NEC3 Term Service Contract (TSC3)

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

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

for **Drakensberg Power Station Fire Detection System Contract**

Contents:		**No of pages**
Part C1	**Agreements & Contract Data**	**[●]**
Part C2	**Pricing Data**	**[●]**
Part C3	**Scope of Work**	**[●]**

CONTRACT No.

PART C1: AGREEMENTS & CONTRACT DATA

Contents:		No of pages
C1.1	Form of Offer and Acceptance	[●]
C1.2a	Contract Data provided by the *Employer*	[●]
C1.2b	Contract Data provided by the *Contractor*	[●]
C1.3	Proforma Guarantees	[●]

C1.1 Form of Offer & Acceptance

Offer

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

Drakensberg Power Station Fire Detection System Contract

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

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

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

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

Signature(s) .....

Name(s) .....

Capacity .....

For the tenderer: .....

(Insert name and address of organisation)

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

[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*.

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 and signed 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
		X13: Performance Bond
		X17: Low service damages
		X18: Limitation of liability
		X19: Task Order
		Z: *Additional conditions of contract*
	of the NEC3 Term Service Contract April 2013[2] (TSC3)	
10.1	The *Employer* is (name):	**Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state owned company incorporated in terms of the company laws of the Republic of South Africa**
	Address	**Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg**
10.1	The *Service Manager* is (name):	**Nompumelelo Ndlovu**
	Address	**15 Pasita St Rosen Park Cape Town 7550**
	Tel	**036 342 3202**

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

	e-mail	solaninc@eskom.co.za
11.2(2)	The Affected Property is	**Drakensberg Power Station**
11.2(13)	The *service* is	**Routine and non-routine maintenance of Fire Detection Systems at Drakensberg Power Station**
11.2(14)	The following matters will be included in the Risk Register	**Community unrest.** **Adverse weather condition.** **Unforeseen interface issues.** **Contractor's unavailability.** **Unavailability of Spares.**
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	**1 (One) week** **Immediately for Health and safety issues.**
2	**The *Contractor*'s main responsibilities**	**Data required by this section of the core clauses is also provided by the *Contractor* in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data**
21.1	The *Contractor* submits a first plan for acceptance within	**2 (Two) weeks of the Contract Date**
3	**Time**	
30.1	The *starting date* is.	**To be confirmed**
30.1	The *service period* is	**5 Years**
4	**Testing and defects**	**There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data**
5	**Payment**	
50.1	The *assessment interval* is	**between the 24th and the 25th day of each successive month.**
51.1	The *currency of this contract* is the	**South African Rand**
51.2	The period within which payments are made is	**4 (Four) weeks after the receipt of a valid tax invoice.**
51.4	The *interest rate* is	**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 Limited (as certified, in the event of any dispute, by any manager of such bank, whose appointment it shall not be necessary to prove) for amounts due in Rands.
6	**Compensation events**	**There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data**
7	**Use of Equipment Plant and Materials**	**There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data**
8	**Risks and insurance**	
80.1	These are additional *Employer*'s risks	**1. Not Applicable.**
9	**Termination**	**There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.**
10	**Data for main Option clause**	
A	**Priced contract with 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	**2 (Two) weeks.**
11	**Data for Option W1**	
W1.1	The *Adjudicator*	**the person selected from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of Adjudicators by the Party intending to refer a dispute to him. (see www.ice-sa.org.za). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the *Adjudicator nominating body*.**
W1.2(3)	The *Adjudicator nominating body* is:	**the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the Institution of Civil Engineers (London) (see www.ice-sa.org.za) or its successor body.**
W1.4(2)	The *tribunal* is:	**arbitration**
W1.4(5)	The *arbitration procedure* is	**the latest edition of Rules for the Conduct**

		of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.
	The place where arbitration is to be held is	**KwaZulu Natal, 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	**Base date for escalation will be the month prior to the tender closing date. The price will be fixed for the first 12 months there after CPA will apply annually.**

The proportions used to calculate the Price Adjustment Factor are:

proportion	**linked to index for**	**Index prepared by**
0.	**[●]**	**[●]**
0.	**[●]**	**[●]**
0.	**[●]**	**[●]**
0.	**[●]**	**[●]**
0.	**[●]**	**[●]**
0.15	**non-adjustable**	
1.00		

X2	**Changes in the law**	**There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.**
X13	**Performance bond**	
X13.1	The amount of the performance bond is	**R [●]**
X17	**Low service damages**	
X17.1	The *service level table* is in	

Low service description	Damages
Unable to comply with 24 hours callout response time for critical situations	20% of Task order value
Delays to submit service/inspection reports after completion of service/inspection	10% of Task order value
Poor workmanship	20% of the Task order value

X18	**Limitation of liability**	
X18.1	The *Contractor*'s liability to the *Employer* for indirect or consequential loss is limited to	**R0.0 (zero Rand)**
X18.2	For any one event, the *Contractor*'s liability to the *Employer* for loss of or damage to the *Employer*'s property is limited to	**the amount of the deductibles relevant to the event**
X18.3	The *Contractor*'s liability for Defects due to his design of an item of Equipment is limited to	**The greater of** • **the total of the Prices at the Contract Date** **and** • **the amounts excluded and unrecoverable from the *Employer*'s insurance (other than the resulting physical damage to the *Employer*'s property which is not excluded) plus the applicable deductibles**
X18.4	The *Contractor*'s total liability to the *Employer*, for all matters arising under or in connection with this contract, other than the excluded matters, is limited to	**the total of the Prices other than for the additional excluded matters.** **The *Contractor's* total liability for the additional excluded matters is not limited.** **The additional excluded matters are amounts for which the *Contractor* is liable under this contract for** • **Defects due to his design, plan and specification,** • **Defects due to manufacture and fabrication outside the Affected Property,** • **loss of or damage to property (other than the *Employer*'s property, Plant and Materials),** • **death of or injury to a person and** • **infringement of an intellectual property**

		right.
X18.5	The *end of liability date* is	**5 years after the end of the *service period*.**
X19	**Task Order**	
X19.3	**Delay Damages**	**10% applicable to each Task Order value.**
X19.5	The *Contractor* submits a Task Order programme to the *Service Manager* within	**3 (Three) days of receiving the Task Order**
Z	**The *additional conditions of contract* are**	**Z1 to Z14 always apply.**

Z1 Cession delegation and assignment

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

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

Z2 Joint ventures

Z2.1 If the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations then these persons or organisations are deemed to be jointly and severally liable to the *Employer* for the performance of this contract.

Z2.2 Unless already notified to the *Employer*, the persons or organisations notify the *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 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 Service.

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 Confidentiality

Z4.1 The *Contractor* does not disclose or make any information arising from or in connection with this contract available to Others. This undertaking does not, however, apply to information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time). Should the *Contractor* disclose information to Others in terms of clause 25.1, the *Contractor* ensures that the provisions of this clause are complied with by the recipient.

Z4.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Service Manager*.

Z4.3 In the event that the *Contractor* is, at any time, required by law to disclose any such information which is required to be kept confidential, the *Contractor*, to the extent permitted by law prior to disclosure, notifies the *Employer* so that an appropriate protection order and/or any other action can be taken if possible, prior to any disclosure. In the event that such protective order is not, or cannot, be obtained, then the *Contractor* may disclose that portion of the information which it is required to be disclosed by law and uses reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed.

Z4.4 The taking of images (whether photographs, video footage or otherwise) of the 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*.

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

Z5 Waiver and estoppel: Add to core clause 12.3:

Z5.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the *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.

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

Z6.1 The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *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 2014 (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.

Z6.2 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.

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

Z7.1 Within one week of receiving a payment certificate from the *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.

Z7.2 If the *Contractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Employer* is to make a payment is extended by a period equal in time to the delayed submission of the correct tax invoice. Interest due by the *Employer* in terms of core clause 51.2 is then calculated from the delayed date by when payment is to be made.

Z7.3 The *Contractor* (if registered in South Africa in terms of the companies Act) is required to comply with the requirements of the Value Added Tax Act, no 89 of 1991 (as amended) and to include the *Employer*'s VAT number 4740101508 on each invoice he submits for payment.

Z8 Notifying compensation events

Z8.1 Delete the last paragraph of core clause 61.3 and replace with:

If the *Contractor* does not notify a compensation event within eight weeks of becoming aware of the event, he is not entitled to a change in the Prices.

Z9 *Employer's* limitation of liability

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

Z9.2 The *Contractor*'s entitlement under the indemnity in 82.1 is provided for in 60.1(12) and the *Employer*'s liability under the indemnity is limited to compensation as provided for in core clause 63 and X19.11 if Option X19 Task Order applies to this contract.

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

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

Z11 Ethics

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

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

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

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

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

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

with an investigation.

