



NEC3 Term Service Contract (TSC3)

Between **ESKOM HOLDINGS SOC LIMITED**
(Reg No. 2002/015527/06)

and

for **General Service and Overhaul of Auxiliary and
Secondary Cooling Water Valves on unit 1-6 during
outages over a period of five (5) years at Lethabo
Power Station.**

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CONTRACT No.

PART C1: AGREEMENTS & CONTRACT DATA

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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:

General Service and Overhaul of Auxiliary and Secondary Cooling Water Valves on unit 1-6 during outages over a period of five (5) years 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 or C	The offered total of the Prices exclusive of VAT is	R
	Value Added Tax @ 15% is	R
	The offered total of the amount due inclusive of VAT is ¹	R

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:

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: Service 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 of this document, including the Schedule of Deviations (if any).

Signature(s)

Name(s)	Karabo Rakgolela	
Capacity	General Manager	
for the Employer	Lethabo Power Station Viljoensdrift Vereeniging	
	<i>(Insert name and address of organisation)</i>	

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

Karabo Rakgolela

Capacity

General Manager

On behalf
of

(Insert name and address of organisation)

Lethabo Power station
Viljoensdrift
Vereeniging

(Insert name and address of organisation)

Name &
signature
of witness

Date

C1.2 TSC3 Contract Data

Part one - Data provided by the *Employer*

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option:	
		A: Priced contract with price list
	dispute resolution Option	W1: Dispute resolution procedure
	and secondary Options	
		X1: Price adjustment for inflation
		X2: Changes in the law
		X17: Low service damages
		X18: Limitation of liability
		X19: Task Order
		Z: Additional conditions of contract
	of the NEC3 Term Service Contract (June 2005) ²	
10.1	The <i>Employer</i> is (name):	Eskom Holdings SOC Limited (Reg No: 2002/015527/06), a juristic person incorporated in terms of the company laws of the Republic of South Africa
	Address	Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg
	Tel No.	(011) 800-8111
10.1	The <i>Service Manager</i> is (name):	S Mdunge
	Address	Lethabo Power Station Private Bag X 415 Vereeniging 1930
	Tel	(016) 457-5272
	Fax	(016) 457-5869
	e-mail	MdungeSW@eskom.co.za
11.2(2)	The Affected Property is	Lethabo Power Station Unit 1 to 6
11.2(13)	The <i>service</i> is	General Service and Overhaul of Auxiliary

² Available from Engineering Contract Strategies Tel 011 803 3008 Fax 011 803 3009

and Secondary Cooling Water Valves on unit 1-6 during outages over a period of five (5) years at Lethabo Power Station.

11.2(14)	The following matters will be included in the Risk Register	1. Unavailability of spares during the outages. 2. Unavailability of the resources due to outages in multiple outages in other sites. 3. Movement of outages due to capacity plans. 4. Plant unavailability due to high temperatures (Opportunity Maintenance).
11.2(15)	The Service Information is in	Part 3: Scope of Work and all documents and drawings to which it makes reference.
12.2	The <i>law of the contract</i> is the law of	the Republic of South Africa
13.1	The <i>language of this contract</i> is	English
13.3	The <i>period for reply</i> is	2 days
2	The Contractor's main responsibilities	(If the optional statement for this section is not used, no data will be required for this section)
21.1	The <i>Contractor</i> submits a first plan for acceptance within	30 days before the start of each outage.
3	Time	
30.1	The <i>starting date</i> is.	TBA
30.1	The <i>completion date</i> is	TBA
4	Testing and defects	No data is required for this section of the conditions of contract.
5	Payment	
50.1	The <i>assessment interval</i> is	Completion of each task order
51.1	The <i>currency of this contract</i> is the	South African Rand
51.2	The period within which payments are made is	4 weeks.
51.4	The <i>interest rate</i> is	(i) zero percent above the publicly quoted prime rate of interest (calculated on a 365 day year) charged by from time to time by the Standard Bank of South Africa (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	(If the optional statement for this section is not used, no data will be required for this section)
	These are additional compensation events:	<div>1 [•]</div> <div>2 [•]</div>
7	Use of Equipment Plant and Materials	No data is required for this section of the <i>conditions of contract</i> .
8	Risks and insurance	
80.1	These are additional <i>Employer's</i> risks	NO
83.1	The <i>Employer</i> provides these insurances from the Insurance Table	as stated for "Format TSC3" available on http://www.eskom.co.za/live/content.php?Item_ID=9248 (See Annexure A for basic guidance).
83.1	The <i>Employer</i> provides these additional insurances	as stated for "Format TSC3" available on http://www.eskom.co.za/live/content.php?Item_ID=9248 (See Annexure A for basic guidance)
83.1	The minimum amount of cover for insurance against loss and damage caused by the <i>Contractor</i> to the <i>Employer's</i> property is	the amount of the deductibles relevant to the event described in the "Format TSC3" insurance policy available on http://www.eskom.co.za/live/content.php?Item_ID=9248
83.1	The minimum amount of cover for loss of or damage to Plant and Materials provided by the <i>Employer</i> is:	the amount of the deductibles relevant to the event described in the "Format TSC3" insurance policy available on http://www.eskom.co.za/live/content.php?Item_ID=9248
83.1	The minimum amount of cover for insurance in respect of loss of or damage to property (except the <i>Employer's</i> property, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i>) arising from or in connection with the <i>Contractor's</i> Providing the Service for any one event is:	whatever the <i>Contractor</i> deems necessary in addition to that provided by the <i>Employer</i> .
83.1	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their	As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the <i>Contractor's</i> common law liability for people falling outside the scope of

	employment in connection with this contract for any one event is:	the Act with a limit of Indemnity of not less than R500 000 (Five hundred thousand Rands)..		
9	Termination	NEC3 Contract will be used.		
10	Data for main Option clause			
A	Priced contract with price list			
20.5	The <i>Contractor</i> prepares forecasts of the final total of the Prices for the whole of the service at intervals no longer than	[•] weeks.		
11	Data for Option W1			
W1.1	The <i>Adjudicator</i> is (Name)	Either State the name of the person selected & complete the contact details below Or, state the person selected from the Eskom Panel of Adjudicators listed in Annexure B to this Contract Data by the Party intending to refer a dispute to him.		
	Address	[•]		
	Tel No.	[•]		
	Fax No.	[•]		
	e-mail	[•]		
W1.2(3)	The <i>Adjudicator nominating body</i> is:	the Chairman of the Joint Civils Division of the South African Institution of Civil Engineering. (See www.jointcivils.co.za)		
W1.4(2)	The <i>tribunal</i> is:	arbitration		
W1.4(5)	The <i>arbitration procedure</i> 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	The <i>base date</i> for indices is	TBA		
	The proportions used to calculate the Price Adjustment Factor are:	proportion	linked to index for	Index prepared by

		100%
X2	Changes in the law	of the Republic of South Africa is a compensation event if it occurs after the Contract Date
X17	Low service damages	
X17.1	The <i>service level table</i> is in	See page 16
X18	Limitation of liability	
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to	R500-00 Five hundred Rand per day
X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to	the amount of the deductibles relevant to the event described in the "Format TSC3" insurance policy available on http://www.eskom.co.za/live/content.php?Item_ID=9248
X18.3	The <i>Contractor's</i> liability for Defects due to his design of an item of Equipment is limited to	The greater of <ul style="list-style-type: none"> • the total of the Prices at the Contract Date and • the amounts excluded and unrecoverable from the <i>Employer's</i> insurance (other than the resulting physical damage to the <i>Employer's</i> property which is not excluded) plus the applicable deductibles in the <i>Employer's</i> assets and works / maintenance policies available on http://www.eskom.co.za/live/content.php?Item_ID=9248
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> , for all matters arising under or in connection with this contract, other than the excluded matters, is limited to	the total of the Prices other than for the additional excluded matters. The <i>Contractor's</i> total liability for the additional excluded matters is not limited. The additional excluded matters are amounts for which the <i>Contractor</i> is liable under this contract for <ul style="list-style-type: none"> • Defects due to his design, plan and specification, • Defects due to manufacture and fabrication outside the Affected Property, • loss of or damage to property (other than the <i>Employer's</i> property, 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 **12 months after the end of the *service period*.**

X19 Task Order

X19.5 The *Contractor* submits a Task Order programme to the *Service Manager* within **5 days of receiving the Task Order**

Z **The *additional conditions of contract* are** **Z1 to Z11 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 and the Electricity Distribution 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 *Service 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 substantially 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 *Service Manager* within thirty days of the notification or as otherwise instructed by the *Service 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 P4 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.

Z4 Ethics

- Z4.1 Any offer, payment, consideration, or benefit of any kind made by the *Contractor*, which constitutes or could be construed either directly or indirectly as an illegal or corrupt practice, as an inducement or reward for the award or in execution of this contract constitutes grounds for terminating the *Contractor's* obligation to Provide the Service or taking any other action as appropriate against the *Contractor* (including civil or criminal action).
- Z4.2 The *Employer* may terminate the *Contractor's* obligation to Provide the Service if the *Contractor* (or any member of the *Contractor* where the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations) is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices.

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

- Z4.3 Notwithstanding the provisions of core clause 90.2, the procedures on termination in terms of this clause are P1, P2 and P4 as stated in the core clause 92 and the amount due is A1 and A3 as stated in core clause 93.

Z5 Confidentiality

- Z5.1 The *Contractor* does not disclose or make any information arising from or in connection with this contract available to Others. This undertaking does not, however, apply to information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time). Should the *Contractor* disclose information to Others in terms of clause 25.1, the *Contractor* ensures that the provisions of this clause are complied with by the recipient.
- Z5.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Service Manager*.
- Z5.3 In the event that the *Contractor* is, at any time, required by law to disclose any such information which is required to be kept confidential, the *Contractor*, to the extent permitted by law prior to disclosure, notifies the *Employer* so that an appropriate protection order and/or any other action can be taken if possible, prior to any disclosure. In the event that such protective order is not, or cannot, be obtained, then the *Contractor* may disclose that portion of the information which it is required to be disclosed by law and uses reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed.
- Z5.4 The taking of images (whether photographs, video footage or otherwise) of the Affected Property or any portion thereof, in the course of Providing the Service and after the end of the *service period*, requires the prior written consent of the *Service Manager*. All rights in and to all such images vests exclusively in the *Employer*.
- Z5.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

Z6 Waiver and estoppel: Add to core clause 12.3:

- Z6.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the *Service Manager* or the *Adjudicator* does not constitute a waiver of rights, and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.

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

- Z7.1 The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *service*. Without limitation the *Contractor*:
- accepts that the *Employer* may appoint him as the "Principal Contractor" (as defined and provided for under the Construction Regulations 2003 (promulgated under the Occupational Health & Safety Act 85 of 1993) ("the Construction Regulations") for the Affected Property;
 - 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 the *service*; and
 - undertakes, in and about the execution of the *service*, to comply with the Construction Regulations and with all applicable health & safety laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.
- Z7.2 The *Contractor*, in and about the execution of the *service*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

Z8 Provision of a Tax Invoice and interest. Add to core clause 51

- Z8.1 Within one week of receiving a payment certificate from the *Service 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 Service Information, showing the amount due for payment equal to that stated in the payment certificate.
- Z8.2 If the *Contractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Employer* is to make a payment is extended by a period equal in time to the delayed submission of the correct tax invoice. Interest due by the *Employer* in terms of core clause 51.2 is then calculated from the delayed date by when payment is to be made.
- Z8.3 The *Contractor* (if registered in South Africa in terms of the companies Act) is required to comply with the requirements of the Value Added Tax Act, no 89 of 1991 (as amended) and to include the *Employer's* VAT number 4740101508 on each invoice he submits for payment.

Z9 Notifying compensation events

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

Z10 Employer's limitation of liability

- Z10.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)
- Z10.2 The *Contractor's* entitlement under the indemnity in 82.1 is provided for in 60.1(12) and the *Employer's* liability under the indemnity is limited to compensation as provided for under the compensation events stated in this contract.

Z11 Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":

- Z11.1 or had a judicial management order granted against it.

Annexure A: Insurance provided by the Employer

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

1. Services provided in a TSC3 contract could include some element of construction or refurbishment as well as a continuous maintenance or operational service activity. If an event occurs which causes loss or damage, a claim could be made either against the *Employer's* "works" type policy which may be in place for the *Employer's* portion of the Affected Property concerned or against the *Employer's* assets policy which may be in place for the *Employer's* portion of the Affected Property concerned, or both.
2. The cover provided and the deductibles under the works policy are different to those under the assets policy. Each policy has a range of applicable deductibles depending on the location of the Affected Property and the nature of the insurable event.
3. The *Contractor* is required in terms of Contract Data for clause 83 to provide cover for the deductibles in the insurance provided by the *Employer*. This can be provided from his own resources on a 'self insured' basis or obtained by him from his own insurers. In order to assess the extent of this cover, tendering contractors and their brokers should consult the internet web link given below and scroll to '**Format TSC3**' to establish both the cover and the deductibles in relation to the service provided in terms of this contract.
4. Tendering contractors should note that cover provided by the *Employer* is only per the policies available on the internet web link listed below and may not be the cover required by the tendering contractor or as intended by each of the listed insurances in the left hand column of the Insurance Table in clause 83.2. In terms of clause 83.1 "the *Contractor* provides the insurances stated in the Insurance Table except any insurance which the *Employer* is to provide". Hence the *Contractor* provides insurance which the *Employer* does not provide and in cases where the *Employer* does provide insurance the *Contractor* insures for the difference between what the Insurance Table requires and what the *Employer* provides.
5. If Marine Insurance is required the *Contractor* needs to obtain a copy of the latest edition of Eskom's Marine Policies Procedures found at internet website given below.
6. **Further information and full details of all Eskom provided policies and procedures may be obtained from:**

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

Annexure B: The *Employer's* Panel of Adjudicators

The following persons listed in alphabetical order of their surname have indicated their willingness to be included in the Eskom Panel of Adjudicators. Their CV's may be obtained by using the contact details provided.

