NEC3 Term Service Contract (TSC3)

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

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

for **The High-Pressure Water Cleaning of Turbine Plant Heat Exchangers on Units 2, 4, 5 ,6 ,7, & 10 which includes: The Main Condenser, Generator Hydrogen Coolers, Seal Oil Coolers, Turbine Oil Coolers, Steam Feed Pump Oil Coolers and Stator Coolant Coolers on each Unit (as and when required) for period of 3 years**

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

PART C1: AGREEMENTS & CONTRACT DATA

Contents:

C1.1 Form of Offer & Acceptance

Offer

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

The High-Pressure Water Cleaning of Turbine Plant Heat Exchangers on Units 2, 4, 5, 6, 7 & 10 which includes: The Main Condenser, Generator Hydrogen Coolers, Seal Oil Coolers, Turbine Oil Coolers, Steam Feed Pump Oil Coolers and Stator Coolant Coolers on each Unit (as and when required) for period of 3 years

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

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

Options A or C	The offered total of the Prices exclusive of VAT is	**R**
Option E	The first forecast of the total Defined Cost plus the Fee exclusive of VAT is	**R**
	Sub total	**R**
	Value Added Tax @ 15% is	**R**
	The offered total of the amount due inclusive of VAT is[1]	**R**
	(in words)	

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

Signature(s) .....

Name(s) .....

Capacity .....

[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*.

For the tenderer:

.....

(Insert name and address of organisation)

Name & signature of witness

Date

Tenderer's CIDB registration number:

Acceptance

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

The terms of the contract, are contained in:

Part 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) .....

Capacity .....

for the Employer .....

(Insert name and address of organisation)

Name & signature of witness .....

Date .....

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

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

Note:

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

No.	Subject	Details
1		
2		
3		
4		
5		
6		
7		

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

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

	For the tenderer:	**For the Employer**
Signature	.....	.....
Name	.....	.....
Capacity	.....	.....
On behalf of	..... *(Insert name and address of organisation)*	..... *(Insert name and address of organisation)*
Name & signature of witness	.....	.....

Date .....

C1.2 TSC3 Contract Data

Part one - Data provided by the *Employer*

Clause	Statement	Data
1	**General**	
	The *conditions of contract* are the core clauses and the clauses for main Option:	
		A: Priced contract with price list
	dispute resolution Option	**W1: Dispute resolution procedure**
	and secondary Options	
		X1: Price adjustment for inflation
		X2 Changes in the law
		X19: Task Order
		X20: Key performance indicators
		Z: *Additional conditions of contract*
	of the NEC3 Term Service Contract (June 2005)[2]	
10.1	The *Employer* 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.	**013 296 3720**
	Fax No.	**086 605 7367**
10.1	The *Service Manager* is (name):	**Vutivi Shivambu**

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

	Address	**Hendrina Power Station** **Private bag X1003** **Pullenshope** **1096**
	Tel	**013 296 3720**
	Fax	**086 605 7367**
	e-mail	**mkhabevl@eskom.co.za**
11.2(2)	The Affected Property is	**Hendrina power station units 2, 4, 5 ,6 ,7 & 10**
11.2(13)	The *service* is	**The High-Pressure Water Cleaning of Turbine Plant Heat Exchangers on Units 2, 4, 5, 6, 7 &10 which includes: The Main Condenser, Generator Hydrogen Coolers, Seal Oil Coolers, Turbine Oil Coolers, Steam Feed Pump Oil Coolers and Stator Coolant Coolers on each Unit**
11.2(14)	The following matters will be included in the Risk Register	**Working in confined spaces** **High Pressure Water Jetting**
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 *law of the contract* is the law of	**the Republic of South Africa**
13.1	The *language of this contract* is	**English**
13.3	The *period for reply* is	**12 hours**
2	**The *Contractor*'s main responsibilities**	
21.1	The *Contractor* submits a first plan for acceptance within	**One week of the Contract Starting Date to be assess and accepted by the *Employer***
3	**Time**	
30.1	The *starting date* is.	**TBC**
30.1	The *service period* is	**36 months**
4	**Testing and defects**	**No data is required for this section of the *conditions of contract*.**
5	**Payment**	
50.1	The *assessment interval* is	**On completion of each task order**
51.1	The *currency of this contract* is the	**South African Rand**

51.2	The period within which payments are made is	**4 weeks.**
51.4	The *interest rate* is	**(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**	
	These are additional compensation events:	**As per clause 60.1 in the TSC**
7	**Use of Equipment Plant and Materials**	**The *Employer* will provider water & electricity supplier.** **The *Contractor* provides everything required to complete the service**
8	**Risks and insurance**	**Not applicable**
80.1	These are additional *Employer*'s risks	**1.** **2.** **3.**
83.1	The *Employer* 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 *Employer* 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 *Contractor* to the *Employer*'s 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 *Employer* 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 *Employer*'s property, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) arising from or in connection with the *Contractor*'s Providing the Service for any one event is:	**whatever the *Contractor* deems necessary in addition to that provided by the *Employer*.**
83.1	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is:	**As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the *Contractor's* common law liability for people falling outside the scope of the Act with a limit of Indemnity of not less than R500 000 (Five hundred thousand Rands)..**
9	**Termination**	**There is no Contract Data required for this section of the *conditions of contract*.**
10	**Data for main Option clause**	
A	**Priced contract with price list**	
20.5	The *Contractor* prepares forecasts of the final total of the Prices for the whole of the *service* at intervals no longer than	**4 weeks.**
11	**Data for Option W1**	
W1.1	The *Adjudicator* is (Name) Address	**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.**

	Tel No.	
	Fax No.	
	e-mail	
W1.2(3)	The *Adjudicator nominating body* 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 *tribunal* is:	**arbitration**
W1.4(5)	The *arbitration procedure* is	**the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.**
	The place where arbitration is to be held is	**Middelburg (MP) 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 *base date* for indices is	**Not applicable**
	The proportions used to calculate the Price Adjustment Factor are:	**Not applicable**
X2	**Changes in the law**	**No data is required for this Option**
X19	**Task Order**	
X19.5	The *Contractor* submits a Task Order programme to the *Service Manager* within	**6 hours of receiving the Task Order**
X20	**Key Performance Indicators**	**See appendix 2**
X20.1	The *incentive schedule* for Key Performance Indicators is in	**Not applicable**
X20.2	A report of performance against each Key Performance Indicator is provided at intervals of	**6 months**
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

C1.2 Contract Data

Part two - Data provided by the *Contractor*

Clause	Statement	Data
10.1	The *Contractor* is (Name): Address Tel No. Fax No.	
11.2(8)	The *direct fee percentage* is The *subcontracted fee percentage* is	**%** **%**
11.2(14)	The following matters will be included in the Risk Register	
11.2(15)	The Service Information for the *Contractor*'s 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: Experience:	**CV's (and further key person's data including CVs) are in .**
A	**Priced contract with price list**	

11.2(12)	The *price list* is in	
11.2(19)	The tendered total of the Prices is	**R**

Part 2: Pricing Data

TSC3 Option A

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option A	2
C2.2	The *price list*	3

C2.1 Pricing assumptions: Option A

The *conditions of contract*

How work is priced and assessed for payment

Clause 11 in NEC3 Term Service Contract, June 2005 (TSC3) core clauses and Option A states:

Identified and defined terms 11 11.2 (12) The Price List is the *price list* unless later changed in accordance with this contract.

(17) The Price for Services Provided to Date is the total of

- the Price for each lump sum item in the Price List which the *Contractor* has completed and
- where a quantity is stated for an item in the Price List, an amount calculated by multiplying the quantity which the *Contractor* has completed by the rate.

(19) The Prices are the amounts stated in the Price column of the Price List. Where a quantity is stated for an item in the Price List, the Price is calculated by multiplying the quantity by the rate.

This confirms that Option A is a priced contract where the Prices are derived from a list of items of service which can be priced as lump sums or as expected quantities of service multiplied by a rate or a mix of both.

Function of the Price List

Clause 54.1 in Option A states: “Information in the Price List is not Service Information”. This confirms that instructions to do work or how it is to be done are not included in the Price List but in the Service Information. This is further confirmed by Clause 20.1 which states, “The *Contractor* Provides the Service in accordance with the Service Information”. Hence the *Contractor* does **not** Provide the Service in accordance with the Price List. The Price List is only a pricing document.