Z12 Insurance

Z_12_.1 Replace core clause 83 with the following:

Insurance cover 83

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

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

INSURANCE TABLE A

Insurance against	Minimum amount of cover or minimum limit of indemnity
Loss of or damage caused by the *Contractor* to the *Employer*'s property	The replacement cost where not covered by the *Employer*'s insurance. The *Employer*'s policy deductible as at Contract Date, where covered by the *Employer*'s insurance.
Loss of or damage to Plant and Materials	The replacement cost where not covered by the *Employer*'s insurance. The *Employer*'s policy deductible as at Contract Date, where covered by the *Employer*'s insurance.
Loss of or damage to Equipment	The replacement cost where not covered by the *Employer*'s insurance. The *Employer*'s policy deductible as at Contract Date, where covered by the *Employer*'s insurance.
The *Contractor*'s liability for 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	Loss of or damage to property The replacement cost Bodily injury to or death of a person The amount required by the applicable law.
Liability for death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract	The amount required by the applicable law

Z 12.2 Replace core clause 86 with the following:

Insurance by the *Employer*

86

86.1 The *Employer* provides the insurances stated in the Insurance Table B

INSURANCE TABLE B

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

Z13 Intellectual Property – Eskom owning Intellectual Property

"**Intellectual Property"** means (a) patents, trade marks, service marks, rights in designs, trade names, trade secrets, know how, copyrights and topography rights, in each case whether registered or not; (b) applications for registration of any of them; (c) rights under licences and consents in relation to any of them; (d) all forms of protection of a similar nature or having equivalent or similar effect to any of them which may subsist anywhere in the world.

"Background Intellectual Property" means any and all Intellectual Property rights that are not Foreground Intellectual Property, and are owned or controlled by the relevant party or licensed to the relevant party prior to or outside of the *services* but required for the purposes of the *services*.

"Foreground Intellectual means all Intellectual Property rights and other matter capable of being the subject of intellectual property rights that is conceived, first reduced to practice or writing or developed in whole or in substantial part in the course of the execution of the

Property" *services* and rights which are developed substantially as a result of the *services*. Any *services* that will be developed, changed, modified and/or improved specifically for the Purposes will be Foreground Intellectual Property. Any data or any other information relating to *Employer's* proprietary information generated from the use of the *Contractor 's* Background Intellectual Property.

Z13.1 The *Contractor* retains ownership of all Background Intellectual Property rights made by or on behalf of the *Contractor* as part of the *services* in information or material it uses in carrying out the *services*.

Z13.2 All Foreground Intellectual Property rights, contained in any developed materials which are created by the *Contractor* or on behalf of the *Contractor*, for the purposes of and in support of the execution of the *services* (*Employer*'s IP) vest with the *Employer*.

Z13.3 Any data or any other information relating to *Employer's* proprietary information generated from the use of the *Contractor's* Background Intellectual Property, the copyright therein shall be owned by the *Employer*.

Z13.4 The *Contractor* acknowledges that all rights, title, and interest in and to the Foreground Intellectual Property that may result or originate from or be developed in execution of the *services* vests in the *Employer* and that the *Contractor* has no claim of any nature in and to the Foreground Intellectual Property.

Z13.5 The *Contractor* ensures that a copyright notice is incorporated or embossed or labelled on the Foreground Intellectual Property, where the *Employer* is reflected as the owner of the Foreground Intellectual Property.

Z13.6 The *Contractor* is obliged to provide Foreground Intellectual Property manufacturing documents, designs, processes and/or specifications to the *Employer* before/on the *completion date]*.

Z13.7 The *Contractor* procures that each Sub-*Contractor* executes all and any *services*, and takes all and any other actions as may be required, in order to give effect to this Agreement.

Z13.8 The *Employer* retains all Background Intellectual Property rights in all documents made by or on behalf of the *Employer* including all documents and requirements provided prior to or during the execution of the *services*. The *Contractor* does not, without the written consent, of the *Employer*, copy, use or issue to a third party any of the *Employer's* Background Intellectual Property documents and requirements except for the purposes of executing the *services*.

Z13.9 Either party procures that any third party executes confidentiality undertakings not to disclose to any other third parties, any of the *Employer*'s Background Intellectual Property and IP documents and requirements at all, in respect of the *Employer*, or the Background Intellectual Property, in respect of the *Contractor*.

Z13.10 Third Party Claims:

Z13.10.1 In the event of any claims being made or actions brought against the *Employer*, on the ground that the *Contractor* infringed any patent, trade mark or copyright, the *Contractor* is notified thereof and at its own expense, conducts all negotiations in consultation with the *Employer* for the settlement of the claim and litigation that may arise from such alleged infringement, provided that the *Employer* will not bear any financial burden or losses.

Z13.10.2 Save where the *Contractor* fails to take over the conduct of the negotiation or

litigation within a reasonable time of the notification of the alleged infringement, the *Employer* does not make any admission which might be prejudicial to the *Contractor*]'s position. The *Employer*, at the request and the cost of the *Contractor* affords it all reasonable technical assistance that the *Employer* is able to provide for the purpose of contesting any such claim or action.

Z13.10.3 Should it be held in any such action that any such protected rights have been infringed, as definitely stated by a judgment of the court before which the action is brought, the *Contractor*, at its own expense and in consultation with the*Employer*, either:

a. procures for *Employer* the right to continue to use the affected item or design, or
b. replaces the said affected item or design with a non-infringing item, or
c. provides a design of equivalent quality or modify such affected item or design so as to make it non-infringing without affecting the quality.

Z13.10.4 Notwithstanding anything contained in this contract, the foregoing sets forth the entire responsibility of *Contractor* with respect to claims relating to infringement.

Z13.10.5 Where it is alleged that the *Employer* has committed an infringement as intended vis-à-vis the *Contractor* as set out in the third party intellectual property infringement clause, the *Employer* has the same rights and obligations as the *Contractor*, mutatis mutandis, as regards such alleged infringement.

Z13.10.6 The *Contractor* herewith indemnifies the *Employer* and undertakes to keep the *Employer* indemnified against all claims of whatsoever nature, real or imagined, which may be made against the *Employer* arising from the infringement of any third party intellectual property rights.

Z14 Asbestos

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

AAIA means approved asbestos inspection authority.

ACM means asbestos containing materials.

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

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

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

OEL means occupational exposure limit.

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

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

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

SANAS means the South African National Accreditation System.

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

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

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

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

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

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

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

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

C1.2 Contract Data

Part two - Data provided by the *Contractor*

Notes to a tendering contractor:

1. Please read both the both the NEC3 Term Service Contract April 2013 and the relevant parts of its Guidance Notes (TSC3-GN)[3] in order to understand the implications of this Data which the tenderer is required to complete.
2. The number of the clause which requires the data is shown in the left hand column for each statement however other clauses may also use the same data.
3. Where a form field like this [ ] appears, data is required to be inserted relevant to the option selected. Click on the form field ***once*** and type in the data. Otherwise complete by hand and in ink.

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

Clause	Statement	Data
10.1	The *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 people are: 1 Name: Job: Responsibilities: Qualifications: Experience:	

[3] Available from Engineering Contract Strategies Tel 011 803 3008 Fax 086 5391902 or www.ecs.co.za

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**
C	**Target contract with price list**	
11.2(12)	The *price list* is in	
11.2(20)	The tendered total of the Prices is	**R**
E	**Cost reimbursable contract**	
11.2(12)	The *price list* is in	

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*	**[●]**

C2.1 Pricing assumptions: Option A

How work is priced and assessed for payment

Clause 11 in NEC3 Term Service Contract (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*

Before preparing the *price list*, both the *Employer* and tendering contractors should read the TSC3 Guidance Notes pages 14 and 15. In an Option A contract, either Party may have entered items into the *price list* either as a process of offer and acceptance (tendering) or by negotiation depending on the nature of the *service* to be provided. Alternatively the *Employer*, in his Instructions to Tenderers or in a Tender Schedule, may have listed some items that he requires the *Contractor* to include in the *price list* to be prepared and priced by him.

It is assumed that in preparing or finalising the *price list* the *Contractor:*

- Has taken account of the guidance given in the TSC3 Guidance Notes relevant to Option A;
- Understands the function of the Price List and how work is priced and paid for;
- Is aware of the need to link operations shown in his plan to items shown in the Price List;
- Has listed and priced items in the *price list* which 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;
- Has priced work he decides not to show as a separate item within the Prices or rates of other listed items in order to fulfil the obligation to complete the *service* for the tendered total of the Prices.
- Understands there is no adjustment to items priced as lump sums if the amount, or quantity, of work within that item later turns out to be different to that which the *Contractor* estimated at time of tender. The only basis for a change to the (lump sum) Prices is as a result of a compensation event.

Format of the *price list*

(From the example given in an Appendix within 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*

Item nr	Description	Unit	Expected Quantity	Rate	Price
1	Bill no 1 – General Preliminary ALL work to be done by the Appointed *Contractor* including Safety Compliance Services and emergency response Eskom is an ISO 9001, 18001 registered company and requires from the *Contractor* to adhere to these				
1.1	To provide Eskom with a Safety File as required and to maintain the fire protection systems throughout the contract period as contemplated	Sum	1		
1.2	Provide contract employees with appropriate Personal Protective Equipment including (as a minimum) for the following work categories:				
1.2.1	Inspection, Servicing and Testing as per the specification.	Sum	1		
1.4	The *Contractor* shall compile a file, in duplicate and in electronic format (as described) which shall be kept up to-date throughout the contract period and one physical and one electronic copy returned when the contract period has expired.	Sum	1		
Total Bill 1					