Name	Location	Contact details (phone & e mail)
Nigel ANDREWS	Gauteng	+27 11 836-6760 nigela@quoin.net
Andrew BAIRD	Gauteng	+27 11 803 3008 andrewbaird@ecsconsult.co.za
Christopher BINNINGTON	Gauteng	+27 11 888-6141 cdb@bca.co.za
Peter HIGGINS	UK	+44 1293 873 868 peterhiggins@pdconsult.co.uk
Bruce LEECH	Gauteng	+27 11 290 4000 leech@counsel.co.za
Nigel NILEN	Gauteng	+27 11 465 3601; nilences@global.co.za
Peter THURLOW	Gauteng	+27 11 787 6226 info@thurlowassoc.com

Information about the Panel and appointment of the selected *Adjudicator* is available from Eskom Supply Chain Operations management, by contacting Leighton Itholeng (Tel.: +27 (0)11 800 4031) (Fax :+27 (0)86 668 0419) E-mail: Leighton.Itholeng@eskom.co.za

X17	Low service damages
X17.1	The <i>service level table</i> is

Low Service Damage Description	Value of Low Service Damages	Limit of Low Service Damages
Service delaying the outage Critical Path and other Contractor(s) from starting or completing their work.	1% per day of the Task Order value.	Limited to 15% of the Task Order value.
Service delays not finishing as per agreed upon schedule submitted to the Contract Manager.	1% per day of the Task Order value.	Limited to 15% of the Task Order value.
Rework due to poor workmanship.	1% per day of the Task Order value.	Limited to 15% of the Task Order value.
Response to NCR and Early warnings within 3 days.	1% per day of the Task Order value.	Limited to 15% of the Task Order value.
Failure to maintain housekeeping and closure of any housekeeping issues raised within 24 hours both in the plant and the Contractor's yard.	0.5% per day of the Task Order value.	Limited to 15% of the Task Order value.
Not providing appropriate PPE (SABS approved & company brand/logo)	0.5% per day of the Task Order value.	Limited to 15% of the Task Order value.
Failure to use FME covers as per FME procedure during the refurbishment of the valves; which may lead to foreign material ingressing the system.	0.5% per day of the Task Order value.	Limited to 15% of the Task Order value.
Use of substandard tools/equipment or any form of machinery i.e., non-road worthy vehicles, uncalibrated tools, etc	0.5% per day of the Task Order value.	Limited to 15% of the Task Order value.

Negligence or an act of omission from the contractor resulting in man hour's loss or any similar direct loss will be deemed as low service damages.

Service Manager: Signature: Date:
--

Contractor Manager: Signature: Date:

C1.2 Contract Data

Part two - Data provided by the *Contractor*

Notes to a tendering contractor:

1. Please read both the both the NEC3 Term Service Contract (June 2005) and the relevant parts of its Guidance Notes (TSC3-GN)³ in order to understand the implications of this Data which the tenderer is required to complete.
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 <i>Contractor</i> is (Name): Address Tel No. Fax No.	
11.2(8)	The <i>direct fee percentage</i> is	%
	The <i>subcontracted fee percentage</i> is	%
11.2(14)	The following matters will be included in the Risk Register	
11.2(15)	The Service Information for the <i>Contractor's</i> plan is in:	
21.1	The plan identified in the Contract Data is contained in:	
24.1	The key persons are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job: Responsibilities: Qualifications:	

³ Available from Engineering Contract Strategies Tel 011 803 3008 Fax 011 803 3009

Experience:

CV's (and further key person's data including
CVs) are in .

PART 2: PRICING DATA

TSC3 Option A

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option A	2
C2.2	The <i>price list</i>	19

Secondary Cooling Water Valves:

AKZ:	Description:	Price (EA)	Applicable to:	
			IR	MGO/GO
VC31S001	SEC CW PMP A SUCTION ISOL V/V		X	X
VC31S002	SEC CW PMP A DISCH NRV		X	X
VC31S003	SEC CW PMP A DISCH ISOL V/V		X	X
VC32S001	SEC CW PMP B SUCTION ISOL V/V		X	X
VC32S002	SEC CW PMP B DISCH NRV		X	X
VC32S003	SEC CW PMP B DISCH ISOL V/V		X	X
VC20S003	BFPT COND CW INL ISOL V/V			X
VC21S001	BFPT COND CW OUTL ISOL V/V			X
VC33S001	CW STRAINER 1 INL ISOL V/V			X
VC33S002	CW STRAINER 1 OUTL ISOL V/V			X
VC34S001	CW STRAINER 2 INL ISOL V/V			X
VC34S002	CW STRAINER 2 OUTL ISOL V/V			X
VC35S001	CW STRAINER 3 INL ISOL V/V			X
VC35S002	CW STRAINER 3 OUTL ISOL V/V			X
VC36S001	CW WTR WTR COOLER ISOL V/V		X	X
VC36S002	CW WTR WTR COOLER ISOL V/V		X	X
VC37S001	CW WTR WTR COOLER ISOL V/V		X	X
VC37S002	CW WTR WTR COOLER ISOL V/V		X	X
VC31S004	SEC CW PMP A SUCTION DRN V/V			X
VC31S005	SEC CW PMP A DISCH DRN V/V			X
VC32S004	SEC CW PMPS DISCH PIPE VENT			X
VC32S005	SEC CW PMP B SUCTION DRN V/V			X
VC32S006	SEC CW PMP B DISCH DRN V/V			X
VC33S003	BACK WASHING PIPE ISOL V/V			X
VC34S003	BACK WASHING PIPE ISOL V/V			X
VC35S003	BACK WASHING PIPE ISOL V/V			X
VC33S004	CW STRAINER 1 DP ISOL V/V 1			X
VC33S005	CW STRAINER 1 DP ISOL V/V 2			X
VC36S003	CW WTR WTR COOLER VENT			X
VC37S003	CW WTR WTR COOLER VENT			X
VC36S004	CW WTR WTR COOLER DRN V/V			X

VC37S004	CW WTR WTR COOLER DRN V/V			X
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Auxiliary Cooling Water Valves:

AKZ:	Description:		IR	MGO/GO
VF00F001-KA01	AUX CW FLOW ISOL 1			X
VF00F001-KA02	AUX CW FLOW ISOL 2			X
VF00S001	AUX CW WTR/WTR COOLE0RS MAIN INL ISOL V/V		X	X
VF00S002	AUX CW DUMPING ISOL V/V			X
VF00S003	AUX CW SAMPLING ISOL V/V			X
VF00S004	AUX CW VENT V/V			X
VF04S001	AUX CW WTR/WTR COOLER 1 INL ISOL V/V		X	X
VF04S002	AUX CW WTR/WTR COOLER 1 OUTL ISOL V/V		X	X
VF04S003	AUX CW WTR/WTR COOLER 1 SAMPLING			X
VF04S004	AUX CW WTR/WTR COOLER 1 DRN			X
VF04S005	AUX CW WTR/WTR COOLER 1 VENT			X
VF05S001	AUX CW WTR/WTR COOLER 2 INL ISOL V/V		X	X
VF05S002	AUX CW WTR/WTR COOLER 2 OUTL ISOL V/V		X	X
VF05S003	AUX CW WTR/WTR COOLER 2 SAMPLING V/V			X
VF05S004	AUX CW WTR/WTR COOLER 2 DRN			X
VF05S005	AUX CW WTR/WTR COOLER 2 VENT			X
VF06G001	AUX CW HEAD TANK			X
VF06L001-KA01	AUX CW TANK LVL 1 ISOL V/V			X
VF06S001	AUX CW TANK OUTL ISOL V/V			X
VF06S002	AUX CW TANK STANDPIPE TOP ISOL V/V			X
VF06S003	AUX CW TANK STANDPIPE BOTTOM ISOL V/V			X
VF06S004	AUX CW TANK STANDPIPE DRN V/V			X
VF06S005	AUX CW TANK STANDPIPE VENT V/V			X
VF06S006	AUX CW TANK STANDPIPE VENT V/V			X
VF07P501-KA01	AUX CW WTR/WTR COOLER BYPASS DP ISOL 1			X
VF07P501-KA02	AUX CW WTR/WTR COOLER BYPASS DP ISOL 2			X
VF07S001	AUX CW WTR/WTR COOLER BYPASS ISOL V/V			X
VF08S001	AUX CW TANK DRN V/V			X
VF09S001	AUX CW BYPASS FILTER 1 INL ISOL V/V			X
VF09S002	AUX CW BYPASS FILTER 1 OUTL ISOL V/V			X
VF09S003	AUX CW BYPASS FILTER 2 INL ISOL V/V			X
VF09S004	AUX CW BYPASS FILTER 2 OUTL ISOL V/V			X
VF10S001	GEN H2 COOLER 1 AUX CW INL ISOL V/V		X	X
VF10S002	GEN H2 COOLER 1 AUX CW OUTL ISOL V/V		X	X

VF10S003	GEN H2 COOLER 2 AUX CW INL ISOL V/V		X	X
VF10S004	GEN H2 COOLER 2 AUX CW OUTL ISOL V/V		X	X
VF10S005	GEN H2 COOLER 3 AUX CW INL ISOL V/V		X	X
VF10S006	GEN H2 COOLER 3 AUX CW OUTL ISOL V/V		X	X
VF10S007	GEN H2 COOLER 4 AUX CW INL ISOL V/V		X	X
VF10S008	GEN H2 COOLER 4 AUX CW OUTL ISOL V/V		X	X
VF10S009	EXCITER AIR COOLER AUX CW INL ISOL V/V			X
VF10S010	EXCITER AIR COOLER AUX CW OUTL ISOL V/V			X
VF10S011	EXCITER AIR COOLER TEMP REG V/V			X
VF10S011-KA01	EXCITER AIR COOLER TEMP REG V/V			X
VF10S012	GEN H2 COOLER TEMP REG V/V			X
VF10S012-KA01	GEN H2 COOLER TEMP REG V/V			X
VF10S013	AUX CW VENT V/V			X
VF10S014	GEN H2 COOLER 1 INL DRN			X
VF10S015	GEN H2 COOLER 2 INL DRN			X
VF10S016	GEN H2 COOLER 3 INL DRN			X
VF10S017	GEN H2 COOLER 4 INL DRN			X
VF10S018	EXCITER AIR COOLER INL DRN V/V			X
VF10S019	H2 COOLER DRN TO DA VES ISOL V/V			X
VF10S019-KA01	H2 COOLER DRN TO DA VES ISOL V/V			X
VF10S020	H2 COOLER VENT TO DA VES ISOL V/V			X
VF10S020-KA01	H2 COOLER VENT TO DA VES ISOL V/V			X
VF10S021	AUX CW TO DEAERATION VESSEL ISOL V/V			X
VF10S022	AUX CW TO DEAERATION VESSEL ISOL V/V			X
VF10S023	AUX CW TO DEAERATION VESSEL ISOL V/V			X
VF10S024	AUX CW TO DEAERATION VESSEL ISOL V/V			X
VF10S025	AUX CW GEN COOLERS HEADER DRN			X
VF10S026	AUX CW GEN COOLERS HEADER DRN			X
VF10S027	AUX CW GEN COOLERS HEADER VENT			X
VF10S034	GEN H2 COOLER 1 OUTL DRN			X
VF10S035	GEN H2 COOLER 2 OUTL DRN			X
VF10S036	GEN H2 COOLER 3 OUTL DRN			X
VF10S037	GEN H2 COOLER 4 OUTL DRN			X
VF10S038	EXCITER AIR COOLER OUTL DRN V/V			X
VF10S039	EXCITER AUX CW VENT V/V			X
VF10Z101	GEN H2 COOLER 1 DRN ORIFICE			X
VF10Z102	GEN H2 COOLER 2 DRN ORIFICE			X
VF10Z103	GEN H2 COOLER 3 DRN ORIFICE			X