Link to the *Contractor*’s plan

Clause 21.4 states “The *Contractor* provides information which shows how each item description on the Price List relates to the operations on each plan which he submits for acceptance”. Hence when compiling the *price list*, the tendering contractor needs to develop his first clause 21.2 plan in such a way that operations shown on it can be priced in the *price list* and result in a satisfactory cash flow in terms of clause 11.2(17).

Preparing the *price list*

It will be assumed that the tendering contractor has read Pages 14, 15 and 73 of the TSC3 Guidance Notes before preparing the *price list*. Items in the *price list* may have been inserted by the *Employer* and

the tendering contractor should insert any additional items which he considers necessary. Whichever party provides the items in the *price list* the total of the Prices is assumed to be fully inclusive of everything necessary to Provide the Service as described at the time of entering into this contract.

1 As the *Contractor* has an obligation to correct Defects (core clause 42.1) and there is no compensation event for this unless the Defect was due to an ***Employer's*** risk, the lump sum Prices and rates must also include for the correction of Defects.

2 If the *Contractor* has decided not to identify a particular item in the *price list* at the time of tender the cost to the *Contractor* of doing the work must be included in, or spread across, the other Prices and rates in the *price list* in order to fulfil the obligation to complete the *service* for the tendered total of the Prices.

3 There is no adjustment to lump sum prices in the *price list* if the amount, or quantity, of work within that lump sum item of service later turns out to be different to that which the *Contractor* estimated at time of tender. The only basis for a change to the Prices is as a result of a compensation event. See Clause 60.1.

4 Hence the Prices and rates tendered by the *Contractor* in the *price list* are inclusive of everything necessary and incidental to Providing the Service in accordance with the Service Information, as it was at the time of tender, as well as correct any Defects not caused by an ***Employer's*** risk.

5 The Contractor does not have to allow in his Prices and rates for matters that may arise as a result of a compensation event. It should be noted that the list of compensation events includes those arising as a result of an *Employer's* risk event listed in core clause 80.1.

Format of the *price list*

(From page 73 of the TSC3 Guidance Notes)

Entries in the first four columns in the *price list* in section C2.2 are made either by the *Employer* or the tendering contractor.

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

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

If the *Contractor* is to be paid a Price for an item proportional to the length of time for which a service is provided, a unit of time is stated in the Unit column and the expected length of time (as a quantity of the stated units of time) is stated in the Expected Quantity column.

C2.2 the *price list*

HP Cleaning of Heat exchangers (Condenser & Coolers)					
Item no.	**Description**	**Unit**	**Estimated Quantities**	**Rate**	**Price**
1	HP Jetting of Condenser tubes (16440 tubes 1 per Unit)	EA	30		
2	HP Jetting of Generator Hydrogen Coolers (53 tubes 4 per Unit)	EA	120		
3	HP Jetting of Generator Seal Oil Cooler (86 tubes 2 per Unit)	EA	60		
4	HP Jetting of Stator Coolant Coolers (196 tubes 3 per Unit)	EA	90		
5	HP Jetting of Turbine Oil Coolers (1572 tubes 2 per unit)	EA	60		
6	Steam Feed Pumps Oil Coolers (182 Tubes 2 per Unit)	EA	60		
The total of the Prices (Excluding VAT & CPA):					

…… Print Name	…….. Signature	…….. Date

PART 3: SCOPE OF WORK

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

C3.1 EMPLOYER'S SERVICE INFORMATION

C3.1 Service Information

The High-Pressure Water Jetting of Turbine Plant Heat Exchangers; Units 2, 4, 5, 6, 7 and 10 at Hendrina Power Station, which includes: The Main Turbine Condenser, Generator Hydrogen Coolers, Generator Seal Oil Coolers, Generator Stator Coolant Coolers, Turbine Bearing Oil Coolers and Steam Feed Pump Bearing Oil Coolers at each Unit.

1.1. Description of the *Works*

The Contractor shall only be paid in proportion to the number of tubes cleaned within the allocated time period, i.e., if only 80% of the total number of tubes were cleaned then only 80% of total contract value shall apply.

1.2. Executive Overview

The *works* provides the specific requirements regarding the methodology, quality, and safety aspects to be considered when executing high pressure water jetting on condenser and turbine plant heat exchanger tubing at Eskom's Hendrina Power Station. These requirements are applicable to all the wet cooled shell-and-tube heat exchangers using raw cooling water as a cooling medium, and where tubing inner diameters are greater than 15mm.

At Hendrina power station, heat exchanger vessels located on the turbine plant (i.e., the main condenser & coolers) are subjected to sub-standard and aggressive cooling water, which over time has led to excessive mineral deposition, fouling, and scaling of the heat exchanger tubes, tube-sheets, and water-boxes. The scale composition in the turbine main condenser and coolers has been identified as predominantly calcium carbonate, magnesium, and silica.

The *scope of work* details the High-Pressure Water Jetting (HPWJ) cleaning requirements on the main turbine condensers, the main turbine bearing oil coolers, the generator seal oil coolers, the generator stator coolant coolers, the generator hydrogen coolers and the steam feed pump bearing oil coolers in the turbine plant at Units 1 to 10 in order to remove extensive scaling/mineral deposition from the inner surface of tubes, the tube-sheets, and the water-boxes.

The *Contractor* shall provide all services, equipment, and resources to fulfil the requirements of the *scope of work* in order to achieve the *Employers* objective of the *works*. The *Contractor* must also ensure that the *works* provided is completely suitable for the intended purpose as described throughout this document. Lastly, the *Contractor* is to ensure that the *works* adheres to the *Employer's* specifications, guidelines, and operational standards.

The *works* is applicable to the following heat exchangers:

1. One (1) main turbine condenser per unit.
2. Four (4) generator hydrogen coolers per unit.
3. Two (2) generator seal oil coolers per unit.
4. Two (2) turbine bearing oil coolers per unit.
5. Two (2) steam feed pump oil coolers per unit.
6. Three (3) generator stator coolant coolers.

1.3. Abbreviations

Abbreviation	Meaning Given to the Abbreviation
HPWJ	High Pressure Water Jetting
SOW	Scope of Work
CW	Cooling Water
TETM	Technical evaluation team member
QCP	Quality Control Plan
RT&D	Research, Testing and Development
TET	Technical Evaluation Team
ID	Inner Diameter
ITP	Inspection and Test Plan
mm	Millimetre
NDE	Non-destructive examination
SFP	Steam Feed Pump

1.4. Definitions

1.4.1. Blocked Tube:

Passage of air through the tube is not possible and the tube cannot be successfully cleared by rodding.

1.4.2. Fiberscope/Endoscope:

A device used to enable the visual inspection of the internal surfaces of condenser / heat exchanger tubes.

1.4.3. Fouling:

A term used to describe conditions in which the presence and accumulation of foreign materials interfere with, or compromise, the optimal functionality of a heat exchanger vessel. The term includes the accumulation and growth of organisms on a submerged metal surface and the accumulation of organic and inorganic deposits on heat exchanger tubing.

1.4.4. Heat Exchanger Cleaning Report:

A data book of collective documents containing all information on any cleaning activity conduced on a specific turbine plant heat exchanger.

1.4.5. Restricted Tube:

Passage of air through the tube is possible, but access to the entire length of the tube is not possible due to dents or solid debris blockages within the tube.

1.4.6. Scaling:

The deposition of microbial water-insoluble constituents on a metal surface which can largely affect the heat transfer effectiveness of heat exchanger vessels on the plant.