Bill 2: <u>Monthly</u> Inspect, conduct fault-finding and Restore Faults and Alarms on Station Fire Alarm Systems:						
Item nr	**Description**	**Unit**	**Expected Quantity**	**Rate**	**Price for Year 1**	**Total for 60 months**
2	Monthly Inspection, Fault-finding & Repairing of Faults and Alarm intervals For the inspection, fault-finding & Restoring of Faults & Alarms of the Station Fire Alarm System (as per scope) inclusive of all supervision, labour, materials, and traveling costs					
2.1	**Station Fire Alarm Systems:**					
2.1.1	Equipment Room Aritech Fire Alarm Panel	Ea	1			
2.1.2	Equipment Room Aritech Repeater Panel	Ea	1			
2.1.3	Visitors Center Fire Alarm Panel	Ea	1			
2.1.4	Outside Store Fire Alarm Panel	Ea	1			
2.1.5	Headrace Fire Alarm Panel	Ea	1			
2.1.6	Surface Building Fire Alarm Panel	Ea	1			
2.2	**Transformer Fire Alarm Systems:**					
2.2.1	Generator Transformer 1 Fire Alarm Panel	Ea	1			
2.2.2	Generator Transformer 2 Fire Alarm Panel	Ea	1			
2.2.3	Generator Transformer 3 Fire Alarm Panel	Ea	1			
2.2.4	Generator Transformer 4 Fire Alarm Panel	Ea	1			
2.2.5	Station Transformer 1 Fire Alarm Panel	Ea	1			
2.2.6	Station Transformer 2 Fire Alarm Panel	Ea	1			
2.2.7	Service Transformer 1 Fire Alarm Panel	Ea	1			
2.2.8	Service Transformer 2 Fire Alarm Panel	Ea	1			

2.3	**Video Fire Alarm & Smoke Detection (VFSD) System:**					
2.3.1	Control Room Client PC Alarm Monitor	Ea	1			
2.3.2	Security Room Client PC Alarm Monitor	Ea	1			
2.3.3	Equipment Rack	Ea	1			
2.3.4	HUB Enclosures	Ea	5			
2.3.5	Camera Enclosures	Ea	5			
2.3.6	Cameras	Ea	5			
2.3.7	Lights	Ea	5			
2.4	**Aspiration Units:**					
2.4.1	Unit 1 Generator Aspiration Unit	Ea	1			
2.4.2	Unit 2 Generator Aspiration Unit	Ea	1			
2.4.3	Unit 3 Generator Aspiration Unit	Ea	1			
2.4.4	Unit 4 Generator Aspiration Unit	Ea	1			
2.4.5	Lift Shaft Aspiration Unit	Ea	1			
2.5	**Beam Units:**					
2.5.1	Unit 1 Spherical Valve Beam Unit	Ea	1			
2.5.2	Unit 2 Spherical Valve Beam Unit	Ea	1			
2.5.3	Unit 3 Spherical Valve Beam Unit	Ea	1			
2.5.4	Unit 4 Spherical Valve Beam Unit	Ea	1			
Total Bill 2						

Bill 3: <u>3-Monthly</u> inspect and service fire alarm systems:						
Item nr	**Description**	**Unit**	**Expected Quantity**	**Rate**	**Price for Year 1**	**Total for 60 months**
3	3-Monthly Inspection & Servicing intervals For the inspection & service of fire alarm system (as per scope) inclusive of all supervision, labour, materials, and traveling costs of:					
3.1	**Station Fire Alarm Systems:**					
3.1.1	Equipment Room Aritech Fire Alarm Panel	Ea	1			
3.1.2	Equipment Room Aritech Repeater Panel	Ea	1			
3.1.3	Visitors Center Fire Alarm Panel	Ea	1			
3.1.4	Outside Store Fire Alarm Panel	Ea	1			
3.1.5	Headrace Fire Alarm Panel	Ea	1			
3.1.6	Surface Building Fire Alarm Panel	Ea	1			
3.2	**Transformer Fire Alarm Systems:**					
3.2.1	Generator Transformer 1 Fire Alarm Panel	Ea	1			
3.2.2	Generator Transformer 2 Fire Alarm Panel	Ea	1			
3.2.3	Generator Transformer 3 Fire Alarm Panel	Ea	1			
3.2.4	Generator Transformer 4 Fire Alarm Panel	Ea	1			
3.2.5	Station Transformer 1 Fire Alarm Panel	Ea	1			
3.2.6	Station Transformer 2 Fire Alarm Panel	Ea	1			
3.2.7	Service Transformer 1 Fire Alarm Panel	Ea	1			
3.2.8	Service Transformer 2 Fire Alarm Panel	Ea	1			
3.3	**Video Fire Alarm & Smoke Detection (VFSD) System:**					

3.3.1	Control Room Client PC Alarm Monitor	Ea	1			
3.3.2	Security Room Client PC Alarm Monitor	Ea	1			
3.3.3	Equipment Rack	Ea	1			
3.3.4	HUB Enclosures	Ea	17			
3.3.5	Camera enclosures	Ea	54			
3.3.6	Cameras	Ea	54			
3.3.7	Lights	Ea	54			
3.4	**Aspiration Units:**					
3.4.1	Unit 1 Generator Aspiration Unit	Ea	1			
3.4.2	Unit 2 Generator Aspiration Unit	Ea	1			
3.4.3	Unit 3 Generator Aspiration Unit	Ea	1			
3.4.4	Unit 4 Generator Aspiration Unit	Ea	1			
3.4.5	Lift Shaft Aspiration Unit	Ea	1			
3.5	**Beam Units:**					
3.5.1	Unit 1 Spherical Valve Beam Unit	Ea	1			
3.5.2	Unit 2 Spherical Valve Beam Unit	Ea	1			
3.5.3	Unit 3 Spherical Valve Beam Unit	Ea	1			
3.5.4	Unit 4 Spherical Valve Beam Unit	Ea	1			
Total Bill 3						

Bill 4: <u>Yearly</u> service of fire detection systems:						
Item nr	**Description**	**Unit**	**Expected Quantity**	**Rate**	**Price for Year 1**	**Total for 60 months**
4	Yearly Service intervals For the servicing of fire detection systems inclusive of all supervision, labour, materials, and traveling costs of:					
4.1	**Fire Alarm Systems:**					
4.1.1	**Station Fire Alarm Systems:**					
4.1.1.1	Equipment Room Aritech Fire Alarm Panel	Ea	1			
4.1.1.2	Equipment Room Aritech Repeater Panel	Ea	1			
4.1.1.3	Visitors Center Fire Alarm Panel	Ea	1			
4.1.1.4	Outside Store Fire Alarm Panel	Ea	1			
4.1.1.5	Headrace Fire Alarm Panel	Ea	1			
4.1.1.6	Surface Building Fire Alarm Panel	Ea	1			
4.1.2	**Transformer Fire Alarm Systems:**					
4.1.2.1	Generator Transformer 1 Fire Alarm Panel	Ea	1			
4.1.2.2	Generator Transformer 2 Fire Alarm Panel	Ea	1			
4.1.2.3	Generator Transformer 3 Fire Alarm Panel	Ea	1			
4.1.2.4	Generator Transformer 4 Fire Alarm Panel	Ea	1			
4.1.2.5	Station Transformer 1 Fire Alarm Panel	Ea	1			
4.1.2.6	Station Transformer 2 Fire Alarm Panel	Ea	1			
4.1.2.7	Service Transformer 1 Fire Alarm Panel	Ea	1			
4.1.2.8	Service Transformer 2 Fire Alarm Panel	Ea	1			

4.1.3	**Video Fire Alarm & Smoke Detection (VFSD) System:**					
4.1.3.1	Control Room Client PC Alarm Monitor	Ea	1			
4.1.3.2	Security Room Client PC Alarm Monitor	Ea	1			
4.1.3.3	Equipment Rack	Ea	1			
4.1.3.4	HUB Enclosures	Ea	17			
4.1.3.5	Camera enclosures	Ea	54			
4.1.3.6	Cameras	Ea	54			
4.1.3.7	Lights	Ea	54			
4.1.4	**Aspiration Units:**					
4.1.4.1	Unit 1 Generator Aspiration Unit	Ea	1			
4.1.4.2	Unit 2 Generator Aspiration Unit	Ea	1			
4.1.4.3	Unit 3 Generator Aspiration Unit	Ea	1			
4.1.4.4	Unit 4 Generator Aspiration Unit	Ea	1			
4.1.4.5	Lift Shaft Aspiration Unit	Ea	1			
4.1.5	**Beam Units:**					
4.1.5.1	Unit 1 Spherical Valve Beam Unit	Ea	1			
4.1.5.2	Unit 2 Spherical Valve Beam Unit	Ea	1			
4.1.5.3	Unit 3 Spherical Valve Beam Unit	Ea	1			
4.1.5.4	Unit 4 Spherical Valve Beam Unit	Ea	1			
Total Bill 4						

Bill 5: <u>Yearly</u> functional test of fire detectors:						
Item nr	**Description**	**Unit**	**Expected Quantity**	**Rate**	**Price for Year 1**	**Total for 60 months**
5	Yearly Functional Test intervals for the functional testing of fire detectors inclusive of all supervision, labour, and traveling costs of:					
5.1	Aritech Fire Detectors	Ea	518			
5.2	VFSD Detectors (Cameras)	Ea	54			
Total Bill 5						

