Security

- 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* will inform the *Contractor* of the access procedures, and it should be expected that such procedures may change depending on the prevailing security situation.
- The *Contractor* to allow 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.

1.2 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.

1.3 Occupational Health and Safety Induction Course

- All the employees of the *Contractor* must attend a health and safety induction course provided by the *Employer* at the security offices 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 health and safety induction.

- The Induction course includes an awareness on the Error prevention and Improvement tools and techniques to ensure familiarisation and use of these error-prevention tools/techniques inclusive of, Pre and Post-job briefs, Risk Assessments, Self-checks (STAR principle), Peer Checks, Job observations, Accountability, Effective communications e.g. 3- way, Questioning attitude, Procedural adherence, Hand overs and other.

- A list of employees requiring safety induction must be submitted at least 2 days in advance arrival so that the details of the safety and health induction course can be communicated.

1.4 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 is 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's Representative.*

- 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 contactable 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.

1.5 Permit to Work System (N/A fo this work)

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

- The *Contractor*'s Responsible Person 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. The *Contractor* must also make provision for sufficient Authorise Supervisor(s) depending on the contractual obligations. The Authorised Supervisor will need to undergo a week's training, which will be arranged at a suitable Eskom facility. This person must also pass an exam to verify his understanding of the procedure, after which he/she will need to be interviewed by a panel to discuss the practical understanding of being appointed as an Authorised Supervisor.

- 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.

1.6 Transportation of passengers: open LDV's:

No *Eskom employee* or *Contractor* would be allowed to transport passengers on the back of open light delivery vehicles (LDV's). 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 belt for the number of passengers to be transported.
- 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 all vehicles
- The above must apply to on site and off site transportation of passengers.

1.7 Eskom Life Saving Rules:

Life Saving Rules have been developed that will apply to all Eskom *Employees*, agents, consultants and *Contractor*s.

Rule 1: Open, Isolate, Test, Earth, Bond, and/or Insulate before touch - that is any plant operating above 1 000 V.
Rule 2: Hook up at heights - no person may work at height where there is a risk of falling.

Rule 3: Buckle up – no person may drive any vehicle on Eskom business and/or on Eskom premises: unless the driver and all passengers are wearing seat belts.
Rule 4: Be sober (no person is allowed to work under the influence of drugs and alcohol.
Rule 5: Use a permit to work – where an authorization limitation exists, no person shall work without the required permit to work.
Rule 6: No person is allowed to text/talk on cell phone as this distracts attention

1.8 Local Safety Procedures

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

1.9 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.

- The *Employer* will accompany the *Contractor* to hospital in the case of serious injury.

1.10 Fire Prevention

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

1.11 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.

1.12 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.

- Training requirements must comply with the Works Information and statutory requirements.

1.13 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.
- Copies of attendance registers for all incidents or work stoppages

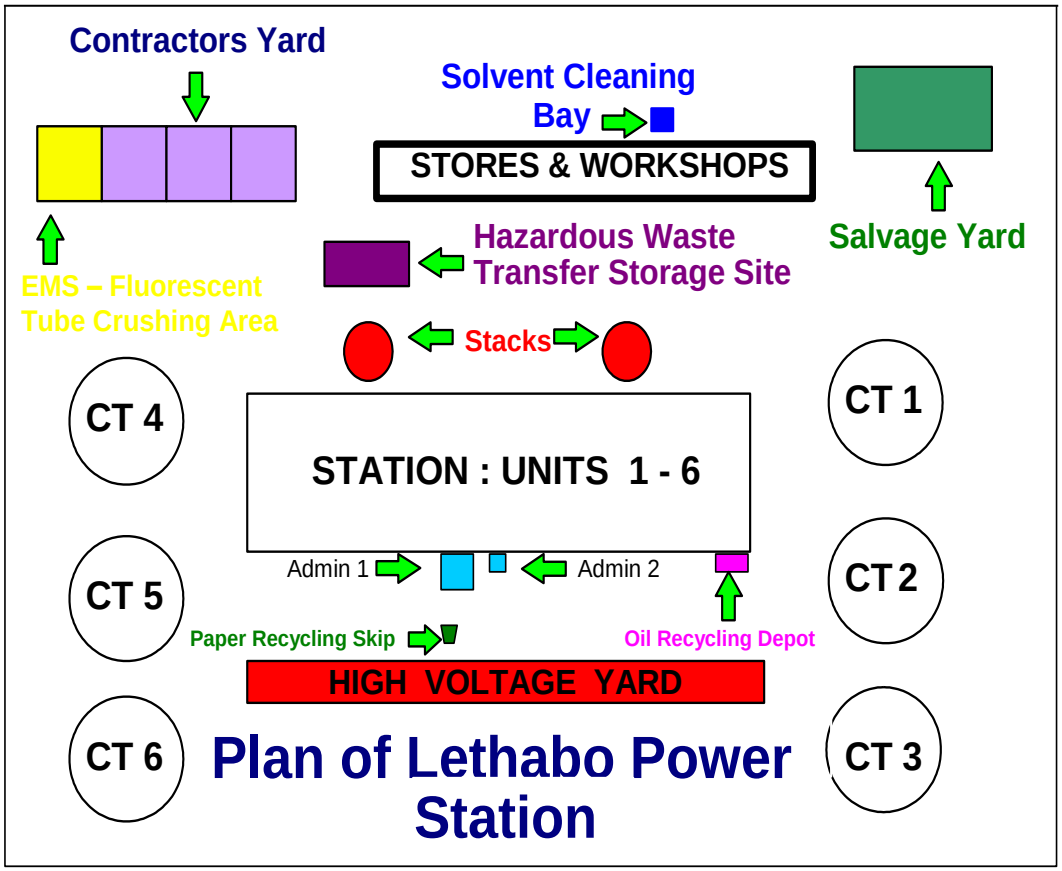
1.14 Environmental Policy and Waste Handling