1.5. The *Employers* Objective and Purpose of the *Works*

The *Employers* objective with the *works* is to ensure that the highest levels of cleaning effectiveness is achieved, while ensuring that processes selected, planned, and performed are suitably controlled to minimise any possible consequential damages to heat exchanger vessels. The *Employers* objective with the *works* is to remove all scale deposits and accumulated minerals from the inner surfaces of condenser and coolers tubes by means of HPWJ. **The minimum acceptance criteria is** that all scale/mineral deposits must be removed from the internal surfaces of all the tubes that are to be cleaned, i.e. all internal tube surfaces must be completely cleaned to a uniform metallic colour with no traces of corrosion product or scale deposits to be found on the tube inner walls after the HPWJ cleaning process has been completed. This will be validated by means of a high-resolution endoscope cleanliness inspection and *Engineering* will perform this inspection in consultation with the *Contractor.*

The *works* is intended to restore the design heat transfer efficiency and cleanliness of the turbine plant heat exchanger vessels, while minimising detrimental risk to the vessel's components. **Note that non-achievement of the aforementioned acceptance criteria will be considered as non-performance with respect to the contract.**

1.6. General Safety Requirements:

The *Contractor* ensures compliance to the *Employer's* health and safety requirements:

1. HSPHO/058: "Safety, Health and Environmental Specifications for Principal Contractors"
2. 32-95: "Procedure for the Effective Management of the Safety, Health and Environmental Related Incidents"
3. HSPHO/059: "Emergency Response Procedure"

1.7. *Employer's* Requirements for the Service according to Scope

1.7.1. *Contractor* Experience

Only contractors experienced and specialised in the use of High-Pressure Water Jetting equipment (minimum of a 1000bar working pressure) will be considered. The *Contractor* shall provide verifiable references of at least 5 shell and tube heat exchanger projects successfully conducted in the past 5 years.

1.7.2. Specific High-Pressure Water Jetting Requirements

Outage durations are limited and therefore when concerning HPWJ of the turbine main condenser, the *Contractor* shall work simultaneously in as many waterboxes as made available by the *Employer* and must conform to the HPWJ Safety Requirements presented on the next page.

1.7.3. HPWJ Safety Requirements

The safety of *Contractor* personnel is of extreme importance. The following minimum safety requirements must apply during any HPWJ production cleaning activity:

- ✓ *Contracted Operators* must wear CE (*European Economic Area Conformity Marking*) certified water jetting suits, and face shields rated for a working pressure of at least 1000bar.

✓ All foot and leg protection equipment to be appropriately rated for a working pressure of at least 1000bar.

✓ The *Contractor* must work in accordance with a safety procedure/instruction aligned to industry recognised HPWJ practices and standards to protect personnel when utilizing HPWJ equipment.

✓ HPWJ *Contracted Operators* must be trained and certified by an independent industry recognised HPWJ authority affiliated to either WJA or WJTA (Water Jetting Association or Water Jetting Training Academy). **Note that no operator will be allowed to use HPWJ lances on site without the required certification.**

✓ All HPWJ hoses, pressure accessories, pressure equipment and pressure vessels in the HPWJ system to be used on site must be designed for a minimum working (/design) pressure of 1000bar (100MPa). All previously mentioned equipment must also be pressure tested to 1.25 times the working (/design) pressure of the equipment.

✓ All hose-end connections to be fitted with the appropriate “hose-whip-checks” (lance safety devices) to prevent injury of personnel by restraining the hose in the event of an end-fitting-failure.

✓ The HPWJ pump discharge must be fitted with a calibrated pressure gauge and safety relief valve or rupture diaphragm.

✓ Any manholes which are open for ventilation purposes must be properly barricaded by the *Contractor* to eliminate unauthorised entry while cleaning is in progress.

✓ Barriers and warning notices must be in place before any HPWJ work commences.

✓ Compliance with Eskom’s Life Saving Rules as applicable to this activity is obligatory.

✓ The Contracted Operators must use a handheld pneumatic powered feeder which incorporates a sleeve into which the nozzle retracts as it exits the tube. The feeding speed and dwell-time must be set during commissioning as defined in section 1.7.5., on page 8 of this document. This equipment/device must be used at all times to ensure Contracted Operators are not exposed to water jets when moving the lance from one tube to another.

1.7.4. HPWJ Minimum Equipment Requirements

1) For tubes with an internal diameter of 20.5 up to 25 millimetres the minimum nozzle flow rate must be 50 litres/min at 1000bar working pressure. For tubes with an internal diameter between 15 and 20.5 millimetres the minimum nozzle flow rate must be 33 litres/min at 1000bar working pressure.

2) Rotating tube cleaning nozzles with multiple radial water jets or polishing nozzles must be used. The cleaning nozzles must be obtained from a recognised HPWJ equipment supplier and must include technical datasheets for all types to be used on site which show the pressure rating of the HPWJ nozzles, the outside diameter of the nozzles and the tube inner diameter range the nozzle is intended for. The HPWJ cleaning nozzle datasheets must furthermore detail the design features of the cleaning nozzles for unplugging tubes and removing deposits of scale from the inner tube walls. The maximum pressure rating of the nozzle must be 1035bar or 15000 psi. **Nozzles with a higher-pressure rating are not acceptable.** The minimum number of nozzles available on site for the main turbine condenser is 6. Furthermore, the nozzles must travel the full length of all the tubes, i.e., 9 meters.

3) Technical data sheets must be provided for the HPWJ pumps too be used on site and as a minimum should show evidence that the pumps are able to maintain a minimum continuous working pressure of 1000bar at a flow rate of 50 litres/min. This requirement assumes one pump will supply one cleaning nozzle. If a single pump is to supply more than one nozzle simultaneously, the pump must maintain a minimum continuous working pressure of 1000bar and a minimum volume flow of 50 litres/min per each of the cleaning nozzles attached simultaneously to the pump.

4) The HPWJ flexible hose from the foot-valve to the tube-cleaning-nozzle must have a minimum internal diameter of 6 millimetres for tubes with an internal diameter between 15 and 20.5 millimetres. For tubes with an internal diameter of more than 20.5 millimetres, the HPWJ flexible hose from the foot-valve to the tube-cleaning-nozzle must have a minimum internal diameter of 7 millimetres. The maximum hose length is the condenser tube length (9 meters) plus an additional 7 meters (i.e., 16 meters in total). The foot-valve must be positioned in the water-box. The minimum number of hoses available on site for the main turbine condenser is 4. Furthermore, the flexible hose from the pump outlet to the foot-valve must have a minimum internal diameter of 10 millimetres.

5) The *Contractor* must make provision to have an appropriate amount of spare equipment and tooling on-site during the outage, particularly nozzles, hoses, couplings, all wear and tear parts such as seals/gaskets/o-rings, etc. In the event of HPWJ pump breakdown/failure then repair, or suitable replacement, must be affected within 2 hours. The latter must only apply to eventualities involving an unexpected major breakdown/failure of HPWJ Pumps.

6) Under no circumstances is the tube-sheet or protruding tube-ends to be damaged during the HPWJ cleaning activity. The *Contractor* must establish a system or method to ensure impinging water jets from the nozzle are not directly focused on the tube-sheet or onto the outside diameter of the exposed tube-ends.

Prior to any HPWJ cleaning activities an inspection must be performed by the *Contractor Supervisor* and the *Engineer* to photographically record the existing condition of the tube-sheet and protruding tube-ends. Thereafter the *Contractor* must compile and provide the *Employer* with a visual report containing the photographic evidence and the *Contractor's* signature, in acknowledgment of the existing condition.

NB! This activity must be included in the QCP as a hold point. Note that once the HPWJ cleaning activity has been completed, any discovered damages will be at the *Contractor's* expense to repair.

7) The *Contractor* must make provision of adequate number of handheld pneumatic powered feeders as described on at the end of section 1.7.3., on page 4.

8) The *Contractor's* selection of all lances, nozzles, sleeves and hosing must be suitable for the tubing diameters as defined in "Table 2: Main Turbine Condenser Technical Information" on the next page.

9) **The *Contractor* must supply suitable endoscope/fiberscope equipment to facilitate pre- and post-cleanliness inspections of condenser tubes.** The endoscope used for inspection of the tubes must have a minimum length of 9 meters and digital display that includes image capture and recording capabilities with the minimum specifications as outlined in Table 1 below.