Section 6: Reactive Maintenance					
Item nr	**Description**	**Unit**	**Expected Quantity**	**Rate**	**Price**
6.	Bill No 12 – Pricing for Reactive maintenance per severity level conformance Severity levels are defined in the scope of works and must be priced for availability and responses times indicated. Response included, personnel with the correct level of expertise, reliable transport with major critical	24/7	P/hour		
6.1	Critical Level: When performance failures could result in a life or death situation and/or when performance failures can result in major damage to assets which will directly impact on the availability and performance of Essential Functions required for Power Generation. This level calls for immediate response (≤ 1 hour)	2/h	25		
6.2	Level 1 During working hours while turbines are in Generating mode and/or standby support outside of working hours where activities must be performed by highly qualified personnel or being supervised by one and/or when on-site critical spares holding is required to avoid failure. This level calls for a response within 1 to 3 hours	/h	25		
6.3	Level 2 Normal planned repair functions actioned during normal working hours by adequately trained personnel for work which have some degree of built- in redundancy and reserve capacity built in as part of the design, which require maintenance and support only during working hours and which require limited on-site spares holding. This level is requires an approved order, must be planned and must be performed during the planned week.	/h	50		
6.4	List of rates for additional resources **(Office Hours)**				
6.4.1	Supervisor of works	/h	5		
6.4.2	Artisan	/h	5		
6.4.3	Skilled Worker	/h	5		
6.4.4	Unskilled Worker	/h	5		
Total Bill 6					

Bill 7: Spares:				
Item nr	**Description**	**Unit**	**Expected Quantity**	**Total**
7	For the supply of the following spares:	each		
7.1	UV Infrared Explosion Proof Flame Detector and Interface IR3 _C3BRS-CC-452-080-C3BRS-CC-452-085	each	6	
7.2	Edwards FHSD8015-99 Laser Sense 10 Detector	each	4	
7.3	Aritech Panel FP1264C for TRFR and Main surface building	each	4	
7.4	Moxa Transio – TFC -142-S Serial to Fibre converter TCF-142-S- ST	each	3	
7.5	**Long:** Fire Resistant Cable, PH 30, 4 Core x 1.5mm Square, Operating Voltage: 300/500V, Maximum Operating Temperature: 125 Degree Celsius, Stranded Plain copper Class 5 Conductor, Standard Outer	m	300	
7.6	Ziton FDR50 – EZ Addressable loop powered reflective Beam Detector (50M) Brand: Ziton Part No.: 1108010 Categories: Detection	each	4	
7.7	Filter Cartridge, Type 9-30755- P/LaserSense Nano/25/100 for LaserSense Smoke Detector, Width 20mm x Height 44mm x Depth 77mm	each	30	
7.8	Aritech Panel FP12** Used as repeater	each	1	
7.9	950 Series XP95 Optical Detector, DP951	each	100	
7.10	Moxa – SFP – 1GLXLC V1.1	each	2	
7.11	Aritech Conventional Panel for Head Race 1X-F4-xx	each	3	

7.12	Moxa EDS-510E-3GTXSFP V1.0.1	each	3	
7.13	Power Supply for Aritech Panel FR1264N03,950 Protocol PS2000	each	9	
7.14	Network Card for Aritech Panel FR1264N03,950 Protocol NC2011	each	3	
7.15	650 Series Optical Smoke Detector, DP652	each	20	
7.16	SigniFire Video Analytic Camera, 2,8mm Lens complete	each	5	
7.17	Laser Sense 10 High Sensitivity Smoke Detector FHSD8015-99 English	each	4	
7.18	Aritech – 950 Mounting Base	each	6	
7.19	Field Server for Aritech Panel FR1264N03, 950 Protocol FS-B2010	each	1	
7.20	Conventional Fire Panel Language Kit	each	1	
7.21	Apollo Discovery Multi-Sensor (Optical/Heat) DP991T	each	10	
7.22	Sounder (KLAXON) TCC-0001	each	6	
7.23	Wall Sounder BF430C/CC/DR/65	each	6	
7.24	Aritech – Conventional Panel (FRG2064C-99)- global repeater	each	1	
7.25	Aritech Host CPU BD (FC2012)	each	4	
7.26	Battery CDD28JRY	each	6	
7.27	Apollo – Area Sounder Visiual Indicator Red (EN54-3:2001)	each	8	
7.28	Discovery Manual Call Point with Isolator (EN4-11:2001)	each	8	
7.29	PM86X series27.6 Vdc Switch Mode Power Supply	each	4	

7.30	5VDS 24V 5A Boxed PSU	each	4	
7.31	Moxa - Gigabit Managed Ethernet Switch; Input: 20; Output: 100; Specification: 20 10/100/1000BASET(X)	each	2	
7.32	Synaps Tech Sycall-R6847L	each	5	
7.33	Laser sensor	each	6	
7.34	Aritech Discovery Optical Smoke Detector DP991	each	30	
7.35	TYCO detector base (517.050.041)	each	5	
7.36	601P Conventional Optical Smoke Detector	each	5	
7.37	Aritech – FEP PCB (FEP2000N) FP2000	each	4	
7.38	Aritech – 16 Zone Extension Card (ZE2016)	each	5	
7.39	Aritech – SD2000	each	6	
7.40	Aritech – Keypad (KP2000) FP/FR1200/2000	each	7	
7.41	Aritech – Global RPTR (FRG 2064C-99) 16-642	each	1	
7.42	Aritech – LCD display for FP1200, FP12xx (LCD1200)	each	6	
7.43	Apollo - Sounder Control Unit XP95, 0956	each	5	
7.44	Aritech -Lead Acid Rechargeable Battery, BS131N	each	20	
7.45	Aritech - Lead Acid Rechargeable Battery, BS127N	each	20	
7.46	Aritech - Heat Detector, DT992	each	5	
7.47	Aritech - 2Loop Ext Card (LC1502), 1200/200	each	15	
7.48	Aritech - PSU PCB (PS1200N), FP1200C/FP2000C	each	7	
7.49	Aritech - Host CPU BD (FC2012) 1200/2000 SRS	each	7	
7.50	Moxa EDS-510E-3GTXSFP V1.0.1	each	3	
7.51	Power supply, type: avi 12v 5a dc ups, input: 230 v, output: 12 vdc	each	10	
7.52	Apollo Input /Output Unit SA4700-302APO	each	10	
7.53	Aritech Panel FP1264C for TRFR and Main surface building	each	4	

7.54	Aritech Replacement filter used for HSSD2 and Modulaser	each	30	
7.55	Fire Resistant Cable, PH 120, 4 Core x 1.5mm Square, Operating Voltage: 300/500V, Maximum Operating Temperature: 125 Degree Celsius, Stranded Plain copper Class 5 Conductor, Standard Outer Sheath: Red.	each	300	
7.56	Surge arrestor DG MOD 275	each	10	
7.57	Camera Flood light	each	10	
7.58	Delivery of spares to Drakensberg	each	1	
7.59	Cost plus percentage	percentage		
Total Bill 7				

SUMMARY

Item Nr	Description	Price
1	Bill No 1 - Preliminary	
2	Bill No 2 – Monthly inspection, fault-finding & Restoring of Faults & Alarms of the Station Fire Alarm Systems	
3	Bill No 3 – 3-Monthly inspection and servicing of fire alarm systems	
4	Bill No 4 – Annual servicing of fire detection systems	
5	Bill No 5 – Annual functional test of fire detectors	
6	Bill No 6 – Reactive Maintenance	
7	Bill No 7 – Spares	
	The total of the Prices	

PART 3: SCOPE OF WORK

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

C3.1: EMPLOYER'S SERVICE INFORMATION

Contents

1. Description of the *service*

1.1. Executive overview

Drakensberg Pumped Storage Power Station has a nominal generating capacity of 1000MW which is produced from four 250MW Francis type vertical turbine generator sets. The power station is situated underground, in the Northern Drakensberg Mountains in KwaZulu-Natal, approximately 30km from the town of Bergville. Its four units were commissioned between 1979 and 1981.

The GPS Coordinates for the Affected Property are as follows:
-28.56468 (Latitude), 29.08408 (Longitude)

This contract makes provision for routine and non-routine maintenance of the fire detection systems at Drakensberg Power Station to ensure reliable operation of the Affected Property fire detection and the gas suppression fire detection systems. The routine maintenance includes regular inspection, servicing and testing of the identified fire detection systems and non-routine maintenance involves service calls that are defined as maintenance and repair work requirements.

This contract constitutes a 5-year agreement that makes provision for the supply of labour, Equipment and materials, parts, supervision and transportation necessary to maintain the fire detection systems at Drakensberg Power Station in a serviceable condition as required by the relevant fire codes, regulations and standards.

This contract is managed by a SAQCC Fire Accredited *Contractor* (SAQCC Fire Maintainer) who submits detailed reports following the inspection, servicing and testing of the fire detection systems.