The *Contractor* shall submit an Environmental Management Plan (EMP) to be reviewed and approved by Eskom environmental officer, one week before the commencement of works if required as per the Works Information.

1.15 Disposal of Waste

Waste shall be removed promptly to the designated disposal area as per below requirements:

- Domestic waste to the white waste bins
- No stockpiling will be permitted
- Production waste in the marked bins i.e. coal and ash only
- Paper in its recycling bin
- 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 Salvage Yard. Solvents and cloths used to the Cleaning Bay.



2. Additional General information

LBS00067 to be used as it contains statutory requirements as well as the minimum SHE requirements to which Eskom employees and contractors must comply whilst performing work on the premises of Lethabo Power Station.

The purpose of the procedure is to assist the Contract Supervisor or Project Manager, and the contractor to develop, implement and maintain an organised Safety, Health and Environment Management Plan performing work.

Contractors are accountable for taking all the necessary steps to protect all persons (including employees, visitors, and the general public), to protect the environment and property against any harm during the course of performing work or services in relation to their contractual obligations. In addition, all work procedures and equipment will be carried out in accordance with Eskom and legislative requirements.

Eskom's contractors have the fundamental accountability and responsibility for executing on-site safety, health, and environment issues for their activities, services, products, and work. Each contractor is responsible for ensuring that its employees and the employees of any appointed contractors comply with all occupational safety, health, and environmental (SHE) statutory requirements and the policies and procedures of Eskom Holdings SOC Limited.

This procedure is supplementary to the requirements of relevant legislation and the conditions of the contract.

2.2 Equipment or Material Access and Removal

2.2.1 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.

2.2.2 Removal

- The *Contractor* is not allowed to remove any equipment or materials from site without producing the relevant OV18 forms or the equipment lists. (Security Access Sign In)
- 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's Representative*, on receipt of the original OV18, with which the *Contractor* brought the equipment on site.

2.2.3 Site or Area Establishment and Evacuation

2.2.3.1 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 to be submitted as stipulated below

- The location of the site or area is indicated during the site or area take-over inspection.

2.2.3.1 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*. A site inspection to be conducted by both parties prior to site establishment
- The *Employer* will require full access at all times of the *Contractor's* site or area for inspection.
- The *Contractor* will remain accountable for the security of his designated site area. The *Employer* will accept no accountability for any theft, losses or damage under the *Contractors*' control

2.2.3.2 Site De Establishment:

- The *Contractor* advises the *Employer* in writing, five (5) days prior to site de establishment in accordance with LBA 00030.
- Site de establishment cannot proceed without the approval of the *Employer* in writing. Final payment and the first portion of the retention (where applicable) will not be released if not supported by the *Employer*, as this is seen as part of the works.

2.2.4 Information Required for Site Establishment:

- Note that the below will be based on the Contractor's planning for execution of the works. The price schedule should be completed as per required Section A
- The information supplied will assist in site allocation

Description	Quantity	Comments: Contractor to explain quantity requirements
Equipment:		
Container		
Other		
People: (where applicable)		
Site Manager		
Other		
Materials: (where applicable)		
Oil		
Other: (where applicable)		
Hot permit requirement		

Management and start up

Management meetings

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

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk register and review	Every Monday at 10:00	Projects Boardroom	Contractor SHE Officer and Project Manager
Tool box sessions	Every-day before commence of 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	Every Monday at 08:30	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 *Project Manager* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or

instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

Documentation control

Documentation requirements cover the life cycle of the project from the initial installation stages through to handover and include operating, maintenance and the training documentation. Not only must these documents be comprehensive and complete but must comply with strict document control and revision procedures.