Table 1: Specification for Minimum Requirements for Endoscope

CAMERA MINIMUM REQUIREMENTS	
Camera Lens	*Dual (Front & Side)*
Video Resolution	*1080p HD (1920 x 1080 pixel) resolution*
Picture Resolution	*A4 page resolution: 2480 x 3508 pixels*
Megapixel (MP)	*2.1*
Image Format	*JPEG or TIF*
Video Format	*MP4*
Focal Length	*30 mm*
Magnification	*2x*
Waterproof	*IP67*
Bore hole minimum size	*10 m*
Long Range Semi-rigid Reinforced Cable Length	*9 m*

Table 2: Main Turbine Condenser Technical Information at Hendrina PS

HEAT EXCHANGER SPECIFIC INFORMATION			
Tube Details:	Main Bundle "Condensing Zone"	Secondary Bundle "Air Extraction"	Impact Tubes "Peripheral tubes"
Tube Material:	*SoMs71F38*	*304L Stainless Steel*	*SoMs71F38*
Number of Tubes:	*6908*	*1512*	*8020*
Tube Length:	*9000mm*	*9000mm*	*9000mm*
Tube OD:	*25.4mm*	*25.4mm*	*25.4mm*
Tube Wall Thickness:	*1.219mm*	*1.0mm*	*1.219mm*
Tube Profile:	*Straight*	*Straight*	*Straight*
Anticipated Scale Thickness:	*2mm – 3mm*	*2mm - 3mm*	*2mm - 3mm*
Tube Protruding End Lengths	*3mm (Inlet & Outlet)*	*20mm (Inlet & Outlet)*	*3mm (Inlet & Outlet)*
Water-box Access:	*Water-boxes will not be removed from the condenser – access to the tube ends is from within the confined space of the water-box. Simultaneous access is available in 4 water-boxes.*		

Table 3: Generator Hydrogen Cooler

Total Number of Tubes:	53
Tube Dimensions (**Oval Finned Tubes**):	Inner Diameter not Uniform
Tube Material:	SoMs 71 F 38 / Admiralty Brass
Tube Sheet Material:	Ms 60 MF 41 / Muntz Metal
Waterbox Material:	GG-26 / Grey Cast Iron
Tube Lining / Coating:	None / Uncoated
Operating Shell-side Pressure:	310.264 kPa
Operating Shell-side Temperature:	56.5˚C
Operating Tube-side Pressure:	490.5kPa
Operating Tube-side Temperature:	38˚C
Medium on the shell side:	Hydrogen Gas
Medium on the tube side:	Raw cooling water

Table 4: Generator Seal Oil Coolers

Total Number of Tubes:	86
Tube Dimensions (OD x Wall Thickness x Length):	14mm x 1mm x 1620mm
Tube Material:	SoMs 71 F 38 / Special Brass
Tube Sheet Material:	Muntz Metal / Yellow Metal
Waterbox Material:	GG-26 / Grey Cast Iron
Tube Lining / Coating:	None / Uncoated
Operating Shell-side Pressure:	500kPa
Operating Shell-side Temperature:	55˚C
Operating Tube-side Pressure:	206.01 kPa
Operating Tube-side Temperature:	32˚C
Medium on the shell side:	Oil
Medium on the tube side:	Raw cooling water

Table 5: Generator Stator Coolant Coolers

Total Number of Tubes:	196
Tube Dimensions (OD x Wall Thickness x Lengh):	14mm x 1mm x 1538mm
Tube Material:	Cu Ni 10 Fe / Cupronickel
Tube Sheet Material:	Cu Ni 10 Fe / Cupronickel
Waterbox Material:	GG-26 / Grey Cast Iron
Tube Lining / Coating:	None / Uncoated
Maximum Shell-side Pressure:	490.5kPa
Operating Shell-side Temperature:	60˚C
Maximum Tube-side Pressure:	490.5kPa
Operating Tube-side Temperature:	37˚C
Medium on the shell side:	Demineralised Water
Medium on the tube side:	Raw cooling water

Table 6: Turbine Oil Coolers

Number of Tubes:	1572
Tube Dimensions (OD x Wall Thickness x Length):	15.5mm x 0.75mm x 2800mm
Tube Material:	SoMs 71 / Admiralty Brass
Tube Sheet Material	Ms 72 / Copper Zinc Alloy
Tube Lining / Coating:	None / Uncoated
Operating Shell-side Pressure:	500kPa
Operating Shell-side Temperature:	80˚C
Operating Tube-side Pressure:	206.01 kPa
Operating Tube-side Temperature:	50˚C
Medium on the shell side:	Oil
Medium on the tube side:	Raw cooling water

Table 7: Steam Feed Pump Oil Cooler

Number of Tubes:	182
Tube Dimensions (OD x Wall Thickness x Length):	15.5mm x 0.75mm x 2446mm
Tube Material:	SoMs71 F38 / Admiralty Brass
Tube Sheet Material:	Ms 60 Pb

Waterbox Material:	GG-22 / Grey Cast Iron
Tube Lining / Coating:	None / Uncoated
Operating Shell-side Pressure:	392.4 kPa
Operating Shell-side Temperature:	80˚C
Operating Tube-side Pressure:	206.01 kPa
Operating Tube-side Temperature:	50˚C
Medium on the shell side:	Oil
Medium on the tube side:	Raw cooling water

1.7.5. Commissioning Tests and Optimization

Before any work is performed the *Contractor* must demonstrate the following to the *Employer*:

1) Provide all required certificates (equipment pressure tests, pressure gauge calibration, personnel training) as stipulated in section 1.7.3., on page 4 of this document.

2) The *Employer* must verify that the equipment on site complies in all respects to the technical data sheets provided with the tender as well as that the number of pumps, hoses, foot-valves, cleaning nozzles, etc. on site corresponds in all respects to the information provided in the tender returnables.

3) The *Contractor* must demonstrate to the *Employer* that the HPWJ pump, hose and cleaning nozzle(s) in the HPWJ system to be used on site can supply a volume flow rate of 50 litres/min by means of a *'*container & stopwatch' method (or a suitable alternative technique) for a pump outlet pressure of 1000bar. This test assumes one pump will supply one cleaning nozzle. If a single pump is to supply more than one nozzle simultaneously the pump must maintain a minimum volume flow of 50 litres/min per each of the cleaning nozzles attached to the pump.

4) The *Contractor* must demonstrate that the lance safety devices ("hose-whip-checks") in combination with the handheld pneumatic powered feeders, correctly prevents the lance from withdrawing (/whipping away) from the tube during HPWJ and hence is safe for the *Contracted Operators* to utilize.

5) Before starting with the production chemical-HPWJ cleaning operation, the *Contractor* in consultation with the *Employer* must establish an acceptable nozzle resident/dwell-time, cleaning a minimum of 5 'pulled' condenser tubes during an on-site *'bucket test',* thereby demonstrating the *Contractor's* true capability of meeting the minimum acceptance criteria stipulated under section 1.5, on page 3 of this document. The *Employer* will provide the 5 tubes and as part of the test the *Contractor* must also demonstrate to the *Employer* that the working pressure of the HPWJ pump, hose and cleaning nozzle combination, does not damage the tubes.

6) Dwell-times must typically not exceed 40 seconds per tube, and the rate of lance travel should not be slower than 6 seconds per meter. After the *'bucket test*' has been conducted and during cleanliness visual inspections it may be found that cleaning with the pre-established nozzle resident/dwell-time is ineffective, i.e., scale deposits are not being entirely removed from the inner walls of the condenser tubes. In such an event the nozzle resident/dwell-time may be further increased, and the '*bucket-test'* repeated. This test must be performed in consultation with the *Employer*

and actual high-definition endoscopic inspections of all the cleaned tube sections must be performed. Thereafter, the *Contractor* must capture all the video recorded inspection imagery (to be taken both before and after HPWJ commences) within a visual report and both a physical and digital copy of said report is to be handed over to the *Employer* for cleanliness evaluation and record keeping purposes.

To clarify, the *Contractor* must demonstrate that these tube sections can be cleaned in a single nozzle pass to the point where no traces of products of corrosion or scale deposits are visible, and no immediate damage to the internal surfaces of the tube(s) is evident once the test has been completed. In cases where excessive scale thickness prohibits the use of a nozzle capable of 50 litre/min at 1000 bar working pressure, then a nozzle with capability of no less than 33litre/min at 1000 bar working pressure must be used.

NB! This activity must be included in the QCP as a hold point. Note that failure to pass the 'bucket-test' will be considered as non-performance with respect to the contract.

1.7.6. Additional Requirements

- The *Contractor* shall supply suitable plastic sheeting and place it over the scaffolding which covers the main condenser cooling water inlet ducts to prevent any of the debris removed from the condenser tubes during HP-cleaning from falling down into the CW inlet duct.

- All tubes which are blocked or obstructed, and which cannot be unblocked by HPWJ shall be marked on the tube-map diagram and must be plugged using expanded rubber plugs which have brass-bolts.