VF10Z104	GEN H2 COOLER 4 DRN ORIFICE			X
VF11S001	MAIN TURB OIL TEMP REG V/V			X
VF11S002	TURB BRG OIL COOLER 1 INL ISOL V/V			X
VF11S003	TURB BRG OIL COOLER 1 OUTL ISOL V/V			X
VF11S004	TURB BRG OIL COOLER 2 INL ISOL V/V			X
VF11S005	TURB BRG OIL COOLER 2 OUTL ISOL V/V			X
VF11S007	TURB BRG OIL TEMP REG V/V ISOL V/V			X
VF12S001	STATOR COOLANT COOLER A AUX CW INL ISOL			X
VF12S002	STATOR COOLANT COOLER A AUX CW OUTL ISOL			X
VF12S003	STATOR COOLANT COOLER B AUX CW INL ISOL			X
VF12S004	STATOR COOLANT COOLER B AUX CW OUTL ISOL			X
VF12S005	STATOR COOLANT COOLER AUX CW INL DRN			X
VF12S006	STATOR COOLANT COOLER AUX CW OUTL DRN			X
VF13G001	DEAERATION VESSEL LVL REG VESSEL			X
VF13S001	AUX CW RETURN PMP SUCTION ISOL V/V			X
VF13S002	AUX CW RETURN PMP DISCHARGE NRV			X
VF13S003	FLOAT V/V AUX CW RETURN PMP DISCHARGE			X
VF13S004	AUX CW RETURN PMP DISCHARGE ISOL V/V			X
VF13S005	AUX CW RETURN PMP DRN			X
VF16S001	EXTR PMP A AUX CW INL ISOL V/V			X
VF16S002	EXTR PMP B AUX CW INL ISOL V/V			X
VF16S003	EXTR PMP A AUX CW OUTL ISOL V/V			X
VF16S004	EXTR PMP B AUX CW OUTL ISOL V/V			X
VF21S001	EFP A AUX CW INL ISOL V/V			X
VF21S002	EFP A AUX CW OUTL ISOL V/V			X
VF21S003	EFP A LUB OIL COOLER AUX CW DRN			X
VF21S004	EFP A WORKING OIL COOLER AUX CW DRN			X
VF22S001	EFP B AUX CW INL ISOL V/V			X
VF22S002	EFP B AUX CW OUTL ISOL V/V			X
VF22S003	EFP B WORKING OIL COOLER AUX CW DRN			X
VF22S004	EFP B LUB OIL COOLER AUX CW DRN			X
VF23S001	BFPT OIL TEMP REG V/V			X
VF23S001-KA01	BFPT OIL TEMP REG V/V			X
VF23S002	BFPT OIL COOLER 1 AUX CW INL ISOL V/V			X
VF23S003	BFPT OIL COOLER 1 AUX CW OUTL ISOL V/V			X
VF23S004	BFPT OIL COOLER 2 AUX CW INL ISOL V/V			X
VF23S005	BFPT OIL COOLER 2 AUX CW OUTL ISOL V/V			X

VF23S007	BFPT OIL TEMP REG V/V AUX CW INL ISOL			X
VF31S001	EFP A AUX CW INL ISOL V/V			X
VF31S002	EFP A AUX CW OUTL ISOL V/V			X
VF31S007	EFP A NDE MECH SEAL WTR COOLER AIR REL			X
VF31S008	EFP A DE MECH SEAL WTR COOLER AIR REL			X
VF32S001	EFP B AUX CW INL ISOL V/V			X
VF32S002	EFP B AUX CW OUTL ISOL V/V			X
VF32S007	EFP B MECH SEAL NDE COOLER AIR RELEASE			X
VF32S008	EFP B MECH SEAL DE COOLER AIR RELEASE			X
VF33S001	BFPT AUX CW INL ISOL V/V			X
VF33S002	BFPT AUX CW OUTL ISOL V/V			X
VF33S007	BFPT NDE MECH SEAL WTR COOLER AIR REL			X
VF33S008	BFPT DE MECH SEAL WTR COOLER AIR RELEASE			X
VF41S001	EFP A BASEPLATE AUX CW INL ISOL V/V			X
VF41S002	EFP A BASEPLATE AUX CW OUTL ISOL V/V			X
VF42S001	EFP B BASEPLATE AUX CW INL ISOL V/V			X
VF42S002	EFP B BASEPLATE AUX CW OUTL ISOL V/V			X
VF43S001	BFPT BASEPLATE AUX CW INL ISOL V/V			X
VF43S002	BFPT BASEPLATE AUX CW OUTL ISOL V/V			X
UG70S001	AUX CW TANK DEMIN WATER INL V/V		X	X
UG70S002	AUX CW TANK INL FLOAT V/V		X	X
UG70S003	FEED WATER TANK STANDPIPE FILLING ISOL			X
UG70S004	FEED WATER TANK STANDPIPE FILLING NRV			X
VF01S001	AUX CW PMP A SUCTION ISOL V/V		X	X
VF01S002	AUX CW PMP A DISCHARGE NRV		X	X
VF01S003	AUX CW PMP A DISCHARGE ISOL V/V		X	X
VF02D001	AUX CW PMP B		X	X
VF02D001-KP01	AUX CW PMP B PMP		X	X
VF02S001	AUX CW PMP B SUCTION ISOL V/V		X	X
VF02S002	AUX CW PMP B DISCHARGE NRV		X	X
VF02S003	AUX CW PMP B DISCHARGE ISOL V/V		X	X
VF03D001	AUX CW PMP C		X	X
VF03D001-KP01	AUX CW PMP C PMP		X	X
VF03S001	AUX CW PMP C SUCTION ISOL V/V		X	X
VF03S002	AUX CW PMP C DISCHARGE NRV		X	X
VF03S003	AUX CW PMP C DISCHARGE ISOL V/V		X	X

Unit On Outage	Type of Outage	Planned Start Date	Total Per Outage
5	IR	2025/08/15	
4	IR	2026/01/16	
1	GO	2026/08/10	
3	MGO	2027/01/25	
5	IR	2027/08/09	
4	MGO	2027/08/09	
6	IR	2027/08/09	
2	IR	2028/02/07	
1	IR	2028/09/11	
3	IR	2029/02/05	
5	MGO	2029/08/06	
2	MGO	2029/12/06	
Once Off Site Establishment			

SUPPLIER:		
..... PRINT NAME SIGNATURE DATE

PART 3: SCOPE OF WORK

Document reference	Title	No of pages
	This cover page	1
C3.1	<i>Employer's Service Information</i>	
C3.2	<i>Contractor's Service Information</i>	
	Total number of pages	17

C3.1: EMPLOYER'S SERVICE INFORMATION

Description of the *service*

3.1 Work to be performed by the *Contractor*

1. INTRODUCTION

Lethabo Power Station is a large coal fired power station, located between Vereeniging and Sasolburg in the Free State, and consists of six 618MW units for a total installed capacity of 3708MW.

Lethabo burns coal with a calorific value of 15-16MJ/kg and an ash content of 42%. It is the only power station in the world running with such low-grade coal.

The valves discussed in this document are categorized as low pressure and low temperature valves. Low pressure valves are defined as valves that operate at less than 100°C and less than or equal to 2 MPa. The different types of valves, discussed in the document, are as follow: butterfly valves (sizes up to but not including 600 NB), butterfly valves (600NB and higher), rubber gate valves, gate valves, globe valves, NRV's (flap), motorized valves, float valves and control valves.

This document serves as Lethabo Power Station Technical Specification for the refurbishment of auxiliary and secondary cooling water valves. This document must be used in conjunction with the following standards:

- Standard for Low Pressure Valves (Unique Identifier: 240-105020315).
- Standard for Large Bore Resilient Seal Butterfly Valves for use as Cooling Water Isolation Valves (Unique Identifier: 240-63094243).
- Technical Evaluation Standard for the Capability Assessment of Service Providers for The Refurbishment of Valves and Fitting in Eskom Coal Fired Power Plants.

2. SUPPORTING CLAUSES

2.1 Scope

This specification covers the minimum requirement for the refurbishment of low-pressure valves used on the auxiliary and secondary cooling water systems at Lethabo Power Station. This specification is to ensure maximum life expectancy and reliability and consistent quality during the refurbishment of these valves. This specification also indicates which valves on the auxiliary and secondary cooling water systems will be refurbished during IR and GO outages.

2.2 Purpose

The purpose of this specification is to clarify Eskom's requirements for refurbishment of low-pressure valves, on the auxiliary and secondary cooling water systems, so that all the valves refurbished are of consistent quality and to ensure plant reaches end of design life.

2.3 Applicability

This document shall apply to Lethabo Power Station.

2.4 Normative/Informative References

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

2.4.1 Normative

- [1] ISO 9001 Quality Management Systems.
- [2] EN 1092-1/2 Flanges and their joints – Circular flanges for pipes, valves, fittings and accessories, PN designated – Part 1, Steel Flanges.
- [3] EN 10204 Metallic Products - Type of Inspection Documents.
- [4] OHSACT Occupational Health and Safety Act of 1993.
- [5] API 598 Valve Inspection and Testing.

Employer's Specifications

- [6] 240-106628253 Standard for Welding Requirements on Eskom Plant.
- [7] 240-63094243 Standard for Large Bore Resilient Seal Butterfly Valves for use as Cooling water Isolation valves.
- [8] 240-105020315 Standard for Low Pressure Valves.
- [9] 240-101712128 Standard for Internal Corrosion Protection of Water Systems, Chemical Tanks
- [10] 240-105658000 Supplier Contract Quality Management Specification (QM-58).
- [11] 240-83539994 Standard for Non-Destructive Testing (NDT) on Eskom Plant.
- [12] 240-106365693 Standard for the External Corrosion Protection of Plant, Equipment and Associated Piping with Coatings.
- [13] 240-142257054 Technical Evaluation Standard for the Capability Assessment of Service Providers for The Refurbishment of Valves and Fittings in Eskom Coal Fired Power Plants.
- [14] 240-145581571 Standard for the Identification of the Contents of Pipelines and Vessels.

Drawing and Documentation Standards

- [15] 240-76992014 Project / Plant Specific Technical Documents and Records Management Work Instruction.
- [16] 240-65459834 Project Documentation Deliverable Requirement Specification.
- [17] 240-54179170 Technical Documentation Classification and Designation Standard.

[18]240-66920003 Documentation Management Review and Handover Procedure for Gx Coal Projects.

[19]240-86973501 Engineering drawing Standard.

2.4.2 Informative

None

2.5 Definitions

Definition	Description
Approved Inspection Authority	South African organisation that is approved by regulatory authority in terms of SANS 10227.
Cladding	Galvanised thin metal plate used to cover and protect the lagging.
Contractor	A group of people and facilities (corporation, firm, enterprise, institution etc.) with an arrangement of responsibilities, authorities, and relationships. It also refers to supplier, consultant, and service provider
Customer	The word customer refers to Eskom Holdings SOC Limited (in the context hereof referred to as Eskom)
Disc/disk/obturator	Movable component of the valve whose position in the fluid flow path permits, restricts or obstructs the fluid flow
Lagging	Insulation used to prevent heat losses, such as from a pipe or pressure vessel.
Manufacturer	The word supplier refers to the Manufacturer or Contractor involved with the production and or design of the final product,
Pipework	Pipes and fittings are used for the conveyance of steam, water, gases, or other fluids.
Quality Control Plan (QCP)	A document specifying the activities to be inspected throughout the execution of the project, inclusive of test methods, procedures, and acceptance criteria. (This term is equivalent to QIP and ITP)
Refurbishment	Restoration to a sustainable usable state or as near as possible to new state (within agreed limits)
Supplier	Entity supplying the final product to the client.
Valve	A device that regulates the flow of gases, liquids, fluidized solids, and slurries by opening, closing, or partially obstructing various passageways.

2.5.1 Disclosure Classification

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

2.6 Abbreviations

Abbreviation	Description
BFPT	Boiler Feed Pump Turbine
CV	Curriculum Vitae
CW	Cooling Water
C&I	Control and Instrumentation
ECM	Engineering Change Management

Abbreviation	Description
EFP	Electric Feed Pump
DP	Differential Pressure
FAT	Factory Acceptance Test
HP	High Pressure
ISO	International Standard Organisation
ITP	Inspection and Test Plan
LP	Low Pressure
MS	Main Steam
MTC	Main Turbine Condenser
NB	Nominal Bore
NCR	Non-conformance Report
NDT	Non-destructive Testing
NRV	Non-return-valve
OD	Outside Diameter
OEM	Original Equipment Manufacturer
PER	Pressure Equipment Regulations
PPE	Personal Protective Equipment
PTW	Permit To Work
PVC	Polyvinyl Chloride
QCP	Quality Control Plan
QM	Quality Management System
SANS	South African National Standards
SOW	Scope Of Work
SWL	Safe Working Load
RT	Radiography Testing
UCLF	Unit Capability Loss Factor
UV	Ultraviolet

2.7 Roles and Responsibilities

The Lethabo Power Station procurement department shall enforce the use and inclusion of this document during the enquiry phase of any future valve maintenance, repair, or refurbishment contracts, and further ensure that the capability of each potential service provider is assessed accordingly to provide assurance and confidence that access to opportunities is based on fair and equitable principle.

Service provider and vendor assessment are conducted to ensure that valve maintenance, repair, and refurbishment operations division task to carry out valve maintenance and repair activities are adequately equipped, skilled and experienced, have undergone the

required training and are proficiently capacitated to ensure that Lethabo Power Station is not unduly exposed to safety, reliability profitability risks.

2.8 Process for monitoring

N/A.

2.9 Related/Supporting Documents

N/A.

3. COMPLETE/TOTAL SCOPE OF WORK OVERVIEW

1. The scope of work consists of the minimum requirement for the refurbishment of auxiliary and secondary cooling water valves.
2. The contractor to familiarized themselves with the P&ID's, provided by engineering. The contractor is to know the functional locations of the valves on the plant.
3. The contractor to comply with the valve list discussed in this document, for refurbishment during IR and GO outages.
4. The contractor to use this document in conjunction with the following:
 - *Standard for Low Pressure Valves (Unique Identifier: 240-105020315).*
 - *Standard for Large Bore Resilient Seal Butterfly Valves for use as Cooling Water Isolation Valves (Unique Identifier: 240-63094243).*
 - *Technical Evaluation Standard for the Capability Assessment of Service Providers for The Refurbishment of Valves and Fitting in Eskom Coal Fired Power Plants.*
5. Contractor to comply with Eskom colour coding:
 - Standard for the Identification of the Contents of Pipelines and Vessels (Unique Identifier: 240-145581571).