1.2. Employer's requirements for the *service*

1.2.1. The *Contractor's* scope of supply

The scope of supply includes the following:

a) Make provision for the supply of labour, equipment and materials, parts, supervision and transportation for the completion of the *services*.

b) Repair any standing defects identified during the inspections. Failure to repair defects during the initial inspection, must be repaired during the next scheduled inspection.

c) The services are managed by a SAQCC Fire Accredited *Contractor* and the relevant resources that will perform the services have valid SAQCC Fire registration (Maintainer/Commissioner and Installer). Proof of SAQCC Fire registration for the relevant resources is submitted to the *Service Manager*. They are to be accredited Maintainer/Commissioner and Installer.

d) *The Contractor* ensures that all the resources are accredited with the Fire Detection System and the Gas Suppression Systems OEM certifications for the systems that exist at the Affected Property.

e) Resources working on gas suppression systems will have relevant SAQCC Fire Gas Suppression certification accreditations as follows: Gas Suppression Maintainer/Commissioner and Installer, including the Gas Suppression OEM certification for the system and the gaseous types used at the Affected Property.

f) The *Contractor* submits detailed reports on the completion of inspections, servicing and tests for the respective components covered during each service period and also for all the service calls that are attended to.

g) The *Contractor* provides certification on completion of inspections, servicing, and tests on all the components of FDS, the FDS as system and interfaces to 3rd party systems as specified in the 240-56737654 Inspection, Testing and Maintenance of Fire Detection Systems Standard and the gas suppression systems based 240-56737654 Inspection, Testing and Maintenance of Fire Detection Systems Standard.

h) The *Contractor* supplies, third-party test certificates for all materials and consumables used for the corrective, testing, repairs and routine maintenance activities.

i) The *Contractor* supplies Material certificates and quantities used, for items that are supplied and utilised by the *Contractor* in rendering the services, i.e. the certificate and quantity for smoke detector test spray.

j) The *Contractor* is responsible for the supply of PPE (Personal Protective Equipment) for their own personnel working on the Affected Property.

k) The *Contractor* is responsible for the supply of the Equipment used for the repairs, testing and inspections associated with the preventative and the corrective maintenance activities on the fire detection system and gas suppression systems on the Affected Property.

l) The *Contractor* is responsible for the supply of the Plant and Materials such as the spares for all the components of the fire detection system and gas suppression systems to enable and support the preventative and the corrective maintenance activities on the Affected Property.

m) In the event that spares are obsolete, the *Contactor* shall notify the *Service Manager* and propose the equivalent alternative subject to prior approval of the *Employer.* Any such modification will be processed through *Employer's* internal Engineering process. The *Contractor* must comply with the required requirements for approval including providing the relevant documentation required.

n) The *Contractor* submits the safety file prior to the start of the *service* for acceptance by the *Service Manager*.

1.2.2. The *Contractor* Provide the Service

The following is a summary of the services on the fire detection system:

Task	Equipment/Systems	Frequency
Inspection, fault-finding, servicing, repair and clearing of standing faults, disabled devices and alarms	Aritech Fire Detection, Video Fire & Smoke Detection (VFSD), Beam Detectors and Aspiration Systems	Monthly
Inspection and Servicing	Aritech Fire Detection, Video Fire & Smoke Detection (VFSD), Beam Detectors and Aspiration Systems	3-Monthly
Servicing	Aritech Fire Detection, Video Fire & Smoke Detection (VFSD), Beam Detectors and Aspiration Systems	Yearly
Functional Testing	Aritech Fire Detection and Video Fire & Smoke Detection (VFSD) Systems	Yearly

All *services* performed on the Affected Property are in accordance with the *Employers* approved procedures and instructions.

The *Service Manager* issues for each *service* a Preventative Maintenance (PM) Work Order for to the *Contractor* to fill in and complete. The *Contractor* attached relevant the *service* reports on completion of the respective *service*.

Any anomalies that are noticed by the *Contractor* during the execution of the *services* are recorded and brought to the *Service Manager's* attention immediately.

To Provide the Work, the *Contractor* executes the following to ensure the highest level of reliability and availability through the following activities:

1.2.2.1. Monthly

a) The *Contactor* performs the inspection, fault-finding, servicing, repair and clearing of standing faults, disabling devices and alarms on Aritech Fire Detection and Video Fire & Smoke Detection (VFSD) Systems

- The Aritech Fire Alarm System for the Affected Property as is detailed below are subjected to monthly inspection, fault-finding and clearing of faults and the clearing of the disabled devices by the *Contractor*. These include panels for the following areas:
  - Surface Building Stores
  - Headrace
  - Surface Administration Building
  - Visitors Centre
  - Power House – Equipment Room
    - Main Aritech Panel
    - Aritech Repeater Panel
    - Unit 1 Generator Aspiration Unit
    - Unit 2 Generator Aspiration Unit
    - Unit 3 Generator Aspiration Unit
    - Unit 4 Generator Aspiration Unit
    - Lift Shaft Aspiration Unit
    - Unit 1 Beam Detector
    - Unit 2 Beam Detector
    - Unit 3 Beam Detector
    - Unit 4 Beam Detector
  - Transformer Panels
    - Generator Transformer 1 Panel
    - GeneratorTransformer 2 Panel
    - Generator Transformer 3 Panel
    - Generator Transformer 4 Panel

- Service Transformer 1 Panel
- Service Transformer 2 Panel
- Station Transformer 1 Panel
- Station Transformer 2 Panel

- The Video Fire & Smoke Detection (VFSD) System for the Affected Property as is detailed below are subjected to monthly inspection, fault-finding and clearing of the faults and clearing of the disabled devices by the *Contractor*.
  - Control Room Client PC Alarm Monitor
  - Security Office Client PC Alarm Monitor
  - Hub Enclosures
  - Camera Enclosures
  - Cameras
  - Lights

- Monthly inspection, fault-finding, servicing, repair and clearing of standing faults, and clearing of the disabled devices and alarms comprise of the following activities by the *Contractor*:

  - **Fire Alarm Systems**
    - Before start of any work, obtain the status condition of all the panels, record the status condition of all panels, record faulty device reference numbers, zones and the specific fault detail that are evident on the panels. The status condition before and after work is captured by the *Contractor* and submitted in a detailed report to the *Service Manager*.
    - Perform fault-finding on the panels that have standing faults and alarms to determine the cause of the faults and the alarms.
    - Proceed by clearing any standing faults and alarms.
    - Repair any standing defects identified during the inspections. Failure to repair defects during the initial inspection, must be repaired during the next scheduled inspection.
    - Liaise with the *Service Manager* on the required spares and the action to be taken to clear any faults that need replacement of spare items.
    - The outcome of the monthly inspection, fault-finding, servicing & repair and clearance of any standing faults and alarms on the fire detection panels are captured in a detailed report that is submitted by the *Contractor* to the *Service Manager*. This report at a minimum contains the findings of the inspection, referenced the faulty devices with the specific device number, causes of the faults, action taken to clear the faults, servicing and any recommendations that may transpire from the service.

  - **Video Fire & Smoke Detection (VFSD) System**
    - Before start of any work, obtain the status condition of the VFSD System by recording on the Client PC in the Control Room any faulty devices on the system, record faulty device reference numbers, zones and the specific fault detail that are evident on the panels. The status condition of the VFSD System at the Head Race is captured separately. The status condition before and

after work is captured by the *Contractor* and is submitted in a detailed report to the *Service Manager*.

- Perform fault-finding on the VFSD System that have standing faults and alarms to determine the cause of the faults and the alarms.
- Proceed by clearing any standing faults and alarms.
- Liaise with the *Service Manager* on the required spares and the action to be taken to clear any faults that need replacement of spare items.
- The outcome of the monthly inspection, fault-finding, servicing & repair and clearance of any standing faults and alarms on the VFSD System are captured in a detailed report that is submitted by the *Contractor* to the *Service Manager*. This report at a minimum contains the findings of the inspection, referenced the faulty devices with the specific device number, causes of the faults, action taken to clear the faults, servicing and any recommendations that may transpire from the service.

- **Aspiration Systems**
  - Before start of any work, obtain the status condition of the Aspiration Systems by recording any faults and the specific fault detail that are evident on the panels. The status condition before and after work is captured by the *Contractor* and submitted in a detailed report to the *Service Manager*.
  - Perform fault-finding on the Aspiration Units that have standing faults and alarms to determine the cause of the faults and the alarms.
  - Proceed by clearing any standing faults and alarms.
  - Liaise with the *Service Manager* on the required spares and the action to be taken to clear any faults that need replacement of spare items.
  - The outcome of the monthly inspection, fault-finding, servicing & repair and clearance of any standing faults and alarms on the Aspiration Units are captured in a detailed report that is submitted by the *Contractor* to the *Service Manager.*

- **Beam Detectors**
  - Before start of any work, obtain the status condition of the Beam Detection Systems by recording any faults and the specific fault detail that are evident on the panels. The status condition before and after work is captured by the *Contractor* and submitted in a detailed report to the *Service Manager*.
  - Perform fault-finding on the Beam Detectors that have standing faults and alarms to determine the cause of the faults and the alarms.
  - Proceed by clearing any standing faults and alarms.
  - Liaise with the *Service Manager* on the required spares and the action to be taken to clear any faults that need replacement of spare items.
  - The outcome of the monthly inspection, fault-finding, servicing & repair and clearance of any standing faults and alarms on the Beam Detectors are captured in a detailed report that are submitted to the *Service Manager.*

1.2.2.2. 3 (Three) -Monthly

a) The *Contactor* performs the inspection and servicing of Aritech Fire Detection and Video Fire & Smoke Detection (VFSD) Systems

- The Aritech Fire Alarm System for the power station as detailed below are subjected to 3-monthly inspection and servicing. These include panels for the following areas:
  - Surface Building Stores
  - Headrace
  - Surface Administration Building
  - Visitors Centre
  - Power House – Equipment Room
    - Main Aritech Panel
    - Aritech Repeater Panel
    - Unit 1 Generator Aspiration Unit
    - Unit 2 Generator Aspiration Unit
    - Unit 3 Generator Aspiration Unit
    - Unit 4 Generator Aspiration Unit
    - Lift Shaft Aspiration Unit
    - Unit 1 Beam Detector
    - Unit 2 Beam Detector
    - Unit 3 Beam Detector
    - Unit 4 Beam Detector
  - Transformer Panels
    - Generator Transformer 1 Panel
    - Generator Transformer 2 Panel
    - Generator Transformer 3 Panel
    - Generator Transformer 4 Panel
    - Service Transformer 1 Panel
    - Service Transformer 2 Panel
    - Station Transformer 1 Panel
    - Station Transformer 2 Panel