- The *Contractor* shall maintain a daily logbook where the number of tubes cleaned, time elapsed to clean said number of tubes, changes in working pressure, etc. are logged.

- The *Contractor* shall clean all the water-boxes as well as the drainpipes connected to the inlet and return water-boxes after cleaning the tubes. Moreover, all foreign materials and debris shall be removed from the water-boxes.

- The *Contractor* shall supply suitable endoscope/fiberscope equipment to facilitate pre-HPWJ and post-HPWJ cleanliness inspections of condenser tubes. After the endoscopic inspections have been completed the Contractor must capture all the video recorded inspection imagery within the Heat Exchanger Inspection Report and both a physical (/hard copy) and digital copy of said report is to be handed over to the *Employer* for cleanliness evaluation and record keeping purposes.

- Therefore, as per the requirements of this document a total of six (6x) sections must be included within the Heat Exchanger Cleaning Report:

  1) The first section capturing the photographic evidence of the original condition of the tube-sheet and protruding tube-ends, taken in consultation with *Engineering* before HPWJ commences.

2) The second section capturing the endoscopic video recorded inspection imagery of the 5 ‘pulled’ condenser tubes both before and after they have been cleaned as part of the preliminary ‘bucket test’.

3) The third section capturing the endoscopic video recorded inspection imagery of the initial ‘dirty’ condition of the condenser tubes in the inlet and outlet water-boxes, taken before HPWJ commences.

4) The fourth section capturing the endoscopic video recorded inspection imagery of the first intermediate condition of the condenser tubes in the inlet and outlet water-boxes, taken a quarter-way through the HPWJ production activity.

5) The fifth section capturing the endoscopic video recorded inspection imagery of the second intermediate condition of the condenser tubes in the inlet and outlet water-boxes, taken a half-way through the HPWJ production activity.

6) The sixth section capturing the endoscopic video recorded inspection imagery of the final clean-condition of the condenser tubes in the inlet and outlet water-boxes after HPWJ has been completed.

Note that inspection findings are to be included at the end of each section and as a minimum should expertly detail the actual degree of cleanliness before and after the completion of the HPWJ production activity. Moreover, the final marked-up tube map diagram must also be included in the Heat Exchanger Cleaning Report.

1.8. Documentation Required:

- The *Contractor* shall compile a final method statement, safety work procedure and Quality Control Plan (QCP) and submit these documents to the *Engineer* for approval before HP-cleaning may commence. The *Engineer* shall have the opportunity to add witness or hold points on the QCP.
- A statement from the *Contractor* that the minimum equipment and safety requirements (as defined in sections 1.7.3. and 1.7.4. on pages 4 & 5) will be met without exception.
- *Contractor* to submit a detailed list of exclusions or deviations from the above specification (if any).
- All technical datasheets for the forward-facing and rotating tube cleaning nozzles to be used for cleaning of the condenser tubes as well as the nozzles to be used for testing purposes (if the same nozzle is not used for both). The minimum information to be shown on a datasheet is the following:
    - Names of supplier of nozzle,
    - Pressure rating of the nozzle.
    - Outside diameter of nozzle and tube inner diameter range the nozzle is intended for.

Note: The cleaning nozzle datasheets shall furthermore detail the design features of the cleaning nozzles for unplugging tubes and removing deposits from the inner tube walls. Note that only nozzles from recognized HPWJ equipment suppliers will be regarded as acceptable.

- Technical datasheets for all the HPWJ pumps to be used on site which indicate the flow rate of the pumps at 1000bar working pressure as a minimum
- Technical datasheets for flexible hoses stating pressure rating and internal diameter as a minimum. The datasheets for both the flexible hose from pump outlet to foot-valve and the hose from foot-valve to rotating tube cleaning nozzle shall be supplied.
- The *Contractor* shall indicate in the tables shown on page 12 what equipment will be available on site for the full duration of the HPWJ cleaning process to be executed on the condenser in the allocated outage time period. (Example: If only two pumps will be used then only the first two lines of the table are to be completed).

1.9. Quality Requirements:

1. Limits specified in Section 7 of the attached scope (see Reference [4] on page 13), safety and equipment requirements, and selection criteria shall not be exceeded. In cases where adequate cleaning cannot be achieved, other cleaning techniques shall be considered by the *Employer*.

2. In all cases the *Contractor* shall be responsible for meeting the QC requirements and shall keep records of all his inspections and tests. The *Contractor* shall be responsible for presenting a method statement and QCP to the *Employer* for approval before full-scale cleaning of the particular heat exchanger may commence.

3. The *Contractor* shall be responsible for compiling a Heat Exchanger Inspection Report (i.e., a quality assessment report) at the end of each cleaning operation as described at the end of section 1.7.6., on page 9 and 10.

4. The *Employer* shall witness the final inspection and may also elect to have witness and hold points, other than the final inspection. Prior to the commencement of work, the *Contractor* shall confirm in writing the *Employer's* inspection requirements and date of commencement of work.

5. The *Contractor* adheres to the *Employer's* quality standards, procedures and specifications:

   5.1 HSPPA/006 R4: “Eskom Hendrina Power Station Quality Procedure”

HPWJ Pumping Capacity/Resource

HPWJ Pump #	HPWJ Pump Identification	HPWJ Pump Flow Rate (litres/min) at 1000bar Working Pressure	Number of Cleaning Sets (i.e., cleaning nozzles, hoses, foot-valves, etc.) which will be connected simultaneously to the pump
1			
2			
3			
4			
5			
6			

HPWJ Hose Inventory

HPWJ Hose #	HPWJ Hose Series or Part Number:	Hose Internal Diameter (mm):	Hose External Diameter (mm):	Maximum Working Pressure (bar):
1				
2				
3				
4				
5				

6				

HPWJ Nozzle Inventory

Nozzle #	Part Number:	Supplier Name:	Design (Unplugging / Polishing / Universal):	Pressure Rating (bar):	Flow Range (litres/min):
1					
2					
3					
4					
5					
6					

1.10. Health and Safety Requirements

The *Contractor* ensures compliance to the *Employer's* health and safety requirements:

4. HSPHO/058: "Safety, Health and Environmental Specifications for Principal Contractors"
5. 32-95: "Procedure For The Effective Management of The Safety, Health And Environmental Related Incidents"
6. HSPHO/059: "Emergency Response Procedure"
7. Specific requirements related to Eskom's "Life Saving Rules" that would be applicable to this activity.

1.11. Environmental Requirements

The *Contractor* ensures that all goods, services or *works* supplied in terms of the Contract conform to *Employer's* environmental procedures and specifications:

1. HSPHO/058: "Safety, Health and Environmental Specifications for Principal Contractors"
2. HSPPPIN005: "Hendrina Power Station Environmental Policy"
3. HSPPIN024: "The Identify & Update Environmental Aspects Procedure"
4. HSPPIN032: "The Environmental Emergency Preparedness Procedure"
5. HSPPIN003: "The Waste Management Procedure"
6. HSPPON003: "Hendrina Power Station Environmental Procedures"
7. HSPPIN024: "The Identify and Update Environmental Aspects Procedure"
8. 32-95: "Procedure for The Effective Management of The Safety, Health and Environmental Related Incidents"

1.12. Tender Technical Evaluation Strategy

- The minimum weighted final score (threshold) required for a tender to be considered from a technical perspective is 75%. Should no *Contractor* meet the minimum threshold of 75%, Eskom reserves the right to negotiate and/or consider *Contractors* that obtained between 70% and 74%.
- If any technically unacceptable deviations or exclusions are listed in the tender, the tender will be deemed as an alternative tender and considered to be non-responsive, and it shall not be evaluated. No alternative tenders are allowed. If no technical deviations are mentioned in the tender it will be assumed that the *Contractor* shall fully comply with the scope of work.
- If the tender returnables are not provided, the scoring for the specific criteria shall be zero as described in ” on the next page. If the mandatory requirements are not submitted, the tender shall be seen as non-responsive.