The *Contractor* plans the supply of the documentation during various project stages and provides the documents in accordance with the key scheduled project milestone dates. All engineering documentation is submitted as per the VDSS.

All the drawings issued by the *Employer* for this contract is copyright protected and are not to be copied by the *Contractor*.

The *Contractor* submits all documentation on a formal transmittal form in triplicate to the *Project Manager.*

Documentation Management System

A comprehensive documentation management system is provided. All documentation is maintained and updated until *Completion*. Any change is propagated automatically to all related documentation. All documentation forms an integral part of the documentation system.

The AKZ plant position codes are identified in the documentation. AKZ codes, down to third level, are to be used. The *Contractor* includes the *Project Manager* accepted drawing head on all drawings submitted to the *Project Manager*. The format of all documents is submitted to the *Project Manager* for acceptance.

Automatic prevention of duplication of numbering or ambiguity is built into the system.

2.2.2 Documentation Control

The *Contractor* implements a comprehensive document control system for all documents, their revision status and of the document status in relation to the “as built” and "as designed” plant status. Procedures, document control, flow diagrams and indexes are included in this system. The drawing register contains the following information and is submitted monthly, in a Microsoft Excel format, to the *Project Manager*:

- Drawing number (*Employer* and makers number)
- Revision
- Approval status
- Location of drawing at that stage
- Drawing AKZ number
- Drawing description
- Sheet number
- Transmittal number

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

Normal working hours must be maintained as far as possible. The normal working hours on site will be from 07:30am to 16:30pm Monday to Friday. Should the *Contractor* wish to work outside these normal working hours, he should notify the *Project Manager* in writing.

The *Contractor* will only be allowed to work outside the specified hours once the *Project Manager* has approved the request in writing.

Site services and facilities

Site yard
It is required, for the proper co-ordination 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.

The *Contractor's* yard is subject to periodic inspection by the *Project Manager*. The location of the nearest sewer manhole, power distribution point, portable water connection storm water channel and road access point is indicated by the *Employer*. The *Contractor* is responsible for connection to the closest point of supply.

Supply of electricity, if needed;

Electricity will be made available for construction purposes free of charge from power points which will be indicated by the *Project Manager*. 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 *Project Manager*. No guarantees of power supply quality are given and power supply breaks of some duration may occur without warning.

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 *Project Manager*. 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.

Lighting
Area lighting immediately outside the boiler and turbine houses and stairway lighting is provided by the *Employer*. The *Contractor* at his own expense provides temporary local lighting in accordance with the requirements of the Occupational Health and Safety Act where necessary. The *Project Manager* provides no local lighting. All construction lighting is the responsibility of the *Contractor*.

Roads and vehicles
Main access roads are surfaced and complete and may be used by the *Contractor* with the necessary care. The *Employer* maintains the Site roads, described above, to a fair condition. Any costs incurred by the *Project Manager* from damage caused to underground services, structures, etc as a result of the *Contractor* not using the prescribed routes is recovered from the *Contractor*. The *Contractor* provides temporary access points from the prescribed routes and roads to the points where the *Contractor* is required to perform work, having first obtained permission in writing from the *Project Manager.*

All vehicles used on site, by the *Contractor* will be road worthy and fitted with fire extinguishers as required. All road signs, traffic laws and regulations on site shall be adhered to by the *Contractor*. *Contractor's* employees failing to comply with the above will be denied access onto site.

Ventilation
The *Contractor* is responsible for adequate ventilation of the works. The *Contractor* shall provide everything else necessary for Providing the Works.

Facilities provided by the *Contractor*

Contractor's **yard, offices, workshops and stores**

If it is required for the *Contractor* to have a site office for proper co-ordination and execution of the *Works,* the *Contractor* shall include in his establishment, rates for all further treatment of the yard areas that he considers necessary for his entire operation throughout his period of occupation. The *Contractor* also includes for all security fencing, security and access arrangements. Maintenance of the yard is the *Contractor's* responsibility and to the *Project Managers* acceptance.