- The Video Fire & Smoke Detection (VFSD) System for the power station as detailed below are subjected to 3-monthly inspection and servicing.
  - Control Room Client PC Alarm Monitor
  - Security Office Client PC Alarm Monitor
  - Hub Enclosures
  - Camera Enclosures
  - Cameras
  - Lights

- 3-Monthly inspection and servicing comprise of the following activities:

- **Aritech Fire Alarm Systems**
  - Before start of any work, obtain the status condition of all the panels, Record the status condition of all panels, record faulty device reference numbers, zones and the specific fault detail that are evident on the panels. The status condition before and after work is captured by the *Contractor* and submitted in a detailed report to the *Service Manager*.
  - Prepare for testing by reading through the logbook that is kept on the main panel in the control room. Any corrective action that has not yet been taken should be noted and carried out during this service.
  - Obtain a printout from the panel of all the faulty devices. Exchange faulty devices with replacement units, set to the same address. Where required, dirty sensors must be cleaned for re-use.
  - Obtain a printout of device analogue values. Compare these values to the permitted values for each point. Replace faulty devices or repair wiring.
  - Print out a complete system configuration from the panel software. Compare this to the system specification and verify that the system zoning, input-output mapping, and other settings have not changed.
  - Check the panel for any disabled devices and investigate the reason. Any faults must be rectified and any disabled devices must be enabled.
  - Alarm Test:
    - Test one sensor or call point in each zone. Activate each point in turn, checking that the sounders operate and that the panel reacts correctly. Note: Precautionary measures must be taken to prevent discharge of foam/water spray systems during alarm testing of the transformer panels as the systems will activate upon alarm testing of the panels.
    - For remote panels, verify that the alarm is also generated on the main panel in the equipment room and that the description is displayed on the SCADA.
  - Fault Test:
    - Remove one sensor in the system and check that the panel correctly reports the event.
    - For remote panels, verify that the fault indication is also generated on the main panel in the equipment room and that the description is displayed on the SCADA.
    - Accept the fault, replace the sensor and reset the panel.
  - Visually inspect control panels and components for any signs of moisture ingress, damage, deterioration or any abnormalities.
  - Check that all printed circuit boards are in a good condition, free of dust and securely mounted on the panel.
  - Examine batteries and their connections. Test batteries and determine if replacement is required or if batteries are still in good condition. Check if the battery replacement date will be passed before the next service and if so, replace the

battery. The age of the battery should be marked on it with a label. Sealed lead acid batteries should be replaced at least every 2 years.
- Restore the system to normal condition on completion of the service.

- **Video Fire & Smoke Detection (VFSD) System**
  - Before start of any work, obtain the status condition of the VFSD System for the Power Station and the Head Race, record the status condition of all panels, record faulty device reference numbers, zones and the specific fault detail that are evident on the panels. The status condition before and after work is captured by the *Contractor* and is submitted in a detailed report to the *Service Manager*.
  - Any corrective action that has not yet been taken should be noted and carried out during this service. Check on the Client PC in the control room if there are any faulty cameras that need to be investigated. Any faults must be rectified and any disabled devices must be enabled.
  - Alarm Test:
    - Test one camera in each zone. Activate each point in turn, checking that the main fire panel reacts correctly.
  - Fault Test:
    - Disconnect a camera in the system and check that the panel correctly reports the event.
    - Accept the fault, reconnect the camera and reset the panel
  - Visually inspect all HUB Enclosures and Camera Enclosures for any signs of moisture ingress, damage, deterioration or any abnormalities.
  - Visually inspect all cameras and lights for damage, deterioration or any abnormalities and verify that all are in working condition.
  - Examine batteries and their connections on all HUB and Camera Enclosures. Test batteries and determine if replacement is required or if batteries are still in good condition. Check if the battery replacement date will be passed before the next service and if so, replace the battery. The age of the battery should be marked on it with a label. Sealed lead acid batteries should be replaced at least every 2 years.
  - Restore the system to normal condition on completion of the service.

- **Aspiration Systems**
  - Before start of any work, obtain the status condition of the Aspiration Systems by recording any faults and the specific fault detail that are evident on the panels. The status condition before and after work is captured by the *Contractor* and submitted in a detailed report to the *Service Manager*.
  - Perform fault-finding on the Aspiration Units that have standing faults and alarms to determine the cause of the faults and the alarms.
  - Proceed by clearing any standing faults and alarms.

- Check the detector for any blockages and clear if required.
- Inspect the condition of the filters and clean if required.
- Liaise with the *Service Manager* on the required spares and the action to be taken to clear any faults that need replacement of spare items.
- Visually inspect panels and components for any signs of moisture ingress, damage, deterioration or any abnormalities.
- Examine batteries and their connections. Test batteries and determine if replacement is required or if batteries are still in good condition. Check if the battery replacement date will be passed before the next service and if so, replace the battery. The age of the battery should be marked on it with a label. Sealed lead acid batteries should be replaced at least every 2 years.
- Restore the system to normal condition on completion of the service.

- **Beam Detectors**
  - Before start of any work, obtain the status condition of the Beam Detection Systems by recording any faults and the specific fault detail that are evident on the panels. The status condition before and after work is captured by the *Contractor* and submitted in a detailed report to the *Service Manager*.
  - Perform fault-finding on the Beam Detection Units that have standing faults and alarms to determine the cause of the faults and the alarms.
  - Proceed by clearing any standing faults and alarms.
  - Liaise with the *Service Manager* on the required spares and the action to be taken to clear any faults that need replacement of spare items.
  - Visually inspect panels and components for any signs of moisture ingress, damage, deterioration or any abnormalities.
  - Examine batteries and their connections. Test batteries and determine if replacement is required or if batteries are still in good condition. Check if the battery replacement date will be passed before the next service and if so, replace the battery. The age of the battery should be marked on it with a label. Sealed lead acid batteries should be replaced at least every 2 years.
  - Restore the system to normal condition on completion of the service.

1.2.2.3. Yearly

a) The *Contractor* performs yearly servicing of Aritech Fire Detection and Video Fire & Smoke Detection (VFSD) Systems

- The Aritech Fire Alarm System for the power station as detailed below are subjected to yearly servicing. These include panels for the following areas:
  - Surface Building Stores
  - Headrace
  - Surface Administration Building
  - Visitors Centre
  - Power House – Equipment Room
    - Main Aritech Panel

- Aritech Repeater Panel
- Unit 1 Generator Aspiration Unit
- Unit 2 Generator Aspiration Unit
- Unit 3 Generator Aspiration Unit
- Unit 4 Generator Aspiration Unit
- Lift Shaft Aspiration Unit
- Unit 1 Beam Detector
- Unit 2 Beam Detector
- Unit 3 Beam Detector
- Unit 4 Beam Detector

➢ Transformer Panels

- Generator Transformer 1 Panel
- Generator Transformer 2 Panel
- Generator Transformer 3 Panel
- Generator Transformer 4 Panel
- Service Transformer 1 Panel
- Service Transformer 2 Panel
- Station Transformer 1 Panel
- Station Transformer 2 Panel

- The Video Fire & Smoke Detection (VFSD) System for the power station as detailed below are subjected to yearly servicing.
  - ➢ Control Room Client PC Alarm Monitor
  - ➢ Security Office Client PC Alarm Monitor
  - ➢ Hub Enclosures
  - ➢ Camera Enclosures
  - ➢ Cameras
  - ➢ Lights

- Yearly servicing comprises of the following activities:
  - **Aritech Fire Alarm Systems**
    - Before start of any work, obtain the status condition of all the panels, record the status condition of all panels, record faulty device reference numbers, zones and the specific fault detail that are evident on the panels. The status condition before and after work is captured by the *Contractor* and submitted in a detailed report to the *Service Manager*.
    - Prepare for testing by reading through the logbook that is kept on the main panel in the control room. Any corrective action that has not yet been taken should be noted and carried out during this service.
    - Obtain a printout from the panel of all the faulty devices. Exchange faulty devices with replacement units, set to the same address. Where required, dirty sensors must be cleaned for re-use.

- Obtain a printout of device analogue values. Compare these values to the permitted values for each point. Replace faulty devices or repair wiring.
- Print out a complete system configuration from the panel software. Compare this to the system specification and verify that the system zoning, input-output mapping, and other settings have not changed.
- Check the panel for any disabled devices and investigate the reason. Any faults must be rectified and any disabled devices must be enabled.
- Alarm Test:
  - Test one sensor or call point in each zone. Activate each point in turn, checking that the sounders operate and that the panel reacts correctly.
  - For remote panels, verify that the alarm is also generated on the main panel in the control room and that the description is displayed on the SCADA.
- Fault Test:
  - Remove one sensor in the system and check that the panel correctly reports the event.
  - For remote panels, verify that the fault indication is also generated on the main panel in the equipment room and that the description is displayed on the SCADA.
  - Accept the fault, replace the sensor and reset the panel.
- Visually inspect control panels and components for any signs of moisture ingress, damage, deterioration or any abnormalities.
- Check that all printed circuit boards are in a good condition, free of dust and securely mounted on the panel.
- Examine batteries and their connections. Test batteries and determine if replacement is required or if batteries are still in good condition. Check if the battery replacement date will be passed before the next service and if so, replace the battery. The age of the battery should be marked on it with a label. Sealed lead acid batteries should be replaced at least every 2 years.
- Input-output configuration test:
  - Verify by testing that the input-output mapping operates as programmed. Activate an input, such as a sensor, callpoint, or interface unit and verify that the correct outputs operate. Also check that the outputs function correctly.
- Inspect that no building changes have taken place that may affect the operation of the fire alarm system.
- Restore the system to normal condition on completion of the service.