Table 3: Scoring of Qualitative Criteria

Score	(%)	Definition
5	100	**COMPLIANT** • Meet technical requirement(s) AND; • No foreseen technical risk(s) in meeting technical requirements.
4	80	**COMPLIANT WITH ASSOCIATED QUALIFICATIONS** Meet technical requirement(s) with; • Acceptable technical risk(s) AND/OR; • Acceptable exceptions AND/OR; • Acceptable conditions.
2	40	**NON-COMPLIANT** • Does not meet technical requirement(s) AND/OR; • Unacceptable technical risk(s) AND/OR; • Unacceptable exceptions AND/OR; • Unacceptable conditions.
0	0	**TOTALLY DEFICIENT OR NON-RESPONSIVE**

1.13. Technical Tender Returnables

1.13.1. Technical Returnables Required at Tender Stage

The *Contractor* shall supply the following information as tender returnable as part of his tender. Should the mandatory returnable not be supplied tender will be rejected and considered non-complaint. The qualitative criteria will be used to evaluate the suitability and compliance of the tender to the actual scope of work requirements.

a) The *Contractor* shall provide verifiable reference list of HPWJ cleaning contracts using a minimum of 800 bar working pressure, of industrial heat exchangers in the last 5 years. At least three references shall be provided.

b) The *Contractor* shall provide a list of exclusions or deviations to the attached **SOW** (see Reference [4] in section 1.2 of this document), if there are no exclusions or deviations a clear statement must be provided as such, if no statement is provided then the tender will be negatively affected.

c) The *Contractor* to populate Tables on page 24 of the attached **SOW** with the details of the equipment that will be available on site for the full duration of the contract to complete the cleaning of the condenser within the allowed time period (example: If only two pumps will be used only the first two lines of the table are to be completed).

d) Technical datasheets for the rotating tube cleaning nozzles, HPWJ pumps and flexible hoses for cleaning the tubes as described in Table 2 on page 20 of the **SOW**. The minimum information to be shown on the datasheet is: names of suppliers of HPWJ equipment to be used as, flow rate at 1 000 bar working pressure for the HPWJ pumps as well as pressure rating of the HPWJ nozzles to be used, the outside diameter of those nozzles, and the tube inner diameter range the nozzle is intended for. The HPWJ cleaning nozzle datasheets shall furthermore detail the design features of the cleaning nozzles for unplugging tubes and removing deposits of scale from the inner tube walls.

e) The Contractor provides a preliminary method statement for cleaning the condenser tubes. The method statement includes, amongst others, items like safety requirements, commissioning, monitoring during the cleaning process, equipment, etc.

f) Contractor to provide clear statement in the tender that an endoscope/fiberscope which complies with the specifications listed in Table 1 on page 19 of the **SOW**, will be provided for use throughout the HPWJ opportunity outage period.

1.14. Technical Tender Evaluation Criteria

1.14.1. TET Gatekeepers

	Mandatory Technical Criteria Description	Motivation for Gatekeeper
1	The Contractor shall provide a verifiable reference list of HPWJ cleaning contracts using a minimum of 800 bar working pressure, of industrial heat exchangers in the last 5 years. Verifiable references of at least 5 projects successfully conducted in the past 5 years are required.	To ensure high quality of workmanship.
2	The *Contractor* shall supply suitable Endoscope/Fiberscope equipment to facilitate pre- and post-cleanliness inspections of condenser tubes. The Fiberscope shall have a 'reach-length' of 9m and should have a digital display that includes image capture and recording capabilities.	To enable *Employer* to perform endoscopic inspections and rightly assess the quality of tube cleanliness.

1.14.2. Qualitative Technical Evaluation Criteria

Table 4: Evaluation Criteria

Number	Qualitative Technical Criteria Description		Reference	Criteria Weighting (%)	Criteria Sub Weighting (%)
	1	Exclusions and omissions to the referenced Outage Scope of Work - Doc Identifier: F/HPWJSOW-T/1-10 (Sections 7.2. and 7.3., on pages 17 – 24 & pages 25 – 30). As part of this section the technical datasheets of the nozzles, hoses and pumps as well as completed Tables on page 24 of the SOW, as provided in the tender, are considered and evaluated.	Point (b), (c) & (d) under section 1.14.1 on page 16		70
	2	Preliminary method statement for cleaning the condenser tubes.	Point (e) under section 1.14.1 on page 16		30
				TOTAL	100%
NB! A minimum total of 75% is required in this section for further consideration. The contractor shall ensure that all the returnables are submitted as required in section 1.14.					

1.15. Information Required upon Contract Award:

Before any work commences the *Contractor* shall submit the following to the *Employer* for acceptance/approval:

i. Safety work procedure / instruction used for HPWJ.

ii. HPWJ method statement, QCP and spare tool list. As per procedure, the *Engineer* must be given the opportunity to add witness or hold points on the QCP before any cleaning commences.

iii. The *Contractor* shall attend induction and submit a safety file.

1.16. TET Members

Technical evaluation will be done by the member listed on table below:

Table 5: TET Members

TET number	TET Member Name	Designation
TET 1	Deven Dieter Bodenstedt	Condensate System Engineer
TET 2	Joseph Mkansi	Cooling Water & Pumps System Engineer
TET 3	Francois Du Preez	Senior Consultant
TET 4	Herman Van Niekerk	Senior Consultant
TET 5	Stefan Erasmus	Senior Consultant

Table 6: TET Member Responsibilities

Mandatory Criteria Number	TET 1	TET 2	TET 3	TET 4	TET 5
1	X	X	X	X	X
2	X	X	X	X	X
Qualitative Criteria Number	**TET 1**	**TET 2**	**TET 3**	**TET 4**	**TET 5**
1	X	X	X	X	X
2	X	X	X	X	X

1.17. Foreseen Acceptable / Unacceptable Qualifications

Table 7: Acceptable Technical Risks

Risk	Description
1	Some minor equipment needs to be hired by the contractor
2	Minor deviations or clarifications to the technical specification

Table 8: Unacceptable Technical Risks

Risk	Description
1	Contractor hiring all the required equipment
2	Final method statement, safety work procedure and quality control plan are insufficient
3	Any significant deviations from the safety requirements specified in section 7.2.3 of the **SOW**
4	Any of the equipment does not meet the requirements as detailed in section 7.2.4 of the **SOW**
5	The technical datasheets do not demonstrate compliance to the requirements detailed in sections 7.2.4 of the **SOW** & 1.14.1 on page 16 of this document
6	Completed Tables (page 24 of **SOW**) do not demonstrate compliance to the requirements detailed in sections 7.2.4 of the **SOW** & 1.14.1 of this document
7	The Contractor does not provide an endoscope, or the endoscope does not meet the requirements of section 7.2.4 of the **SOW**

Table 9: Acceptable Technical Exceptions / Conditions

Risk	Description
1	Compliance to virtually all technical specification requirements

Table 10: Unacceptable Technical Exceptions / Conditions

Risk	Description
1	Non-compliance to most technical specification requirements
2	The use of diesel generators on the plant

2. Management strategy and start up.

2.1 The *Contractor*'s plan for the *service*

The *Contractor* will submit a plan to the *Service Manager* for acceptance within the period stated in the contract data.

The Contractor shows the following on his plan that he submits for acceptance within the period stated in the contract data.

- Starting and the end date of the *service period*.
- Order and timing of the Work of the Employer and Others, as last agreed with them, by the Contractor or if not so agreed as stated in the Service information.
- Provisions for: - time risk allowances, health and safety requirements and procedures set out in this contract.
- The dates when in order to provide the Service in accordance with his plan the *Contractor* will need.
- Access to the Affected Property as stated in the Service Information.
- Acceptances
- Plant and Materials, equipment and other things to be provided by *Employer* and information from other.
- For each operation, a statement of how the *Contractor* plans to do the work identifying the principal Equipment and other resources which he plans to use.
- Other information which the Service Information requires the *Contractor* to show on a plan submitted for acceptance.
- Risk assessments, scope of work and quality inspection plans to be done and submitted to the Service Manager prior every activity of work commences

2.2 Management meetings

A mandatory safety meeting will be held prior to each cleaning operation and daily progress meetings are required during a cleaning operation (daily plant focus / outage meetings). Additional meetings may be arranged as and when required by the Service Manager, date and time to be communicated on three days before the actual date

2.3 Contractor's management, supervision and key people

Before any work commence on site the Contractor will provide Safety File to Hendrina Power Station's Safety Department for approval. Valid medicals shall form part of the safety file

2.4 Documentation control

General

Title	Date or revision	Tick if publicly available
Safety, Health and Environmental Specifications for Principal Contractors	HSPHO/058	X