4. WORKS INFORMATION (AUX AND SEC CW COOLING WATER VALVES)

4.1 Description of the system

4.1.1 Main cooling water system

The primary purpose of the station cooling water (CW) is to remove the latent heat of evaporation from the station condenser to the cooling towers (atmosphere). The station cooling water system is divided into sections-East and West. The west side supplies CW to unit 1, 2, and 3, while the East side supplies cooling water to units 4, 5 and 6.

Cooling water is supplied from the six CW pumps, which are situated in the CW pumphouse. The CW pumps take suction from a centre well, which is supplied with water

from the three cooling towers. The CW pumps supply the cold CW into two lines, called cold ducts, which runs half the length of the station, below ground.

After the water has passed through the condenser, water-water coolers and BFPT condenser, the now warm CW is fed into two lines, the hot ducts, which returns the hot water to the cooling towers to complete this main cooling water cycle.

4.1.2 Secondary cooling water system

Cooling water is tapped off from the two cold ducts and is joined in a common line (cold duct interconnect).

From this common line cooling water is supplied to the following items of the plant:

- Auxiliary cooling system water coolers (water-water coolers), spray water pits of Main Turbine and BFPT via CW booster pumps.
- BFPT condenser.
- BFPT mixed temperature water pit.

The common duct interconnect is fitted with hand-operated butterfly valves (1000NB, see standard 240-63094243) for isolation. A drain line with an isolating valve (150NB gate valve, see standard 240-105020315) is also installed on this interconnect.

4.1.3 Cooling water flow to the water-water coolers

This system not only supplies water to the water-water coolers, but also supplies water to the spray water pits of the main turbine and BFPT.

From the interconnector three lines tee off, two supplying each 100% secondary cooling water pump. Each pump is fitted with a butterfly isolating valve (600NB, see standard 240-63094243) on the suction line and a swing-check valve (600NB NRV) and isolating valve (600NB, see standard 240-63094243) on the discharge line. The isolating valves are hand operated.

The pumps discharge into a common line. At the highest point on this common line a vent line with an isolation valve (25NB ball valve, see standard 240-105020315). This common line is divided into three branch offs each supplying water through a strainer. Inlet and outlet butterfly valves (400NB, see standard 240-105020315) are installed on each strainer. A drain line with a hand-isolating valve (150NB globe valve) valve for each strainer discharges into a drain funnel.

4.1.4 Auxiliary cooling water system

The auxiliary cooling system is a closed circuit using demin water as a cooling medium. The advantage of this system is that the same water is continuously in circulation, also the water stays pure, rust and metal attack is eliminated.

The auxiliary cooling system consist of 3 pumps, each with 50% capacity. Two pumps are normally in service with the third pump being standby. The pump supply water into a common line from where it is distributed to the various plant auxiliaries. Each pump is equipped with a hand-isolating valve (500NB butterfly valve, see standard 240-105020315) on the suction and discharge line. Swing-check valve (500NB NRV) are also installed on the discharge lines immediately upstream of the hand isolating valve.

The return from the auxiliaries' discharges into a common return line. The warm water now passes through one of two plate type coolers (water-water cooler). Each cooler is provided with inlet and outlet hand isolating valves (500NB butterfly valve, see standard 240-105020315) Drain connections are installed on the inlet lines downstream of the isolating valves, and on the outlet line upstream of the outlet isolating valves (50NB Globe valve, see standard 240-105020315).

Vent connections are also installed on each of the outlet lines downstream of the coolers, vents are equipped with hand isolating valve (25NB globe valve, see standard 240-105020315).

Downstream of the point where the three discharge lines join each other a line tees off and allows 10% of the water to flow through two filter units. One filter will always be in service. Inlet and outlet valves (150NB gate valve, see standard 240-105020315) are installed for isolation.

4.1.5 Auxiliary cooling water flow through main turbine bearing oil coolers

The first branch-off from the common supply line supplies cooling water to the two main oil coolers installed in parallel in the main oil room. One cooler will always be in operation.

From the auxiliary cooling water range a line branches off and is equipped with a motorised "main turbine bearing oil" control valve (250NB control valve, see standard 240-105020315) and a normally open hand-isolating valve (250NB gate valve, see standard 240-105020315). This control valve regulates the amount of cooling water to the in-service cooler on a command from a temperature signal which comes from the oil leaving the

cooler, and which controls the temperature between 42 and 45°C. The higher the temperature of the oil, the more cooling water will be allowed to pass through the cooler.

Upstream of the coolers the common cooling water supply line divides and proceed to the coolers. Each cooler is supplied with an inlet and outlet-isolating valve (250NB gate valve, see standard 240-105020315). Vent connections are fitted to each outlet water box and drain connections are fitted on each inlet water box. An extra vent is installed at a point upstream of the cooler inlet valves. The drains and vents from these coolers discharge into a drain funnel. All valves (15NB,25NB,32NB globe valve, see standard 240-105020315) are hand operated.

A drain line with a hand-isolating valve (25NB globe valve, see standard 240-105020315) is also installed between the temperature regulating valve and the main isolating valve should this section of pipe need to be drained.

4.1.6 Auxiliary cooling water flow through EFP auxiliaries

The next-tap of the main supply line is a line, which supplies water via a hand-isolating valve (250NB gate valve, see standard 240-105020315) to the following:

- EFP coupling oil cooler (working oil cooler).
- EFP lubrication oil cooler.
- Motor coolers.

Before supplying the two motor air coolers, two lines branch off and supply water for:

- Pedestal cooling (40NB globe valve, see standard 240-105020315).
- Mechanical seal coolers via hand isolating valves (50NB globe valve, see standard 240-105020315).

A vent line is installed upstream of the lube oil and coupling oil coolers. These vents discharge into a funnel drain via hand-isolating valves (15NB globe valve, see standard 240-105020315).

The outlet from all the coolers discharges into a common return line. A hand-isolating valve (250NB gate valve, see standard 240-105020315) is installed on the common supply and return line) will at the same time isolate all the other coolers on this pump.

The cooling water arrangement for the second EFP is identical to those already discussed.

The pedestal and mechanical seal cooling water for the BFPT is obtained via a line which comes off a point between the cooling water lines for the two EFP's. The return discharges into a common return line.

4.1.7 Auxiliary cooling water flow through the BFPT oil coolers

Two oil coolers are installed in parallel for the BFPT to cope with the total lubricating oil flow of the BFPT, (i.e.) lubrication oil. One cooler will always be in service.

From the supply line, which supplies the EFP coolers, a line branches off and supplies water to the BFPT oil coolers via a hand-isolating valve (125NB gate valve, see standard 240-105020315) and a motorised control valve (125NB control valve, see standard 240-105020315). This control valve regulates the amount of cooling water to the in-service cooler on a command from a temperature signal which come from the oil leaving the cooler, and which controls the temperature between 38°C and 42°C. The higher the temperature of the oil, the more cooling water will be allowed to pass through the cooler. A flow-measuring orifice is installed on the common discharge line from the oil coolers.

Each cooler is supplied with an inlet and outlet-isolating valve (125NB gate valve, see standard 240-105020315). Vent connections are fitted to each inlet water box and two drains are fitted to each outlet water box. The drains and vents from these coolers discharge into a drain funnel. All valves are hand operated (15NB,32NB globe valve, see standard 240-105020315).

A drain line with a hand-isolating valve (25NB globe valve, see standard 240-105020315) is also installed between the temperature-regulating valve and the main isolating (hand) valve should this section of pipe need to be drained.

4.1.8 Auxiliary cooling water supply to main condensate pumps

The third supply from the auxiliary cooling system goes to the main condensate extraction pumps for cooling of the pump and motor bearings.

The only valves on this system are the inlet and outlet isolating valves (25NB globe valve, see standard 240-105020315). The return from this system also discharges into the common return line.

4.1.9 Auxiliary cooling water to control fluid cooler

This system, which is separate from the turbine lubrication oil system, consists of one cooler, which is sufficient to cool the total control fluid for the turbine control system.

The fourth supply from this common auxiliary cooling water main supplies water to the cooler via a hand-isolating valve (50NB gate valve, see standard 240-105020315), motorised temperature regulating valve (50NB control valve, see standard 240-

105020315) and another hand isolating valve (50NB gate valve, see standard 240-105020315) upstream of the cooler.

The temperature control valve regulates the amount of cooling water to the cooler on command from a fluid temperature signal which comes from the fluid leaving the cooler and which controls the temperature between 50 - 55°C when the heater is off. The lower the temperature, the less cooling water will be allowed to pass through the cooler.

An inlet water box vent and an outlet water box drain are also installed. A drain line is also installed on the supply line and tees off between the first isolating valve and the temperature-regulating valve. All drains and vents drain into a tundish via hand-isolating valves (50NB globe valve, see standard 240-105020315).

4.1.10 Auxiliary cooling water supply to H2 and Exciter coolers

The last supply from this common line, turbine side, supplies cooling water to all the coolers associated with the alternator via a common manifold. Upstream of this supply, a line also tee's off and supplies cooling water to the 20 KV breaker cooling system.

The first tap-off supplies water to the exciter air cooler via inlet and outlet isolating valves (80NB gate valve, see standard 240-105020315).

Two drain lines are connected to the inlet and outlet lines and drain via hand isolating valves (25NB globe valve, see standard 240-105020315) in a tundish.

The second supply supplies water to the hydrogen (H2) coolers (x4).

Each cooler is supplied via an isolating valve (150NB rubber gate valve, see standard 240-105020315) and flow orifice. Outlet isolating valves are also installed.

Inlet and outlet drain lines are installed on each cooler. These drains discharge into a tundish via isolating valves (25NB globe valve, see standard 240-105020315). The outlet from the coolers discharge into a common header.

4.1.11 Auxiliary cooling water through stator coolant coolers

Two stator coolant coolers are installed in parallel to cool the stator water that circulates through the stator bars (windings).

The cooling water to the coolers is supplied by a line, which taps off a point downstream of the cooler inlet manifold. Each cooler is equipped with inlet and outlet hand-isolating

valves (300NB gate valve, see standard 240-105020315). The discharge from the coolers flows back into the common return line upstream of the H2 cooler discharge manifold.

4.2 valve refurbishment during outages

4.2.1 Secondary cooling water valve replacement during outages

Table 1: Secondary cooling water valve replacement during outages

AKZ	Description:	IR	GO
VC31S001	SEC CW PMP A SUCTION ISOL V/V	X	X
VC31S002	SEC CW PMP A DISCH NRV	X	X
VC31S003	SEC CW PMP A DISCH ISOL V/V	X	X
VC32S001	SEC CW PMP B SUCTION ISOL V/V	X	X
VC32S002	SEC CW PMP B DISCH NRV	X	X
VC32S003	SEC CW PMP B DISCH ISOL V/V	X	X
VC20S001	CW COLD CROSS OVER ISOL V/V (half station shutdown)	X	X
VC20S002	CW COLD CROSS OVER ISOL V/V (half station shutdown)	X	X
VC21S002	CW HOT CROSS OVER ISOL V/V (half station shutdown)	X	X
VC21S003	CW HOT CROSS OVER ISOL V/V (half station shutdown)	X	X
VC20S003	BFPT COND CW INL ISOL V/V (half station shutdown)	X	X
VC21S001	BFPT COND CW OUTL ISOL V/V (half station shutdown)	X	X
VC33S001	CW STRAINER 1 INL ISOL V/V		X
VC33S002	CW STRAINER 1 OUTL ISOL V/V		X
VC34S001	CW STRAINER 2 INL ISOL V/V		X
VC34S002	CW STRAINER 2 OUTL ISOL V/V		X
VC35S001	CW STRAINER 3 INL ISOL V/V		X
VC35S002	CW STRAINER 3 OUTL ISOL V/V		X
VC36S001	CW WTR WTR COOLER ISOL V/V	X	X
VC36S002	CW WTR WTR COOLER ISOL V/V	X	X
VC37S001	CW WTR WTR COOLER ISOL V/V	X	X
VC37S002	CW WTR WTR COOLER ISOL V/V	X	X
VC31S004	SEC CW PMP A SUCTION DRN V/V		X
VC31S005	SEC CW PMP A DISCH DRN V/V		X
VC32S004	SEC CW PMPS DISCH PIPE VENT		X
VC32S005	SEC CW PMP B SUCTION DRN V/V		X
VC32S006	SEC CW PMP B DISCH DRN V/V		X
VC33S003	BACK WASHING PIPE ISOL V/V		X
VC34S003	BACK WASHING PIPE ISOL V/V		X
VC35S003	BACK WASHING PIPE ISOL V/V		X
VC33S004	CW STRAINER 1 DP ISOL V/V 1		X

VC33S005	CW STRAINER 1 DP ISOL V/V 2		X
VC36S003	CW WTR WTR COOLER VENT		X
VC37S003	CW WTR WTR COOLER VENT		X
VC36S004	CW WTR WTR COOLER DRN V/V		X
VC37S004	CW WTR WTR COOLER DRN V/V		X