- **Video Fire & Smoke Detection (VFSD) System**
  - Before start of any work, obtain the status condition of the VFSD System for the Power Station and the Head Race, record the status condition of all panels, record faulty device reference numbers, zones and the specific fault detail that are

evident on the panels. The status condition before and after work is captured by the *Contractor* and submitted in a detailed report to the *Service Manager*.

- Any corrective action that has not yet been taken should be noted and carried out during this service. Check on the Client PC in the control room if there are any faulty cameras that need to be investigated. Any faults must be rectified and any disabled devices must be enabled.
- Obtain a printout from the Client PC of all the faulty devices. Exchange faulty devices with replacement units, set to the same address.
- Inspect cameras and determine if sensitivity of any of the cameras need to be adjusted.
- Examine the Equipment Rack for moisture ingress, damage, deterioration or any abnormalities.
- Inspect the uninterruptable powers supplies for the control room PC and the security office for operability.
- Alarm Test:
  - Test one camera in each zone. Activate each point in turn, checking that the main fire panel reacts correctly.
- Fault Test:
  - Disconnect a camera in the system and check that the panel correctly reports the event.
  - Accept the fault, reconnect the camera and reset the panel
- Visually inspect all HUB Enclosures and Camera Enclosures for any signs of moisture ingress, damage, deterioration or any abnormalities.
- Visually inspect all cameras and lights for damage, deterioration or any abnormalities and verify that all are in working condition.
- Examine batteries and their connections on all HUB and Camera Enclosures. Test batteries and determine if replacement is required or if batteries are still in good condition. Check if the battery replacement date will be passed before the next service and if so, replace the battery. The age of the battery should be marked on it with a label. Sealed lead acid batteries should be replaced at least every 2 years.
- Restore the system to normal condition on completion of the service.

- **Aspiration Systems**
  - Before start of any work, obtain the status condition of the Aspiration Systems by recording any faults and the specific fault detail that are evident on the panels. The status condition before and after work is captured by the *Contractor* and submitted in a detailed report to the *Service Manager*.
  - Perform fault-finding on the Aspiration Units that have standing faults and alarms to determine the cause of the faults and the alarms.
  - Proceed by clearing any standing faults and alarms.
  - Check the detector for any blockages and clear if required.
  - Inspect the condition of the filters and clean if required.

- Liaise with the *Service Manager* on the required spares and the action to be taken to clear any faults that need replacement of spare items.
- Visually inspect panels and components for any signs of moisture ingress, damage, deterioration or any abnormalities.
- Check original design and verify if any changes have occurred.
- Perform a smoke test to verify detector operation and time of activation from smoke exposure till triggering of alarm.
- Simulate a fault to check the operation of the panel.
- Examine batteries and their connections. Test batteries and determine if replacement is required or if batteries are still in good condition. Check if the battery replacement date will be passed before the next service and if so, replace the battery. The age of the battery should be marked on it with a label. Sealed lead acid batteries should be replaced at least every 2 years.
- Restore the system to normal condition on completion of the service.

- **Beam Detectors**

- Before start of any work, obtain the status condition of the Beam Detection Systems by recording any faults and the specific fault detail that are evident on the panels. The status condition before and after work is captured by the *Contractor* and submitted in a detailed report to the *Service Manager*.
- Perform fault-finding on the Beam Detection Units that have standing faults and alarms to determine the cause of the faults and the alarms.
- Proceed by clearing any standing faults and alarms.
- Liaise with the *Service Manager* on the required spares and the action to be taken to clear any faults that need replacement of spare items.
- Visually inspect panels and components for any signs of moisture ingress, damage, deterioration or any abnormalities.
- Perform a test to activate the beam alarm and verify if the alarm registers locally at the panel and remotely on the fire alarm panel in the equipment room.
- Simulate a fault to determine if a fault condition register on the local panel and remotely on the fire alarm panel in the equipment room.
- Examine batteries and their connections. Test batteries and determine if replacement is required or if batteries are still in good condition. Check if the battery replacement date will be passed before the next service and if so, replace the battery. The age of the battery should be marked on it with a label. Sealed lead acid batteries should be replaced at least every 2 years.
- Restore the system to normal condition on completion of the service.

b) The *Contractor* performs yearly functional testing of fire detectors on Aritech Fire Detection and Video Fire & Smoke Detection (VFSD) Systems

- The Aritech Fire Alarm System and Video Fire and Smoke (VFSD) System for the power station are subjected to yearly functional testing. These include systems installed in the following:
  - Surface Building Stores
  - Headrace
    - Aritech Fire Alarm System
    - VFSD System
  - Surface Administration Building
  - Visitors Centre
  - Power House
    - Aritech Fire Alarm system
    - VFSD System
- Yearly functional testing comprises of the following activities:
  - Annual functional testing of all fire detectors and callpoints covering the power station, headrace, surface building stores area, visitors centre and transformer areas are carried out.
  - Note, Annual functional testing of detectors and callpoints for the transformers are carried out differently to the stations fire alarm system detection devices due to the fact that the transformer fire detection devices are interfaced to the operation of the water-foam protection systems on the transformers. Testing of fire detectors and callpoints on the transformers coincide with outages on the equipment or the respective systems are isolated to ensure that testing will not cause spurious operation of the fire protection systems. Liaise upfront with the *Service Manager* on suitable dates for the tests and access requirements.
  - All fire detectors and call points are covered over the year period and provision is made for the necessary resources to conduct the testing.
  - Testing of the Video Fire & Smoke Detection (VFSD) System is accomplished using an approved OEM VFSD device. Note that no open flames will be used for activating the cameras.

c) *Gas Suppression Systems*

The Detectors forming part of the gas suppression systems are required to be tested yearly.

This test would be from detector through controller and main FDS panel to end point where operator receives alarm.

This testing should be done in conjunction with Suppression system service contractor to ensure correct procedures are followed.

1.2.3. Reactive Maintenance

Unplanned repairs required for restoring operating conditions, plant or equipment are to be avoided. The *Contractor* shall be available to perform inspections and repairs for call outs that involve unforeseen defects that have occurred on the systems. Reactive work shall negatively impact on the performance indicators of the *Contractor* as an occurrence and the reaction itself shall be measured against fixed quality parameters.

The *Contractor* ensures that a 24-hour per day, 365 days per year facility is available throughout the contract period under the following minimum criteria:

- A landline (office) phone number for calls during normal working hours.
- A cell phone number shall be available 24-hour every day of the year, for all emergency calls.
- An alternative cell phone number (should the first number not be available)
- A call centre is not a prerequisite but is advisable.

Should neither of the cell phone numbers be unavailable during an emergency, an e-mail to the domicilium address shall be sent and an alternative *Contractor* sourced immediately to provide the service under the same contractual conditions at the expense of the *Contractor*.

Reactive maintenance shall be charged at fixed rates as set out in the Pricing Schedule which shall include all supervision, labour, travelling expenses and general costs to attend to the stated level of reactive work. The *Contractor* submits the work that is to be performed for acceptance to the *Service Manager* beforehand, no claim shall exist for work performed without an *Employer* approved order number issued by the *Service Manager*.

1.2.3.1. Fire Detection System Defects

In the case of callouts, the response time for critical situation shall be within 24 Hours. In the case of non- critical situations, the callout Response time will be within 72 Hours. Transport claims to the station will be limited to a radius of 100 (One Hundred) kilometres.

The following process shall be followed when a defect has been identified and needs to be rectified by the *Contractor*.

- The *Service Manager* informs the *Contractor* of the equipment failure.
- The *Contractor* responds to the *Service Manager* within the required response time with details of response team and timelines to perform initial investigation.
- The *Service Manager* provides the *Contractor* with a Purchase Order for the call out.
- The *Contractor* performs the initial fault finding and perform the necessary repairs where possible. If fire detection system and gas suppression systems equipment repair require additional spares and/or work the *Contractor* informs the *Service Manager* and provide a quotation within three working days.
- The *Service Manager* verify the quotation and accept as per section 4.3.3. If the quotation is not acceptable the *Service Manager* will liaise with the *Contractor* to clarify and resolve any queries. Once quotation is accepted by the *Service Manager* the Purchase order will be updated as per the agreed quotation for the spares and/or additional work.
- The *Contractor* performs the final repairs to put the fire detection system and gas suppression systems equipment back in operation once the spares are available.
- The *Contractor* informs the *Service Manager* of the completed work and submits the invoice for the repairs as per section 2.6.
- A permit to work shall be in force for any work to be carried out by the *Contractor.*

1.3. Interpretation and terminology

The following abbreviations are used in this Service Information:

Abbreviation	Meaning given to the abbreviation
OBL	Outside battery limits
OEM	Original Equipment Manufacturer
SAQCC	South African Qualification and Certification Committee
SCADA	Supervisory Control and Data Acquisition
PPE	Personal Protective Equipment
ESKOM	Electricity Supply Commission
km	kilometre
MW	Megawatt
HV	High Voltage
PM	Preventative Maintenance
FDS	Fire Detection System
VFSD	Video Fire & Smoke Detection
PC	Personal Computer
GPS	Global Positioning System

2. Management strategy and start up.

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

The *Contractor* prepares his plan on MS project format computerised planning software and utilises it for all planning, progress monitoring and reporting. The plan shows all the information required by Clause 21.2 of the TSC3.