Eskom Hendrina Power Station Quality Procedure	HSPPA/006 R4	X
Protective Services – Access Control System Procedure	HSPHO/020	X
Hendrina Power Station Environmental Policy	HSPPPIN005	X
The Identify & Update Environmental Aspects Procedure	HSPPIN024	X
The Objectives And Targets Procedure	HSPPIN026	X
The Environmental Emergency Preparedness Procedure	HSPPIN032	X
The Training, Awareness & Competence Procedure	HSPPIN029	X
The Waste Management Procedure	HSPPIN003	X
Hendrina Power Station Environmental Procedures	HSPPON003	X
Emergency Response Procedure	HSPHO/059	X
The Identify And Update Environmental Aspects Procedure	HSPPIN024	X
The Roles And Responsibilities Procedure	HSPPIN028	X
Procedure For The Effective Management Of The Safety, Health And Environmental Related Incidents	32-95	X
Technical specifications:		
[1] Condenser Healthcare Standard, Revision 1.	240-56176026	**Controlled Disclosure**
[2] Condenser Healthcare Guideline, Revision 1.	240-56030499	**Controlled Disclosure**
[3] Cleaning of Steam Condensers and Heat Exchangers Guideline, Revision 1.	240-56030530	**Controlled Disclosure**

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

The *Contractor* is responsible to plan the supply of the documentation during the various project stages and to provide the documentation in accordance with the Contractor Document Submission Schedule (CDSS). A document is thus any written or pictorial information describing, defining, specifying or certifying activities, requirements, procedures or results.

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

It is the responsibility of the *Contractor* to update any drawings that may have changed due to modifications on the plant. These piping drawings should be submitted and registered correctly by the *Contractor* to the drawing office at Kriel Power Station.

The *Contractor* submits all documentation on a formal transmittal form to the *Service Manager.*

All manuals, documents, drawings and engineering documentation shall be presented in British English in both software and hardware.

All Communications will be filed and kept on site at all times as it is crucial to have the correct communication structures. These communication documents should at all times adhere to the NEC 3 Term Service Contract communication requirements.

Contractor Document Submission Schedule (CDSS)

Document Name/Description	Date/Time documents to be submitted
Baseline risk assessment	A month before start of the work
QCP's	A month before start of the work
Contractor's Safety file	Two week before start of work
Daily progress report	After Every Shift
Data pack	Within 14 days of completion of the services

2.5 Invoicing and payment

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

The *Contractor* shall address the tax invoice to
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:

Eskom Holdings Limited
Hendrina Power Station
Private Bag x 1003
Pullenshope
1096

_____

and include on each invoice the following information:

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

2.6 Management of work done by Task Order

See appendix 1

3 Health and safety, the environment and quality assurance

3.1 Health and safety risk management

3.1.1 High Pressure Cleaning Safety Requirements:

1. HPWJ Operators shall wear CE (European Economic Area Conformity Marking) certified water jetting suits and face shields rated for the working pressure as stated in in Section 3.1. All foot and leg protection equipment shall also be rated for this working pressure.

2. The *Contractor* shall work in accordance with safety procedures / instructions alighted to industry recognized HPWJ practices and standards to protect personnel using HPWJ equipment.

3. HPWJ Operators shall be trained and certified by an independent industry recognised HPWJ authority. No operator will be allowed to use HPWJ lances on site without the required certification.

4. All HPWJ hoses and associated equipment and tooling (nozzles, fittings, foot valves, etc.) used on site shall have valid pressure test certificates. The test pressure shall be a minimum of 1400 Bar.

5. All hose end connections shall be fitted with the appropriate “hose checks” to prevent injury by restraining the hose in the event that an end fitting failure.

6. The HPWJ pump discharge shall be fitted with a calibrated pressure gauge and safety relief valve or rupture diaphragm.

7. Access of personnel to the cooling water side of the HX water boxes shall only be authorised after the air oxygen levels inside the water box has been verified and found to be suitable. The *Employer* will be responsible to conduct the air oxygen test.

8. The *Employer* ensures that suitable scaffolding is constructed to ensure safe access to the cleaning area.

9. The *Contractor* ensures that access to the far end of the HX water boxes is prohibited whilst cleaning is in progress. The *Contractor* informs the *Employer* to close the required man-access doors to prevent entry into these water boxes during a cleaning operation where applicable.

10. The *Contractor* ensures that suitable barriers and warning notices are in place prior to the commencement of work.

11. The *Contractor* is required to familiarise all employees with the baseline health and safety risk assessment for the *works.*

3.1.2 Specific Risks

The following risks are identified by the Project Manager and Contractor specifically addresses these risks to ensure that the works is carried out safely:

a) Working at heights
b) Dusty conditions
c) High noise area

d) Work is being carried out overhead by Others
e) Work is being carried out below
f) Work in confined spaces
g) Possibility of noxious gasses
h) Possibility of fires or explosions
i) Rigging

3.1.3 Plant Safety Regulations

The *Employer*, on request from the Contractor, isolates required plant from all sources of danger as described in the Plant Safety Regulations.

The Contractor supplies his own personal protective equipment necessary to carry out the works.

The Contractor is also responsible for inspecting and maintaining such equipment as required in terms of the OHS Act and local procedures.

The *Employer*, on request, makes available a copy of the latest revision of the Plant Safety Regulations available to the Contractor.

The Contractor will comply with the Employer's 'Permit to Work' system.

The Contractor conforms to all rules and regulations applicable to plant safety and completes the Workman's Register prior to working on the plant.

The Contractor declares any grinding and welding to be carried out on the workers register.

At every permit change the Contractor withdraws himself/herself/his staff for that period of permit suspension/revocation and thereafter only proceeds with the works after signing onto the new permit.

The Contractor ensures that he/she/all sub-Contractors/personnel/staff/his visitors are medically, physically and psychologically fit to enter the Kriel Power Station, and specifically any confined space.

The Contractor is prohibited from entering Radiation Areas.

The onus is on the Contractor to ensure that the correct confined space requirements and tests have been done or met by the Project Manager prior to entry into any confined space or hazardous plant areas.

The Contractor ensures that all personnel are competent to carry out the works. Proof of competency for technical and safety aspects must be available as and when required on site.

The *Contractor* shall comply with the health and safety requirements as per Eskom's Rules and Regulations

3.2 Environmental constraints and management

The *Contractor* ensures that all goods, services or *works* supplied in terms of the Contract conform to *Employer's* environmental procedures and specifications:

1. HSPHO/058: "Safety, Health and Environmental Specifications for Principal Contractors"

2. HSPPPIN005: “Hendrina Power Station Environmental Policy”
3. HSPPIN024: “The Identify & Update Environmental Aspects Procedure”
4. HSPPIN032: “The Environmental Emergency Preparedness Procedure”
5. HSPPIN003: “The Waste Management Procedure”
6. HSPPON003: “Hendrina Power Station Environmental Procedures”
7. HSPPIN024: “The Identify And Update Environmental Aspects Procedure”

32-95: “Procedure For The Effective Management of The Safety, Health And Environmental Related incidents

3.3 Quality assurance requirements

Quality Requirements:

1. Limits specified in Section 3 of the scope, requirements and selection criteria’ shall not be exceeded. In cases where adequate cleaning cannot be achieved, other cleaning techniques shall be considered by the *Employer*.
2. In all cases the *Contractor* shall be responsible for meeting the QC requirements and shall keep records of all his inspections and tests. The Contractor shall be responsible for presenting a method statement and QCP to the *Employer* for approval before full-scale cleaning of the particular heat exchanger may commence.
3. The *Contractor* shall be responsible for compiling a quality assessment report at the end of each cleaning operation as described in Section 1.7
4. The *Employer* shall witness the final inspection and may also elect to have witness and hold points, other than the final inspection. Prior to the commencement of work, the *Contractor* shall confirm in writing the *Employer's* inspection requirements and date of commencement of work.
5. The *Contractor* adheres to the *Employer’s* quality standards, procedures and specifications:

a. HSPPA/006 R4: “Eskom Hendrina Power Station Quality Procedure”

4. Procurement

a. People

i. Minimum requirements of people employed

As per Contractor’s discretion

ii. BBBEE and preferencing scheme

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.

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

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

Failure by the *Contractor* to notify the *Employer* of a change in its B-BBEE status may constitute a reason for termination will be dealt with according to the NEC3 TSC penalty/termination clauses

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

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

.