4.2.2 Auxiliary cooling water valve replacement during outages

Table 2: Auxiliary cooling water valve replacement during outages

AKZ	Description	IR	GO
VF00S001	AUX CW WTR/WTR COOLERS MAIN INL ISOL V/V		X
VF00S003	AUX CW SAMPLING ISOL V/V		X
VF00S004	AUX CW VENT V/V		X
VF04S001	AUX CW WTR/WTR COOLER 1 INL ISOL V/V	X	X
VF04S002	AUX CW WTR/WTR COOLER 1 OUTL ISOL V/V	X	X
VF04S003	AUX CW WTR/WTR COOLER 1 SAMPLING		X
VF04S004	AUX CW WTR/WTR COOLER 1 DRN		X
VF04S005	AUX CW WTR/WTR COOLER 1 VENT		X
VF05S001	AUX CW WTR/WTR COOLER 2 INL ISOL V/V	X	X
VF05S002	AUX CW WTR/WTR COOLER 2 OUTL ISOL V/V	X	X
VF05S003	AUX CW WTR/WTR COOLER 2 SAMPLING V/V		X
VF05S004	AUX CW WTR/WTR COOLER 2 DRN		X
VF05S005	AUX CW WTR/WTR COOLER 2 VENT		X
VF06S001	AUX CW TANK OUTL ISOL V/V		X
VF06S002	AUX CW TANK STANDPIPE TOP ISOL V/V		X
VF06S003	AUX CW TANK STANDPIPE BOTTOM ISOL V/V		X
VF06S004	AUX CW TANK STANDPIPE DRN V/V		X
VF06S005	AUX CW TANK STANDPIPE VENT V/V		X
VF06S006	AUX CW TANK STANDPIPE VENT V/V		X
VF07S001	AUX CW WTR/WTR COOLER BYPASS ISOL V/V		X
VF08S001	AUX CW TANK DRN V/V		X
VF09S001	AUX CW BYPASS FILTER 1 INL ISOL V/V		X
VF09S002	AUX CW BYPASS FILTER 1 OUTL ISOL V/V		X
VF09S003	AUX CW BYPASS FILTER 2 INL ISOL V/V		X
VF09S004	AUX CW BYPASS FILTER 2 OUTL ISOL V/V		X
VF10S001	GEN H2 COOLER 1 AUX CW INL ISOL V/V		X
VF10S002	GEN H2 COOLER 1 AUX CW OUTL ISOL V/V		X
VF10S003	GEN H2 COOLER 2 AUX CW INL ISOL V/V		X
VF10S004	GEN H2 COOLER 2 AUX CW OUTL ISOL V/V		X

VF10S005	GEN H2 COOLER 3 AUX CW INL ISOL V/V		X
VF10S006	GEN H2 COOLER 3 AUX CW OUTL ISOL V/V		X
VF10S007	GEN H2 COOLER 4 AUX CW INL ISOL V/V		X
VF10S008	GEN H2 COOLER 4 AUX CW OUTL ISOL V/V		X
VF10S009	EXCITER AIR COOLER AUX CW INL ISOL V/V		X
VF10S010	EXCITER AIR COOLER AUX CW OUTL ISOL V/V		X
VF10S011	EXCITER AIR COOLER TEMP REG V/V		X
VF10S012	GEN H2 COOLER TEMP REG V/V		X
VF10S013	AUX CW VENT V/V		X
VF10S014	GEN H2 COOLER 1 INL DRN		X
VF10S015	GEN H2 COOLER 2 INL DRN		X
VF10S016	GEN H2 COOLER 3 INL DRN		X
VF10S017	GEN H2 COOLER 4 INL DRN		X
VF10S018	EXCITER AIR COOLER INL DRN V/V		X
VF10S019	H2 COOLER DRN TO DA VES ISOL V/V		X
VF10S020	H2 COOLER VENT TO DA VES ISOL V/V		X
VF10S021	AUX CW TO DEAERATION VESSEL ISOL V/V		X
VF10S022	AUX CW TO DEAERATION VESSEL ISOL V/V		X
VF10S023	AUX CW TO DEAERATION VESSEL ISOL V/V		X
VF10S024	AUX CW TO DEAERATION VESSEL ISOL V/V		X
VF10S025	AUX CW GEN COOLERS HEADER DRN		X
VF10S026	AUX CW GEN COOLERS HEADER DRN		X
VF10S027	AUX CW GEN COOLERS HEADER VENT		X
VF10S034	GEN H2 COOLER 1 OUTL DRN		X
VF10S035	GEN H2 COOLER 2 OUTL DRN		X
VF10S036	GEN H2 COOLER 3 OUTL DRN		X
VF10S037	GEN H2 COOLER 4 OUTL DRN		X
VF10S038	EXCITER AIR COOLER OUTL DRN V/V		X
VF10S039	EXCITER AUX CW VENT V/V		X
VF11S001	MAIN TURB OIL TEMP REG V/V		X
VF11S002	TURB BRG OIL COOLER 1 INL ISOL V/V		X
VF11S003	TURB BRG OIL COOLER 1 OUTL ISOL V/V		X
VF11S004	TURB BRG OIL COOLER 2 INL ISOL V/V		X
VF11S005	TURB BRG OIL COOLER 2 OUTL ISOL V/V		X
VF11S007	TURB BRG OIL TEMP REG V/V ISOL V/V		X
VF12S001	STATOR COOLANT COOLER A AUX CW INL ISOL		X
VF12S002	STATOR COOLANT COOLER A AUX CW OUTL ISOL		X
VF12S003	STATOR COOLANT COOLER B AUX CW INL ISOL		X
VF12S004	STATOR COOLANT COOLER B AUX CW OUTL ISOL		X

VF12S005	STATOR COOLANT COOLER AUX CW INL DRN		X
VF12S006	STATOR COOLANT COOLER AUX CW OUTL DRN		X
VF13S001	AUX CW RETURN PMP SUCTION ISOL V/V		X
VF13S002	AUX CW RETURN PMP DISCHARGE NRV		X
VF13S003	FLOAT V/V AUX CW RETURN PMP DISCHARGE		X
VF13S004	AUX CW RETURN PMP DISCHARGE ISOL V/V		X
VF13S005	AUX CW RETURN PMP DRN		X
VF16S001	EXTR PMP A AUX CW INL ISOL V/V		X
VF16S002	EXTR PMP B AUX CW INL ISOL V/V		X
VF16S003	EXTR PMP A AUX CW OUTL ISOL V/V		X
VF16S004	EXTR PMP B AUX CW OUTL ISOL V/V		X
VF21S001	EFP A AUX CW INL ISOL V/V		X
VF21S002	EFP A AUX CW OUTL ISOL V/V		X
VF21S003	EFP A LUB OIL COOLER AUX CW DRN		X
VF21S004	EFP A WORKING OIL COOLER AUX CW DRN		X
VF22S001	EFP B AUX CW INL ISOL V/V		X
VF22S002	EFP B AUX CW OUTL ISOL V/V		X
VF22S003	EFP B WORKING OIL COOLER AUX CW DRN		X
VF22S004	EFP B LUB OIL COOLER AUX CW DRN		X
VF23S001	BFPT OIL TEMP REG V/V		X
VF23S002	BFPT OIL COOLER 1 AUX CW INL ISOL V/V		X
VF23S003	BFPT OIL COOLER 1 AUX CW OUTL ISOL V/V		X
VF23S004	BFPT OIL COOLER 2 AUX CW INL ISOL V/V		X
VF23S005	BFPT OIL COOLER 2 AUX CW OUTL ISOL V/V		X
VF23S006	BFPT OIL COOLER 1 AUX CW VENT		X
VF23S007	BFPT OIL TEMP REG V/V AUX CW INL ISOL		X
VF23S008	BFPT OIL COOLER 1 AUX CW DRN V/V		X
VF23S009	BFPT OIL COOLER 2 AUX CW VENT V/V		X
VF23S010	BFPT OIL TEMP REG V/V AUX CW DRN		X
VF23S011	BFPT OIL COOLER 2 AUX CW DRN		X
VF23S012	BFPT AUX CW INL ISOL V/V		X
VF23S013	BFPT AUX CW OUTL ISOL V/V		X
VF31S001	EFP A AUX CW INL ISOL V/V		X
VF31S002	EFP A AUX CW OUTL ISOL V/V		X
VF31S007	EFP A NDE MECH SEAL WTR COOLER AIR REL		X
VF31S008	EFP A DE MECH SEAL WTR COOLER AIR REL		X
VF32S001	EFP B AUX CW INL ISOL V/V		X
VF32S002	EFP B AUX CW OUTL ISOL V/V		X
VF32S007	EFP B MECH SEAL NDE COOLER AIR RELEASE		X

VF32S008	EFP B MECH SEAL DE COOLER AIR RELEASE		X
VF33S001	BFPT AUX CW INL ISOL V/V		X
VF33S002	BFPT AUX CW OUTL ISOL V/V		X
VF33S007	BFPT NDE MECH SEAL WTR COOLER AIR REL		X
VF33S008	BFPT DE MECH SEAL WTR COOLER AIR RELEASE		X
VF41S001	EFP A BASEPLATE AUX CW INL ISOL V/V		X
VF41S002	EFP A BASEPLATE AUX CW OUTL ISOL V/V		X
VF42S001	EFP B BASEPLATE AUX CW INL ISOL V/V		X
VF42S002	EFP B BASEPLATE AUX CW OUTL ISOL V/V		X
VF43S001	BFPT BASEPLATE AUX CW INL ISOL V/V		X
VF43S002	BFPT BASEPLATE AUX CW OUTL ISOL V/V		X
UG70S001	AUX CW TANK DEMIN WATER INL V/V	X	X
UG70S002	AUX CW TANK INL FLOAT V/V	X	X
UG70S003	FEED WATER TANK STANDPIPE FILLING ISOL		X
UG70S004	FEED WATER TANK STANDPIPE FILLING NRV		X
VF01S001	AUX CW PMP A SUCTION ISOL V/V	X	X
VF01S002	AUX CW PMP A DISCHARGE NRV	X	X
VF01S003	AUX CW PMP A DISCHARGE ISOL V/V	X	X
VF02S001	AUX CW PMP B SUCTION ISOL V/V	X	X
VF02S002	AUX CW PMP B DISCHARGE NRV	X	X
VF02S003	AUX CW PMP B DISCHARGE ISOL V/V	X	X
VF03S001	AUX CW PMP C SUCTION ISOL V/V	X	X
VF03S002	AUX CW PMP C DISCHARGE NRV	X	X
VF03S003	AUX CW PMP C DISCHARGE ISOL V/V	X	X
VF15S001	MAIN TURB C/FLUID TEMP REG V/V ISOL V/V		X
VF15S002	MAIN TURB C/FLUID TEMP REG V/V		X
VF15S003	MAIN TURB C/FLUID COOLER AUX CW INL ISOL		X
VF15S004	MAIN TURB C/FLUID CLR AUX CW OUTL ISOL		X

4.3 SCOPE OF WORK

4.3.1 Flow measurement valves

- Calibrate flow measurement valves.

4.3.2 Butterfly valve (Ainsworth)

- Strip valve and clean components.
- Visual inspection on valve seat & retaining ring, body seat, body internal coating, shaft, and bushes.
- Line bore and install new bushes and pins if damage is found in the inspection.
- Blast clean and coat valve body internal and disk.

- Replace O-ring (natural rubber), must be a single continuous ring, not made up from glued chords.
- Replace retaining ring (use stainless steel 316 Allen cap and grub screws).
- After pressure test, all Allen cups and grub screws to be glued with lock tight to prevent loosening.
- Clean gearbox and repack with new grease (LS3 grease).
- Replace gasket (use klinger4430).
- Replace shaft lip seals.
- Reassemble valve and pressure test to 700kPa for 5 minutes.
- Valves are to pass the pressure test with 100% sealing, no leaking tolerance accepted.
- On site leak test and directional testing will also be done.

4.3.3 Rubber gate valve (Ainsworth)

- Strip valve and clean components.
- Visual inspection on spindle, rubber gate and body internal coating.
- Replace rubber gate if required.
- Repair coating if required.
- Replace gland packing (crane water packing).
- Replace gaskets.
- Replace dome rubber O-ring, must be a single continuous ring, not made up from glued chords.

4.3.4 Gate valve (Beta)

- Strip valve and clean components.
- Visual inspection on spindle, rubber gate and body internal coating.
- Replace rubber gate if required.
- Repair coating if required.
- Replace gland packing (crane water packing or graphite).
- Replace gaskets.
- Replace dome rubber O-ring.

4.3.5 Globe valve (BOA 50)

- Strip valve and clean components.
- Visual inspection on spindle, valve seat, body seat and body internals.
- Lap and blue check valve seats.
- Replace gland packing (graphite).
- Replace body gasket (copper gasket).

4.3.6 NRV (wing-check valve/flap)

- Strip valve and clean components.
- Visual inspection on shaft & bushes, valve seat, body seat and body internal coating.
- Record shaft to bush clearances.
- Fit new bushes and line bore if required.
- Replace shaft lip seals.
- Blast clean and coat valve body internal and flap.

4.3.7 Globe valve (KSB)

- Strip valve and clean components.
- Visual inspection on spindle, valve seat, body seat and body internals.
- Lap and blue check valve seats.
- Replace gland packing - graphite packing.
- Replace body gasket (copper washer).

4.3.8 Motorised valve

- Ensure that mechanical position is properly marked.
- Stroke check valve before returning it to operation.

4.3.9 Float valve

- Strip and clean.
- Inspect rubber seat.
- Replace gland packing.
- Replace Teflon seal.

4.3.10 Control valve

- Nut and spindle inspection, check for signs of wear.
- Bearings – Inspection and replace both bearings, based on amount of visible wear.
- Cleaning and inspection of ports.
- Lapping.
- Blue Check.
- Stroke check after reassembly.