Outfall drainage of all surface run-off drains is constructed by the *Contractor* to the acceptance of the *Project Manager* to minimise erosion and to effect control of contaminated water. The *Contractor's* plan for the layout of his yard area are accepted by the *Project Manager* prior to occupying the yard and the *Contractor* does not occupy any site area other than that allocated to him. The *Contractor's* plan states fully what measures are taken regarding removal and storage of topsoil, stabilisation of eroded areas and further loss of topsoil.

The Contractor complies with the environmental policy given in the Site regulations. The Contractor provides, erects and maintains for his own use adequate size office accommodation and stores together with such drainage, lighting, heating, and hot and cold water services as may be required. Provision is also made for adequate parking and a turning area adjacent to all the aforesaid structures. The *Supervisor* prior to commencement of any work on Site accepts all designs and layouts for these provisions.

The *Contractor* dismantles and clears the yard of all such temporary structures and associated foundations and infrastructure at the direction of the *Supervisor* on Completion of the whole of the *works*. No such dismantling and clearance work is carried out without prior acceptance from the *Supervisor.*

Telecommunications

Neither a network point nor a telephone is available on site. Should the *Contractor* require one, he is to make his own arrangements with relevant authorities. Should the *Contractor* wish to use radio communication equipment on site, he will make his own arrangements with the relevant authorities. In this case, he is requested to liaise with the head of security at the station to ensure that there is no interference with existing channels or equipment.

Sanitary facilities and refuse

The *Contractor* is to supply and maintain his own sanitary facilities at his *Contractor's* yard. A refuge control system will be established by the *Contractor*. All waste and refuge is collected and disposed of as directed by the *Project Manager.*

Equipment and appliances

Any electrical Equipment, or appliances, used by the *Contractor* conforms to the applicable Occupational Health and Safety Act and safety standards. The *Contractor* shall maintain his equipment and appliances in a safe and proper working condition. The *Project Manager* has the right to stop the *Contractor's* use of any electrical Equipment, or appliance, which, in the opinion of *Project Manager*, does not conform to the foregoing.

Any special tools and equipment to be used on site for the execution of the *works* is the responsibility of the*Contractor*. No extension of time and/or claim for standing time will be granted should the *Contractor* not conform to this specification.

Access to site

The *Contractor* makes his own assessment of, and allows in his rates for those access problems that may be encountered. No extra payment or claim of any kind is allowed on account of difficulties of access to the *works* or for the requirement of working adjacent to or in the same area as the *Employer*.

Site regulations

The *Contractor* complies with the Site Regulations, a copy of which is available at the *Project Manager's* offices. Any subject within the authority of the *Project Manager* may be addressed by a Site Regulation. Before work starts on Site, a kick-off meeting is held with the *Contractor* and the *Project Manager*, to explain in detail all requirements of the Site Regulations.

The *Contractor* is issued with a file of current Site Regulations at the project kick-off meeting. The file remains the property of the *Project Manager* and the *Contractor* is responsible for its maintenance and updating to include new or revised regulations as issued by the *Project Manager* during the course of the *works*.

Accommodation and transportation

The *Contractor* provides his own accommodation, meals and transport for all his employees engaged in the execution of the works. This includes the needs of his Sub-Contractors. The cost for accommodation, meals as well as for transportation to and from Site is included in the Prices. The *Contractor*'s employees are not allowed to sleep on site.

***Contractor's* organisation**

The *Contractor* submits a project organogram to the *Project Manager*.

Security

The *Contractor* provides security necessary for the protection of the *Works* at all times until the Completion of the whole of the *Works*. Access to the site is controlled and it is governed by the terms and conditions laid down by the Station Security Officials from time to time. The proposed site will be shown to the *Contractor* during site meeting or clarification meeting. The *Contractor* liaises via the *Project Manager* with the Power station Security staff in order to obtain temporary permits for his staff and vehicles which will be working within the station.

The *Contractor* submits his application for vehicle permit to the *Project Manager*. Personnel and vehicles entering and leaving the site are subject to routine searches. The *Contractor* must obtain a "Gate Permit" from the *Project Manager*, before materials and equipment can be removed from the site. The "Gate Permit" gives an itemised list of materials and equipment to be removed from site. If any *Contractor's* staff are transferred from Lethabo or leave Site, the person's permit is handed over to the *Supervisor*. The *Contractor* ensures that personnel leaving site are transported out of the security area and that the permit is returned.

No firearms, weapons, alcohol, illegal substances and cameras (including cell phones with cameras) are permitted on Site. No 'Private Work' is carried out for or on behalf of any *Employer's* employee. Any person suspected of being under the influence of alcohol is tested and if proved positive, is refused entry to the security area.