[Insert the agreed ASGI-SA Compliance Schedule here]

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

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

b. Plant and Materials

i. Specifications

Plant and Materials are defined as items intended to be included in the Affected Property. This will refer to replacement of worn or defective parts, routine replacement as part of regular preventative maintenance and supply of spare parts.

ii. Plant & Materials provided "free issue" by the *Employer*

Item	Date by which it will be provided
1. Access to the property affected by the service.	As and when required
2. Safety induction to personnel involved in the cleaning operation.	
3. The required isolations and Permit to Work.	

4. Adequate potable water supply for HP cleaning activities.	
5. Adequate demineralised water supply for shell side flooding.	
6. A dedicated cleaning area in close proximity to the heat exchanger/s.	
7. Loading facilities: A 15 Ton crane and 5 Ton forklift with operating personnel / driver.	
8. Electrical Supplies (Supply only): 380V 3 phase 100A capacity, 240V 1 phase 15A capacity including a qualified electrician.	
9. Scaffolding.	
10. Heat Exchanger tube-map diagram / sketches.	

NB: Under no circumstances is the *Contractor* allowed to connect up to any services or electrical supply without permission from the Employer Representative. A 24HR notice to the Employer Representative applies to all of the above.

5Working on the Affected Property

a. *Employer*'s site entry and security control, permits, and site regulation

Security access control

This is an extract of procedure reference number HPSH0/020 called "Application of Security Access Control" at Hendrina Power Station" and is obtainable from the Hendrina buying office.

Responsibilities

Prior to requiring access to the site the Contractor submits applications for all permits to: -

Eskom – Hendrina Power Station
Protective Services Department
Private Bag X1003
Pullenshope
1097
Telephone (013) 296 3522

All contractor personnel shall be issued with a temporally entry permits which will contain the following information:
Name
Company
ID number
Permit number and validity

In order to assist employer's representative with the issuing of permits and the identification of the personnel on site, the contractor must supply the list of all personnel that he intends using on site, at least one week prior to the starting of work. This list must be delivered to the above address and to the Employer's Representative. This list should include the following information.
Company name
Name and ID number of all personnel
Indicate whether the employees have completed a Hendrina Power Station induction course.

The chief of Protective Services may with valid cause remove any of contractor's personnel from site, either temporally or permanently. He may deny access to the site to any person whom, in the opinion of the said Chief of Protective Services constitutes a security risk.
The contractor will be restricted to the working areas associated with his place of work. The contractor is forbidden to enter any other areas, and must ensure that his employees abide by these regulations. On completion of the works the contractor returns all permits to protective services.

Searching
The Contractor's employees and Equipment are subject to being searched on entering or leaving the security area of the Power Station. Searching is done on a "spot check" basis.

Photo Permits
Employees of the Contractor are in possession of their photo permits at all times while doing work in the security area of the Power Station.
The Employer replaces lost permits or intentionally damaged permits at a cost of R20,00 per permit and is paid by the Contractor.

Day Visitor Permits
Day visitors are identified by means of an identification document, passport or by an employee of the Employer. They complete the visitors' register after which they may enter the Power Station.

Temporary Permits
Are issued to Contractor employees who require access to the Power Station for a period of 14 days or longer.
Persons in possession of a valid temporary permit are required to sign the visitors' register before entering the Power Station.

Vehicle Permits
Are issued to the Contractor for vehicles requiring access to the Power Station security area for work being done:

1 to 10 employees	-	1 permit
11 to 20 employees	-	2 permits
21 to 40 employees	-	3 permits
41 to 60 employees	-	4 permits
61 to 80 employees	-	5 permits
More than 80 employees	-	6 permits

Permits are issued for the duration of the contract or for one year, whichever is the shorter and are displayed clearly on the vehicle windscreen.
The Contractor adheres to the general speed limit of 30k/h for heavy vehicles and 40k/h for light vehicles.

Prohibited Articles
On entering Hendrina power station the contractor declares any prohibited articles, equipment, plant and materials in possession.
Cameras will only be allowed with the written permission of the Employer.
Explosives and firearms are not allowed within the security area of the Power Station.

b. Cooperating with and obtaining acceptance of Others

Quality assurance / Quality control actions and controls may be required for the service as well as final inspections and tests if so required

c. Records of *Contractor*'s Equipment

The *Contractor* will at all times keep record of his equipment on site with relevant inspections carried out. Inspection reports should be accessible by the *Service Manager* at any given time when he deems necessary.

All equipment or tools signed in by the *Contractor* should strictly adhere to the gate access rules and procedures.
All Equipment including hired should be inspected and approved before accepted on site.

i. Provided by the *Contractor*

All equipment and tools are subject to a security screening before it is allowed on site

The Contractor ensures that no passengers are transported on the back of LDV's (bakkies) or trucks within the boundaries of the Employer's property which starts at the Public Exclusion Barrier (PEB) entrances. No person may drive any vehicle on Eskom premises unless the driver and all passengers are wearing seat belts. Failure to adhere will result in access on to the Employer's property being denied.

Appendix 1

Task Order

Task Order form for use when work within the *service* is instructed to be carried out within a stated period of time on a Task by Task basis

Task Order No. **[●]** *service* .**[●]**

To: **[●]**.....
..... (*Contractor*)

I propose to instruct you to carry out the following task:

Description **[●]**

Starting date **[●]**

Completion Date **[●]**

Delay damages per week **[●]**

Please submit your price and programme proposals below.

Signed: Date

(for *Employer*)

Total of Prices for items of work on the Price List (details attached) R._____

Total of Prices for items of work not on the Price List (details attached). R._____

Total of the Prices for this Task Order R _____

The programme for the Task is ..... [ref] (attached)

Signed: Date

(for *Contractor*)

I accept the above price and programme and instruct you to carry out the Task

Signed: Date:

(for *Employer*)

Appendix 2

***Contractor's* KPA's and KPI's**

1 KPA'S Within value, within time, within quality requirements and within safety requirements
1.1 Time
1.2 Quality
1.3 Safety
1.4 Environmental

2 KPI'S
2.1 Time: The *Contractor* ensures compliance to the submitted detailed programs for the cleaning operations on the various heat exchangers as much as reasonably possible. Deviations from the program without early warnings to the *Employer* are not acceptable. Failure to comply with the program durations will lead to Early Warnings being issued and in the case of continuance, a Defect Notification. As per the contract delay damages of 1% per day will be payable with a maximum of 10% of the contract value. Should the matter not be resolved after issuing two Defect Notifications, the *Employer* may consider terminating the contract as per core clause 91. The *Contractor* is required to respond within 12 days for emergency cleaning operations and within 2 days for planned cleaning operations. If the required cleaning is not conducted an NCR will be issued. After three NCR's the *Employer* may choose to terminate the contract.
2.2 Quality: All QIP's and cleaning procedures for a specific cleaning operation are submitted to the *Employer* for review prior to the commencement of work. Upon the completion of the cleaning activity, the QIP will be signed by the *Employer.* The *Contractor* ensures that the Data Books reaches the *Employer* within 7 days of completion of the cleaning activity. The minimum acceptance criteria is that all scale shall be removed from the internal surface of the tubes, i.e. the entire internal tube surface of all the tubes shall be completely clean with no traces of corrosion product or other scales and deposits on the tube inner surfaces. Failure to comply with the acceptance criteria will lead to Early Warnings being issued and in the case of continuance, a Defect Notification. As per the contract performance damages of 5% will be payable with a maximum of 20% of the contract value. Should the matter not be resolved after issuing two Defect Notifications, the *Employer* may consider terminating the contract as per core clause 91.

2.3 Safety:

The *Contractor* ensures compliance to all safety requirements stated in the document during a cleaning operation. The *Contractor* shall attend induction and submit a safety file. The ***Employer's*** Permit regulations will be strictly adhered to and monitored.

In the case of Safety violations, the work shall be stopped and Defect Notifications Issued. The *Employer* has a 0% tolerance on safety issues and may lead to termination of contract.

2.4Environmental:

In the case of an environmental violations / non-compliance Early Warnings are issued accompanied by a follow-up meeting. Defect Notifications are issued in the case of continuance violations / ignorance. If the *Contractor* fails to comply after two Defect Notifications the *Employer* may choose to terminate the contract. Environmental violations / incidents will not be tolerated.