4.4 BILL OF MATERIALS

Table 3: Bill of materials

Type	COMPONENT DESCRIPTION	COMPONENT / MATERIAL SPECIFICATION	OPERATING PARAMETERS
Butterfly valve	Grease for packing	LS3	T < 60°C; P < 10 bar
	Gaskets	Klinger 4430	T < 60°C; P < 10 bar
	Grub Screws	Stainless steel 316	T < 60°C; P < 10 bar
	Allen Caps	Stainless steel 316	T < 60°C; P < 10 bar
	O-rings	Natural rubber solidly manufactured. No joint or glued cords will be accepted	T < 60°C; P < 10 bar
	Retaining rings	Stainless Steel 316	T < 60°C; P < 10 bar
	Bushes (if damaged)		T < 60°C; P < 10 bar
	Pins (if damaged)		T < 60°C; P < 10 bar
	Lock tight to clue allen caps and grub screws in position after pressure test		T < 60°C; P < 10 bar
	Pressure testing facilities	7 – 10 bar capability	T < 60°C; P < 10 bar
	Calibrated pressure gauges	7 – 10 bar capability	T < 60°C; P < 10 bar
	Shaft lip seals		T < 60°C; P < 10 bar
	Grit blasting	To surface preparation standard SA 2	T < 60°C; P < 10 bar
	Internal Coating	Epoxy coating to 200 microns	T < 60°C; P < 10 bar
	Needle bearings for worm gear shaft		T < 60°C; P < 10 bar
Gate valves	Rubber gate (if required)		T < 60°C; P < 10 bar
	O-rings	Dome rubber O-ring. Must be a single continuous ring, not made up from glued chords.	T < 60°C; P < 10 bar
	Gland packing	Crane water packing or graphite packing	T < 60°C; P < 10 bar
	Pressure test on body and seat		T < 60°C; P < 10 bar
	Calibrated pressure gauges for pressure testing		T < 60°C; P < 10 bar
	Gaskets	Klinger 4430 (only if removed from plant)	T < 60°C; P < 10 bar
	Grit blasting	To surface preparation standard SA 2	T < 60°C; P < 10 bar
	Internal Coating	Epoxy coating to 200 microns	T < 60°C; P < 10 bar
Globe valves	Gasket	Copper	T < 60°C; P < 10 bar
	Gland Packing	Graphite	T < 60°C; P < 10 bar
Swing-check valve (NRV)	Sandblasting	To surface preparation standard SA 2	T < 60°C; P < 10 bar
	Internal Coating	Epoxy coating to 200 microns	T < 60°C; P < 10 bar
	Shaft Lip Seals		T < 60°C; P < 10 bar
	Bushes		T < 60°C; P < 10 bar
	Gaskets	Klinger 4430	T < 60°C; P < 10 bar
Control valve	Gland Packing		T < 60°C; P < 10 bar
	Bearings		T < 60°C; P < 10 bar

	Teflon Seals		T < 60°C; P < 10 bar
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5. ADDITIONAL INFORMATION

5.1 Quality

Quality standards will be in line with the national and international standards listed in: Standard for Low Pressure Valves (Unique Identifier: 240-105020315). Audits will be carried out from time to time to ensure that quality standards are maintained.

5.2 Quality control

The Contractor who executes the refurbishment activity is responsible for the quality of their work. Formal quality control shall be applied as appropriate to all level 1 and 2 plants and to all critical activities on level 3 plants. The quality inspection plan must contain the minimum quality control requirements.

5.3 Quality inspection plans

Quality inspection plans define the sequence of activities to be performed. The QIP must indicate all associated hold and witness points as well as the person responsible for these activities. All controlling documentation must be indicated as well as the documentation required.

5.4 Lethabo quality control inspectors

- Quality control inspections will be conducted on behalf of Eskom by a quality inspector from maintenance support services section.
- The quality inspector must be authorised by the Power Station Maintenance Manager in terms of LMA10002.
- The inspections will be carried out to provide an assessment of conformance to specification and quality requirements.
- These inspections do not take any responsibility away from the supervisor or artisan performing the work.

5.5 Quality control inspector's responsibilities

- Reviewing maintenance procedures and work instructions and indicating witness and hold points.
- Verifying that specified quality requirements have been achieved by inspecting work in progress and indicating acceptance on the quality control plan.
- Ensuring that quality control plans conform to the requirements of Lethabo Power Station and that these quality control plans are completed for all valves overhauled.

The quality control plan must be made available by the Employer's Representative prior to commencement of work for review.

- Ensuring that acceptable maintenance/refurbishment practice and all relevant codes, standards and statutory requirements are adhered to.
- The quality inspector has the authority to stop work where an inadequacy threatens the safety of plant or personnel. It is the responsibility of the person performing the activity to inform the quality inspector prior to reaching a witness or hold point. In the case of a major outage the quality inspector must be informed at least one day in advance.

5.6 Quality control checkpoints

- A copy of the QCP indicating all hold and witness points must be submitted with the tender documents.
- The Eskom quality inspector must be informed 24 hours in advance of any hold or witness points.
- Inspection of internals.
- NDE (Non-Destructive Testing).
- Inspection of disc and seat "blueing".
- Replacement of gaskets and pressure seals.
- Valve assembly.
- Document completed.
- Pressure test.

5.7 requirements on welding

- Any welding to be done on the valve body must be confirmed by Eskom QC and/or Eskom Engineering.
- Any welding be done must only be done by the approved valve bodies welding supplier and the Employer must be notified before the welding is carried out (Eskom AIA involvement compulsory).
- If special processes such as welding, seat hard facing, weld overlay is carried out, the service provider provides demonstrable proof of the applicable ISO 3834, certification (Eskom AIA involvement compulsory).

5.8 requirements for blasting and coating of valves

- Any contaminants such as oil should be removed.
- Blast cleaned to surface preparation grade SA2.

- Coated with epoxy type coating suitable for immersion, in accordance Eskom procedure within 12 hours of blasting.

For further coating specification refer to Standard for Large Bore Resilient Seal Butterfly Valves for use as Cooling Water Isolation Valves (Unique Identifier: 240-63094243).

5.9 requirements for corrosion protection

All valves shall be protected against corrosion. The type of corrosion protection will be specific to the valve material, the working environment of the valve as well as the type of fluid passing through or in contact with the valve.

Non-stainless-steel valves used in cooling water systems containing raw water shall be lined internally unless otherwise specified by Eskom. (The type of lining is contract specific and will be specified during the tender stage.)

Corrosion Protection shall conform to 240-101712128 Specification for the Internal Corrosion Protection of Water Systems, Chemical Tanks and Vessels and Associated Piping with Linings.

5.10 testing of valves

All testing must be done in accordance with the applicable valve design code (health and safety standard), certificates will be in compliance with requirements of EN10204 relevant certification. Eskom requires that the following test be carried out as a minimum, as stipulated in Standard for Low Pressure Valves (Unique Identifier: 240-105020315):

- Pressure Test.
- Fire Test.
- Hazardous application.
- Body Test.
- Seal Test.
- Testing of Elastomers.

5.11 packaging, transport and delivery

The safe, undamaged delivery of the valves is the responsibility of the supplier or the contractors responsible for the installation of the valves.

All valve components, especially the valve stem shall be securely packed with the correct packaging to prevent damage in transit. The gate, butterfly and globe valves shall be in the closed position for transportation, whereas ball and plug valves shall be in the open position. Any actuated valves shall be transported in the failsafe position. Electric actuators

shall not be attached to the valves during transportation; the contractor will however be required to witness the final assembly on site.

The ends of the valves (flanged, socket welded, threaded, butt welded) shall be blanked off with the appropriate rigid materials to prevent damage to the valve trim and prevent foreign materials from entering the internals of the valves. The blanked off ends will remain blanked off until final installation. Before dispatch, flange faces of non-coated valves shall be coated with heavy grease or other suitable corrosion preventative.

All valves will be inspected upon delivery and any valve that maybe damaged or that does not comply with the stipulation of this standard will be rejected. If a damaged valve is delivered, it is the responsibility of the contractor or supplier to replace/correct the valve deficiencies, at the contractors own cost; this might entail replacement of damaged valves with an undamaged valve according to the original valve specification.

5.12 general technical requirements

For all general technical requirements for low pressure valves refer to Standard for Low Pressure Valves (Unique Identifier: 240-105020315). The general technical requirements covered in the above-mentioned standard includes:

- Seals
- Indicators
- Materials
- Flanges
- Bolts, studs, nuts, washers, and threads
- Markings
- Locks
- Valve closing direction
- Handwheel

Lethabo Quality Control Inspectors

- Quality control inspections will be conducted on behalf of Eskom by a quality inspector from Maintenance Support Services Section. The quality inspector must be authorised by the Power Station Maintenance Manager in terms of LMA10002. The inspections will be carried out to provide an assessment of conformance to specification and quality requirements. These inspections do not take any responsibility away from the supervisor or artisan performing the work.
- The quality inspector's responsibilities include the following:
 - Reviewing maintenance procedures and work instructions and indicating witness and hold points.

- Verifying that specified quality requirements have been achieved by inspecting work in progress and indicating acceptance on the quality control plan.
- Ensuring that quality control plans conform to the requirements of Lethabo Power Station and that these quality control plans are completed for all valves overhauled. The quality control plan must be made available by the *Employer's* Representative prior to commencement of work for review.
- Ensuring that acceptable maintenance practice and all relevant codes, standards

Document No.	Rev.	Title	Applicable Yes/No
LBA 00030	2	Safety with which contractors are to conform at Lethabo Power Station	Y
LBA 00040	2	Lethabo Environmental Policy	Y
LBA 00049	1	Procedure for Commissioning of New/Modified Plant	N
LBA 00054	3	Hazardous waste storage and removal procedure	Y
LBA 00067	4	Safety Supervision for Contractors working for Lethabo Power Station	N
LBA 00085	3	Master Permit to Work for declared major outages	Y
LBT 00017	1	Limited Access Register Procedure	N
Eskom GGR0992		Plant Safety Regulations for Lethabo Power Station	Y
ESKASAAU7	0	Quality Requirements for the Procurement of Assets, Goods and Services	Y
LBA 00060	2	Change Management Procedure	N
LBA000135	0	Control& Prevention of asbestos exposure at Lethabo	Y
PS053	0	Intellectual Property	N
LMT 00001	1	Quality Control process for the Maintenance department	Y
LMA 10403	1	Welding, flame cutting and soldering	Y
LOTNA 6001	1	Pressure testing of the boiler HP section as per statutory regulations	Y
LOTNE 6001		Pressure testing of the boiler re-heater section as per statutory regulations	Y
LMT 10405	0	Hydraulic Pressure Testing of the boiler re-heaters	Y
LMT 10404	0	Hydraulic Pressure Testing of the boiler	Y
BS111 3		Boiler Design Code	Y
LBA 00099	0	Reverse Engineering Procedure	Y

and statutory requirements are adhered to.

- The quality inspector has the authority to stop work where an inadequacy threatens the safety of plant or personnel. It is the responsibility of the person performing the activity to inform the quality inspector prior to reaching a witness or hold point. In the case of a major outage the quality inspector must be informed at least one day in advance.

Drawings

None

Specifications

Constraints on how the *Contractor* Provides the Works

4.1 Use of standard forms

The *Contractor* shall use the following standard form and all the forms shall be requested from the *Employer* when needed:

- DCC 333 - *Employer's* Assessment
- DCC 367 – Event Register
- DCC 368 – Completion Certificate
- DCC 370 – Access Certificate
- DCC 371 – Notification of Defect
- LFM 1007 – Quality Control for *Contractor*

4.2 Invoicing and payment

In terms of core clause 50 the *Contractor* assesses the amount due and applies to the *Employer* for payment. The *Contractor* applies for payment with a tax invoice addressed to the *Employer* as follows:

The *Contractor* includes the following information on each tax invoice:

- 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).

The *Contractor* attaches the detail assessment of the amount due to each tax invoice showing the Price for Work Done to Date for each item in the Price List for work which he/she has completed.

4.4 Records of Defined Cost

- In order to substantiate the Defined Cost of compensation events, the *Employer* may require the *Contractor* to keep records of amounts paid by him for people employed by the *Contractor*, Plant and Materials, work subcontracted by the *Contractor* and Equipment. [See clause 11.2(5) and 63.2].
- The *Contractor* shall keep all the original invoice and these invoice shall be supplied to the *Employer* shall the need arise.

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

- Refer to conditions of tendering.

4.6 BBBEE and preferencing scheme

- Refer to conditions of tendering.

4.7 Others

N/A

5. Requirements for the programme & Planning

- The Employer will provide an outage programme to the Contractor for planning and implementation purposes, but it must be noted that the dates provided are subjected to change at any time.
- The Contractor shall submit a program, compiled in Microsoft Project or Primavera, which will provide details of the list of activities and the duration of each activity.
- A list of activities and duration of each shall be made available after an instruction to commence work is supplied to the Contractor by the Employer's Representative.
- All activities and requirements for interfaces between the Contractor and Employer shall be listed in the program. The program will be updated weekly and will be used to manage all installation activities. The *Contractor* is to provide a detailed report, within twenty-one (21) days, on any completed project work.

Procurement strategy

1.1 Task Order process (Option A2 only)

- The *Employers'* Representative, or his delegate, issues a unique Task Order for General Service and Overhaul of Auxiliary and Secondary Cooling Water Valves on unit 1-6 during outages services required.

1.2 Intentions of the *Employer* before Completion

- The *Employer* reserves the right to carry out any checks, on quantities and categories of the personnel supplied per Task Order.
- The *Employer* reserves the right to carry out any checks, or conduct any physical inspections or tests, on the service provided.

1.3 Particulars to be included on the *Supplier's* Tax Invoice

- The *Employers'* Contract number
- The *Employers'* Task Order number
- The *Suppliers'* VAT number
- Duration and description of the Task for which the services were rendered
- Quantities and categories of expenses per Task Order

2 Material provided by the *Employer* for the services.

- The Supplier is responsible for time keeping of the personnel on Site and supplies the original to the *Employer* on completion of the Task Order.
- The Supplier is responsible for keeping record of the quantities of Equipment and consumables on Site and supplies the original to the *Employer* on completion of the Task Order.
- Any material provided by the *Employer* is restricted to copying as required for the purpose of providing the Services.

3 Access provided by the *Employer* to a person, service, facility place or thing, including restrictions if any

3.1 Services and equipment supplied by the *Employer*

- Under no circumstances is the *Supplier* or his employees allowed to connect to any piped services or electrical supply without the permission of the *Employer*.

3.1.1 Supply of Electricity

- 220V, 30A and 380V, 60A power supplies are available. All installations or equipment connected to a supply of electricity provided free of charge by the *Employer* must comply with all relevant safety regulations and requirements. Failure to comply with the safety requirements may lead to immediate disconnection.
- No guarantees of power supply quality are given and power supply breaks of some duration may occur without warning and it shall not be grounds for additional time or compensation.

3.1.2 Water

- The *Employer* makes available free of charge, potable water as required for the purpose of this Contract.

3.1.3 Roads

- All traffic is limited to using existing roads.
- The *Employer* recovers any costs from the *Supplier* that is incurred from damage caused to underground services, structures, etc., as a result of the *Supplier* not using the prescribed routes.

3.1.4 First Aid Centre

- Incidents and accidents must be reported and to the *Employer* within 24 hours.
- First aid must be made available by the *Supplier*. Alternatively use can be made of the Lethabo medical centre at a fee. The availability of the *Supplier's* own first aid does not relieve the *Supplier* of his obligation to report and investigate the incident.
- Any incident or accident is at the *Supplier's* cost, if reasonable skill and care has not been taken by the *Supplier*.

3.1.5 Telecommunications

- The *Supplier* arranges with the *Employer* for the use of telecommunication services.

3.2 Plant & Materials

- **The *Employer* may at his own discretion supply any Plant and or Materials as required by the *Supplier* to Provide the Services.**

3.3 Services Provided by the *Supplier*

3.3.1 Electrical Equipment / Appliances, Lighting and Power

- Any electrical equipment or appliances supplied to Site must comply with all relevant safety regulations and requirements and be maintained in safe and proper working condition.

- The *Employer* has the right to stop the *Supplier's* use of any electrical equipment or appliance, which in the *Employer's* opinion does not conform to the foregoing.

3.3.2 Security

- The *Supplier* is responsible for security of all personnel tools and equipment on *Site*. This includes fencing off, night watch and access control if required.
- All these measures must be in accordance with any relevant regulations and standards and subject to the *Employer's* approval.

3.3.3 Accommodation and transportation of Employees

- The *Supplier* is responsible for the provision of accommodation or meals for all personnel on *Site*. The cost thereof to be included in his Price.
- The *Supplier* is responsible for the provision of transportation for all personnel to *Site*, from *Site* and on *Site*. The cost thereof to be included in his Price.

3.3.4 Offices, Workshops and Stores

- The *Supplier* provides, erect and maintain for his own use, **any additional office accommodation and stores he requires** for and Equipment Hire, together with drainage, lighting, heating, and hot and cold water services as required.
- The *Supplier* is also responsible for all security and access arrangements that he considers necessary for any additional office accommodation and stores he requires
- The *Supplier* provides at his own cost, all connection fittings, pipework, temporary plumbing, and pumps necessary to lead the water from the point of supply to the various points where it is required, maintain same and remove on *completion*. Such fittings must be compatible with the *Employer's* fittings so that galvanic corrosion of pipework is prevented.

3.3.5 Sanitary Facilities

- The *Employer* makes available to personnel, the reasonable use of sanitary facilities on *Site*.
- The *Supplier* provides service, maintain and remove on *completion* any additional facilities that are required.

C4 Site Information**4.1 Health, Safety and Environmental Requirements**

Requirements of OSHACT no.5 of 1993 must be adhered to at all times during the site installation work. Waste material should be disposed off using the Lethabo waste procedure. Construction and regulation requirements must be adhered to at all times. The installation contractor SHE coordinator must compile a SHE file that will be audited by Safety Risk Management before site work commences. Prior to commencement of site installation work, the contractor

- The *Supplier* and his subcontractors 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.

Occupational Health and Safety Act (Act of 1993-Section 37)

- The *Supplier* shall comply with:
 - a) The Occupational Health and Safety Act, 1993, and all Regulations made there under;
 - b) All Eskom Safety and Operating Procedures listed.
 - c) Lethabo site procedure LBA 00055 Rev 2.
- The *Supplier* 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 *Supplier* 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 *Supplier* 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:
- Eskom may, at any stage during the currency of this agreement, be entitled to:
 - a) do safety audits at the *Supplier's* premises, its work-places and on its employees;
 - b) refuse any employee, sub-contractor or agent of the *Supplier* access to its premises if such person has been 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;
 - c) issue the *Supplier* with a work stop order or a compliance order should Eskom become aware of any unsafe working procedure or conditions or any non-compliance with the Act, Regulations and Procedures referred to in the above by the *Supplier* or any of its employees, sub-contractors or agents.
- No extension of time will be allowed as a result of any action taken by Eskom in terms of the above and the *Supplier* shall have no claim against Eskom as a result thereof. Furthermore, no amendments to the Act or Regulations or reasonable amendment to Eskom's Safety and Operating Procedures will entitle the *Supplier* to claim any additional costs incurred in complying therewith from Eskom.

Safety 4..2 Local Safety Procedures

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

4.3 Incidents / Accidents

- Incidents and accidents must be reported and to the *Employer* within 24 hours.
- First aid must be made available by the *Supplier*. Alternatively use can be made of the Lethabo medical centre at a fee. The availability of the *Supplier's* own first aid does not relieve the *Supplier* of his obligation to report and investigate the incident.

4.4 Fire Prevention

- Fire prevention and protection requirements to which Contractors must comply, are detailed in LBA 00030.

4.5 Protective Equipment and Clothing

- The *Supplier* supplies his own personal protective equipment to personnel with logos on as necessary.
- The *Supplier* is also responsible to inspect and maintain such equipment as required in terms of the OHSACT and local procedures.

4.6 Inspection of Equipment

- The *Supplier's* equipment is inspected by an authorised Eskom employee on arrival at the 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 and any certificates that are required.

5. Requirements for the program

- The *Contractor* shall submit a program, compiled in Microsoft Project or similar program, which will provide details of the list of activities and the duration of each activity.
- A list of activities and duration of each shall be made available after an instruction to commence work is supplied to the *Contractor* by the *Employer's Representative*.
- All activities and requirements for interfaces between the *Contractor* and *Employer* shall be listed in the program.
- The program shall be updated weekly and will be used to manage all installation activities.
- The *Contractor* submits a bar chart program one week after award of the contract showing the following:
 - The early start and early completion date of each activity.

- The late start and late completion of each activity.
- Planned completion.
- The order and planning of operations which the *Contractor* plans to do in order to provide *the works*.
- The *Contractor* prepares and submits an update, seven days after the start date, showing actual progress and the effect upon the remainder of the activities to be completed.
-

5.1 Use of standard forms

The *Contractor* shall use the following standard form and all the forms shall be requested from the *Employer* when needed:

- DCC 333 - *Employer's* Assessment
- DCC 367 – Event Register
- DCC 368 – Completion Certificate
- DCC 370 – Access Certificate
- DCC 371 – Notification of Defect
- LFM 1007 – Quality Control for *Contractor*

5.2 Invoicing and payment

In terms of core clause 50 the *Contractor* assesses the amount due and applies to the *Employer* for payment. The *Contractor* applies for payment with a tax invoice addressed to the *Employer* as follows:

The *Contractor* includes the following information on each tax invoice:

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).

5.3 Records of Defined Cost

- In order to substantiate the Defined Cost of compensation events, the *Employer* may require the *Contractor* to keep records of amounts paid by him for people employed by the *Contractor*, Plant and Materials, work subcontracted by the *Contractor* and Equipment. [See clause 11.2(5) and 63.2].
- The *Contractor* shall keep all the original invoice and these invoice shall be supplied to the *Employer* shall the need arise.

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

- Refer to conditions of tendering.

7. BBBEE and preferencing scheme

- Refer to conditions of tendering.

8. Others

- The *Contractor* shall use one-way traffic method during construction.
- The 2 way radios and stop & go signs or robots shall be used.
- All road construction signs shall be in place.
- The work shall be conducted only during the day.
- No work shall be conducted during the rainy day, the attached weather forecast shall be used as base for planning.
- Regular auditing of the *Contractor's* SHE file and works by the *Employer* shall be conducted. Failure to comply shall result in work stoppage subsequently termination of contract.
- The *Contractor* shall provide the competent construction supervisor as per construction regulations.
- This supervisor shall have a minimum of a Civil Engineering National Diploma and a minimum three years roads experience.
The *Contractor* shall have the Snr. Civil Engineer with a four year degree and a minimum of three years roads experience. This Engineer shall inspect the works at least once a week and he/she shall be available to hold the meetings with the *Employer* if the need arise.

9. Standard Specifications

DOCUMENT No.	REV.	TITLE	ATTACHED
LBA 00030	2	Safety with which contractors are to conform at Lethabo Power Station	Y
LBA 00040	0	Lethabo Environmental Procedure	Y
LBA 00049	0	Procedure for Commissioning of New/Modified Plant	Y
LBA 00054	1	Hazardous waste storage and removal procedure	N
LBA 00067	0	Health, Safety and Environmental Specification for Contractors	Y
LBA 00085	1	Master Permit to Work for declared major outages	Y
LBA 00108	0	Contractor's site administration	N
LBT 00015	0	New or Modifications to Electrical Plant Requirements	N
LBT 00017	0	Limited Access Register Procedure	N
GGR0992		Plant Safety Regulations for Lethabo Power Station	N
LBA0060		Change Management Procedure	N
ESKASAAU 7	0	Quality Requirements for the Procurement of Assets, Goods and Services	N
LBA00135	0	Control & Prevention of asbestos exposure at Lethabo	N
PS053	1	Intellectual Property	N
LBA00172		The use and control of solvents and degreasers	N

10. NEMA Clauses

National Environmental Management Act (Act No.107 of 1998)

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 Supplier ensures that he complies with the Act when Providing the Services or using plant, materials or equipment.

10.1 Permit to Work System

- 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 OPR 3305.
- 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 Project 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.

10.2 Safety Induction Course

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

10.3 IBI Awareness Techniques

- "To prevent incidents and ensure continuous improvement of Lethabo Power Stations business performance in all areas affecting safety, reliability and production, it is expected of all CONTRACTORS service personnel, to attend a three(3) hour training session on Integrated Business Improvement Awareness, which has to be done as soon as work has commenced;
This is to ensure familiarisation and use of error-prevention tools/techniques inclusive of, Pre and Post-job briefs, Risk Assessments, Self-checks (STAR principle), Job observations, Effective communications e.g.3- way, Questioning attitude, Procedural adherence, Hand overs and other related topics.
- A monthly IBI scorecard to be completed indicating the use of error prevention tools/ techniques;
The assigned employee fulfilling the role of IBI representative has to attend the IBI representative's forum fortnightly, on Tuesdays, duration one hour.

- An IBI representative appointed by the Contractor/Supplier/Consultant to attend the IBI Representative Forum One (1) hour every Tuesday (forth nightly).
- IBI Awareness training will be provided by Lethabo Power Station personnel, free of charge, course bookings can be arranged by contacting Rabie Heymans on extension 5094".

10.4 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. NO passengers may be transported on the back of a light delivery vehicle (LDV) whether open or closed.
- Tools and equipment must be properly secured.
- Only authorised drivers may transport passengers.
- Proof must be submitted on request in terms of valid roadworthiness of the Vehicle/s.
- The above must apply to on site and off site transportation of passengers.

10.5 Eskom Life Saving Rules:

Five Life Saving Rules have been developed that will apply to all Eskom employees, agents, consultants and contractors.

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 limitations exists, no person shall work without the required permit to work.

10.6 Local Safety Procedures

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

10.7 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.

10.8 Fire Prevention

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

10.9 Protective Equipment and Clothing

- The *Contractor* supplies his own personal protective equipment to personnel as necessary to carry out the works and the Contractor shall ensure that all overalls for his staff have clearly identifying company Logo's. Cost to be stipulated in the Price List – health and Safety Cost.
- The *Contractor* is also responsible to inspect and maintain such equipment as required in terms of the OHSACT and local procedures.

10.10 Inspection of Equipment

- The *Contractor's* equipment is inspected by an authorized 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 of operators must comply with the Works Information and statutory requirements.

10.11 Documentation

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

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

11 Environmental Policy and Waste Handling

Lethabo Environmental Policy LBPS010 must be adhered to.

11.1 Disposal of Waste

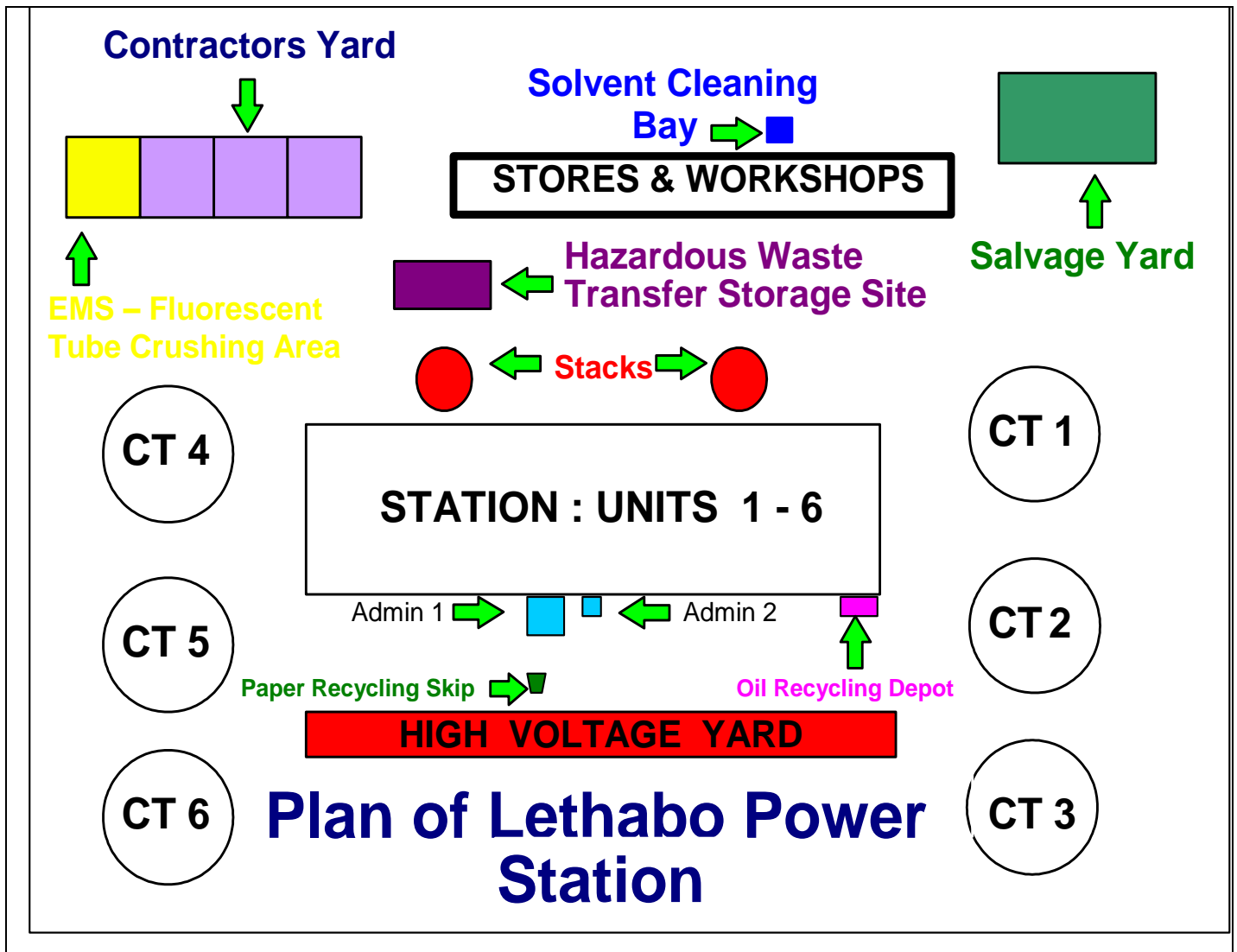
Waste shall be removed promptly to the designated deposit areas. No stockpiling will be permitted.

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

Accommodation of Employees

- The *Contractor* is responsible for the provision of accommodation or meals of his own personnel, and the cost thereof to be included in his *Price*.
- The *Contractor* is responsible for the provision of transportation for all Personnel to site, from site and on Site.

Location



11.2 Access

- The *Employer* provides access to the *Suppliers'* personnel and equipment.
- If the *Employer* can not provide access, then the *Supplier* makes his own assessment of, and allows in his rates for those access problems due to confined and restricted areas, existing structures and equipment, etc., which may be encountered.
- No extra payment or claim of any kind will be allowed on account of difficulties of access for the requirements of working adjacent to or in the same area as other *Suppliers* operations.

11.3 Access to and Departure from the Site

- The *Supplier* allows in his price and program for delays at the security gate.
- The *Employer* reserves the right for its Security personnel to search persons or vehicles entering or leaving the premises.
- This includes briefcases and toolboxes.

11.4 Equipment or Material Access and Removal

- The *Supplier* ensures that all equipment and materials brought through the security gate is signed in at the main security gate on an OV18 form.
- If the equipment or material is to be removed the same day 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 needs to be obtained from the *Employer*.
- The *Supplier* is not allowed to remove any equipment or materials from site without producing the relevant OV18 forms or the equipment lists

11.5 Access for and Interface with other Contractors

- The *Employer* provides access for, and interface with, other *Suppliers* to the *Suppliers'* personnel and equipment
- If the *Employer* cannot provide access and interface, then the *Supplier* makes his own assessment of the problems and difficulties which may be encountered
- No extra payment or claim of any kind will be allowed on account of providing reasonable access to, and interfacing with others.

11.6 Materials delivered to the *Employer* by the *Supplier* as part of Providing the Services.

- Before access is given to the Site, the *Supplier* is to provide a list of all equipment as supplied by the *Supplier*.

11.7 Restrictions on the use of materials provided by the *Supplier*.

- Any Material provided by the *Supplier* is restricted to use and copying as required for of this Contract only.

11.8 Form of the programme and procedure for submitting and revising it

- The *Supplier* is to provide the *Employer* on completion of the Task Order a report in the form of a database or manually.

11.9 Drawings

- The *Employer* supply to the *Supplier* on request, any drawings that may be required to provide the Services.

11.10 Site Information

The Site is at Lethabo Power Station situated \pm 18 km South of Vereeniging on the Viljoensdrif - Deneyville Road, Free State. Access to the site will by via the main security gate only. The *Employer* informs the *Supplier* of the access procedures, and it should be expected that such procedures may change depending on the prevailing security situation.

Section 1: Specific Goals

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

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

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

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

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

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

Section 2: Objective criteria

2.1. Designated Sectors

When applicable the following stipulated minimum threshold for Local Production and Content must be achieved in full by the tenderer

a) Is this Commodity or part of it a Designated Sector?

YES	NO
X	

Please indicate below Designated Components

Commodity	Components	Local Content Threshold
Joining/connecting components	Gussets, cleats, stiffeners, splices, cranks, kinks, doglegs, spacers, tabs, brackets	100%

NOTE 1: Tender Returnable:

- a) The Declaration Certificate for Local Production and Content (SBD 6.2)
- b) Annexure C (Local Content Declaration: Summary Schedule)
- c) Annexure D (Imported Content Declaration – supporting Schedule to Annexure C)
- d) Annexure E (Local content Declaration – supporting Schedule to Annexure C)

NOTE 2: Application for exemptions:

If the required input materials cannot be wholly sourced from South Africa, bidders should request and obtain a written exemption letter from the DTIC. The exemption letter should then be submitted, and approvals obtained prior to the closure of the bid(s). The DTIC together with the procuring organ of state and the winning bidder will consider the exemption on a case-by-case basis.

The above MUST be completed, duly signed, and submitted by the bidder.

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

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

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

3.1. Transformation – BBBEE Improvement or Retention Plan

Transformation remains an area of focus, where Eskom continuously strives to align itself with national transformation imperatives to unlock growth, drive industrialization, create employment and contribute to skills development.

Eskom encourages its suppliers to constantly strive to improve their B-BBEE rating. Whereas Tenderer/s will be allocated points in terms of a preference point system based on specific goals, Eskom also requests that tenderer/s submits their B-BBEE improvement or retention plan within 30 days of signing the contract. Tenderer/s are therefore requested to indicate the extent to which they will maintain (only if the respondent is a Level 1) or may

improve/maintain their B-BBEE status over the contract period if their B-BBEE status is level 2 or 3. Tenderer/s with a B-BBEE status level 4 at the time of contract award, shall migrate and achieve as a non-negotiable a milestone of B-BBEE Level 3 by the end of the first year of the contract and thereafter improve their B-BBEE status level or migrate by one level higher.

Tenderer/s with a B-BBEE recognition status of Level 5 to Level 8 or non-compliant at the time of contract award, shall migrate and achieve as a non-negotiable a milestone of Level 4 by the end of the first year of the contract and thereafter improve at least one B-BBEE Level higher of each year from the second year of the contract. Tenderer/s are requested to submit their B-BBEE Improvement Plan as an essential document within 30 days of signing the contract.

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

3.2. Local Procurement Content

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

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

Local Procurement Content	Eskom target	Tenderer Proposal
	100%	

3.3. Procurement spends on entities with a minimum 51% black ownership

The tenderer will subcontract some of the SOW to the designated suppliers i.e., EME / QSE with at least 51% BO. The designated suppliers should not be part of their subsidiaries or having shares in that company,

they should
from local
shall be as

Procurement Designated Group	from	Eskom Target	Tenderer Proposal
Black Owned		15%	

preferable
be selected
to site and
follows:

Potential scope

- Employees transportation
- Accommodation.
- PPE Supplier and printing.
- Plant hire (Folk lifts, rigging equipment)
- Components transportation
- Medicals

The following are tender returnable.

- Proof of a sub-contract agreement/s
OR
- Letter of intent

3.4. Jobs. Tenderers are required to submit proposals for the type and number of jobs that will be created and retained in South Africa as a direct result of being awarded a contract.

Type of Jobs to be created	Number of Jobs to be created

Type of Jobs to be retained	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%	

3.5. Skills development

Tenderers are required to submit proposals in a table below for developing the skills of unemployed candidates in the country. Skills development is intended to address Eskom's core, scarce and critical skills and the scarce and critical skills. These skills are also included in a 2020 list of occupations in high demand as stipulated in the Government Gazette 43937. Candidates shall be from all provinces in the country, and their composition shall be representative of the population demographics of South Africa

Skill type / Occupation	Eskom target	Entry Level	Output	Tenderers Proposal
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Mechanical fitter	3	N3/Grade 12 or Equivalent	Trade Test	
Rigger	3	N3/Grade 12 or Equivalent	Trade Test	
Mechanical Technician	2	S4	P1/P2	

The process of developing these skills shall involve the participation by tenderers directly and through their supply network. In certain cases, the SETA's accredited training providers can be approached to participate in developing critical and scarce skills.

Note: That these targets for skills development candidates categorically exclude Eskom employees and registered learners. The tenderers are required to take full responsibility for the total cost of developing the requisite skills, and Eskom shall not make any financial contribution towards the fulfilment of this obligation. Tenderers also are advised to approach their relevant SETAs to access grants, subsidies, and incentives as well as South African Revenue Services for tax rebates that are earmarked for skills development initiatives.

Section 4: SDL&I Penalty and Performance Security

Eskom will apply a penalty of 2.5% of the invoice amount for failure to meet SDL&I obligations.

Eskom will apply a penalty of 2.5% of the Contract Value for failure to meet SDL&I obligations.

For the duration of the contract, Eskom will retain 2.5% of every invoice (excluding VAT) as security for the fulfilment of all SDL&I Obligations. The retained amounts shall only be released to the Contractor upon:

- Eskom receives the SDL&I progress report/s from the contractor.
- Fulfilment of all SDL&I obligations by the contractor.
- Submission of an approved compliance report by SDL&I Department.

Section 5: Reporting and Monitoring

The suppliers shall on a quarterly basis submit a report to Eskom in accordance with Data Collection Template on their compliance with the SDL&I obligations described above.

Eskom shall review the SDL&I reports submitted by the suppliers within 30 (thirty) days of receipt of the reports and notify the suppliers in writing if their SDL&I obligations have not been met.

Upon notification by Eskom that the suppliers have not met their SDL&I obligations, the suppliers shall be required to implement corrective measures to meet those SDL&I obligations before the commencement of the following report, failing which Retention clauses shall be invoked.

Every contract shall be accompanied by the SDL&I Implementation Schedule, which must be completed

by the suppliers and returned to SDL&I representative for acceptance 28 days after contract award. This will be used as a reference document for monitoring, measuring and reporting on the supplier's progress in delivering on their stated SDL&I commitments

Section 6: General Information on Validity of Sworn Affidavits

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

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

Name/s of deponent as they appear in the identity document and the identity number.

Designation of the deponent as the **director**, **owner** or **member** must be indicated in order to know that person is duly authorised to depose of an affidavit. **(Mark the applicable option)**.

Name of enterprise as per enterprise registration documents issued by the CIPC, where applicable, and enterprise business address.

Percentage of black ownership, black female ownership and designated group. In the case of specialised enterprises as per Statement 004, the percentage of black beneficiaries must be reflected. **(No blank spaces to be left)**.

Indicate total revenue for the year under review and whether it is based on **audited financial statements** or **management account**. **(Mark the applicable option)**.

Financial year end as per the **enterprise's registration documents**, which was used to determine the total revenue. **(Financial year end to be stipulated by day/month/year)**.

B-BBEE Status level. An enterprise can only have one status level. **(Tick applicable level)**

Empowering supplier status must be indicated. For QSEs, the deponent must select the basis for the empowering supplier status.

Date deponent signed and date of Commissioner of Oath must be the same. **(The sworn affidavit must be signed in the presence of the Commissioner of Oath. Furthermore the Commissioner must also sign and stamp)**

Commissioner of Oath cannot be an employee or ex officio of the enterprise because, a person cannot by law, commission a sworn affidavit in which they have an interest.