In addition, the plan shows:

- The plan indicates the start date, Completion Date and duration of each activity.
- The plan revision number

2.2. Management meetings

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

Title and purpose	**Approximate time & interval**	**Location**	**Attendance by:**
Kick-off Meeting	Once off	Drakensberg Power Station/MS Teams	*Employer, Service Manager, Contractor, and Others as required*
Overall contract progress and feedback	Monthly	Drakensberg Power Station/MS Teams	*Employer, Service Manager, Contractor* and Others as required
Risk Reduction meeting	Adhoc	Drakensberg Power Station/MS Teams	*Employer, Service Manager, Contractor, and Others as required*
At the risk reduction meetings items as prescribed in TSC Clause 16.2 and 16.3 are discussed. The Risk Register is updated by Service Manager and distributed within five days of the meeting.			
Meetings of a specialist nature	Adhoc	Drakensberg Power Station/MS Teams	*Employer, Service Manager, Contractor, and Others as required*
Meetings of a specialist nature may be convened by persons and at times and locations to suit the Parties, the nature and the progress of the *service.*			

Meetings of a specialist nature may be convened as specified elsewhere in this Service Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *service*. Records of these meetings shall be submitted to the *Service Manager* by the person convening the meeting within five days of the meeting.

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

2.3. *Contractor*'s management, supervision and key people

A detailed service organogram of the Company's Branch, indicating specifically Operating officers, financial officers, Communication / liaison personnel and technical staff intended for this contract are required as a tender returnable and are to be kept updated during the entire duration of the contract. Changes in the structure must be communicated to the *Service Manager* immediately of it coming into effect.

The Organogram shall include current contact details and emergency response (24-hour) information.

2.4. Provision of bonds and guarantees

The form in which a bond or guarantee required by the *conditions of contract* (if any) is to be provided by the *Contractor* is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

The *Employer* may withhold payment of amounts due to the *Contractor* until the bond or guarantee required in terms of this contract has been received and accepted by the person notified to the *Contractor* by the *Service Manager* to receive and accept such bond or guarantee. Such withholding of payment due to the *Contractor* does not affect the *Employer*'s right to termination stated in this contract.

2.5. Documentation control

All documentation requires a unique, sequential number and all deviations contained therein clearly described. Contractual communications will be in the form of properly compiled letters or forms attached to e-mails and not as a message in the e-mail itself.

The Service Manager or the Delegated Person shall in all instances be the point of communication (addressee) and no direct communication between persons involved in the contract shall be allowed. Such communication shall be disregarded.

2.5.1. General

Each instruction, certificate, submission, proposal, record, acceptance, notification and reply is communicated in a form which can be read, copied and recorded and in the language of the Contract, within the period for reply or any other period agreed between the parties prior to its due date. Any such communiqué must bear the signature of the author; emails therefore do not conform except when used as a transmittal medium.

2.5.2. Minimum requirements

All documents shall be in simple and clear English; and always reference to applicable NEC TSC3 clause under (or as a result of) which it is communicated.

2.5.3. Use of standard forms

The *Service Manager* and the *Contractor* will use the standard NEC3 TSC.

2.5.4. Communication

All Communication is addressed to the *Service Manager* as applicable to the TSC. All communication makes reference to:

- The Contract Number that is issued by the *Employer (*normally a 46000…..*)*
- The Contract title.
- Any previous reference relating to the specific communique
- The Specific TSC clause under which the communication is issued;
- Whether a reply is required and
- A unique letter reference number.

The unique reference number to be used for written correspondence between the *Service Manager* and *Contractor* and vice versa is as follows: From the *Service Manager* to the *Contractor:* 46000 .. ... E/C 0xxx; and from the *Contractor* to the *Service Manager* 46000 C/E 0xxx referring to the Contract number and the next sequential letter (channel) number

2.6. Invoicing and payment

All Invoices submitted for payment shall make reference to the pricing schedule's alpha-numeric order and description (may be shortened).
Within one week of receiving a payment certificate from the *Service Manager* in terms of core clause 51.1, the *Contractor* provides the *Service Manager* with a tax invoice showing the amount due for payment equal to that stated in the *Service Manager*'s payment certificate.

a) The *Services Manager* to be copied in on all electronic invoices emailed.
b) Failure to submit the invoice to the correct address could result in delays in payment.
c) The *Contractor*'s Tax Invoices comply with the requirements as stated in clause Z7 of the Contract Data
d) Invoices are submitted electronically to:
   - Local Eskom Invoices - invoiceseskomlocal@eskom.co.za**.**
e) Details required when submitting invoices and additional data:
   - The subject line on your email should only contain your vendor number
   - Each invoice in PDF should be named with your invoice number only
   - All electronic invoices are be sent in PDF format only
   - Attach the proof of delivery to your invoice
   - Where applicable, supporting documents are be attached to the scanned PDF invoice as one attachment
   - A copy of the signed assessment certificate
   - Any other appropriate documents,
   - Other requirements:
   - Ensure compliance with the tax requirements for submitting invoices electronically
   - Each PDF should contain one credit note, one debit note or one credit note only. More than one invoice can be submitted per email
   - Any CPA applicable are be invoiced separately, so that if there are issues on the CPA, the rest of the invoices can be paid while the CPA issues are resolved
f) Include the following information on the Invoice:
   - 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;
   - Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;
   - Contractor's company registration number if applicable
   - Contractor's banking details
   - Name and address of recipient
   - Tax invoice number and date of issue,
   - Description of goods/service provided,
   - Quantity or volume of goods/services
   - Period time for which the Tax Invoice is being rendered,
   - Relevant Task Order Number (commencing with a 45 prefix),
   - Relevant line item number,
   - Statement whether value added tax is included or excluded.

2.7. Contract change management

The use of Standard forms is encouraged and is obtainable from the *Service Manager* for instances like compensation events Contract change management is managed in accordance with clause 6 of the core clauses in TSC3

2.8. Records of Defined Cost to be kept by the *Contractor*

In order to substantiate the *Defined Cost* of compensation events, the *Employer* requires that the *Contractor* to keep the following,

- Record of Labour charges
- Record of material charges
- Record of Equipment Charges

These records need to be available on an excel spreadsheet in case of a compensation event is agreed on.

2.9. Insurance provided by the *Employer*

As per clause Z12.
Queries regarding insurance claims and/or procedures can be addressed with the *Service Manager*.

2.10. Training workshops and technology transfer

Not Applicable.

2.11. Design and supply of Equipment

The scope of the work is described in this specification. No alteration to- or on equipment is allowed without the written consent of the *Service Manager*.

2.12. Things provided at the end of the *service period* for the *Employer*'s use

2.12.1. Equipment

None.

2.12.2. Information and other things

The *Contractor* hands over the file with service records.

This file shall contain all contract data including, but not limited to, all communication, instructions, compensation events, disputes, warnings, certificates, reports and health & safety instructions.

2.13. Management of work done by Task Order

a) All work is managed through Task Order.
b) The process for placing a Task Order is:

i. A Task Order Request is issued by the *Service Manager* to the *Contractor*
ii. The *Contractor* prepares and submits a Task Order quote to the *Service Manager.*
iii. The *Service Manager* assesses the Task Order quote for acceptability and conduct clarification with the *Contractor* if required

iv. The *Service Manager* accepts the Task Order quote by issuing the Task Order and PO to the *Contractor*

3. Health and safety, the environment and quality assurance

3.1. Health and safety risk management

3.1.1. The *Contractor* shall comply with the health and safety requirements contained in OHS Requirements and the approved safety file by the *Employer*. The *Employer* reserves the right to review the OHS Requirements to address the Operational risks and the contractor shall comply with the latest OHS Requirements as amended at no cost for the duration of the contract at Drakensberg Power Station.

3.1.2. The section 37(2) agreement as stipulated under the OHS Act no 85 of 1993 must be signed by *Contractor* and *Employer* representatives.

3.1.3. The *Contractor* OHS professional must conducts internal audits at planned intervals (for the duration of the contract at Drakensberg Power Station to monitor compliance to the contractual health and safety requirements.

3.1.4. The *Service Manager* must conduct inspections at planned intervals (for the duration of the contract at Drakensberg Power station to monitor compliance to the contractual health and safety and legal requirements.

3.1.5. The *Contractor* may be selected during internal and/or external Drakensberg Power Station audits to verify compliance to legal and contractual OHS requirements. The *Service Manager* will communicate this at relevant time periods and the contractor shall avail themselves for this audit.

3.1.6. In addition to the requirements of the applicable laws governing the occupational health and safety, Drakensberg Power Stations OHS requirements particular to the service and the Affected Property for this contract shall be adhered to for the duration of the contract.

The minimum requirements for the *Contractor* to gain access to Drakensberg Power Station include the but not limited to:

- Valid Medical fitness certificate
- Police clearance from SAPS or accredited supplier/service provider linked to SAPS AFIS system not older than thirty (30) days.
- Identification document (RSA ID or equivalent)
- National Drivers Licence (applicable to drivers)
- Adherence to the Eskom Life-saving rules.
- Applicable risk-based PPE.
- Valid letter of good standing always (COIDA or equivalent). Access to site to perform work will be denied should the Letter of good standing not be valid.
- The *Contractor*/supplier/consultant who is working alone and not eligible to register with the compensation fund, shall provide *Employer* with the member benefit statement of the insurance cover which include life and disability cover to the minimum fund of R500 000.

Note: Induction will only be conducted after the above documents have been submitted and accepted by the *Employer*.

3.2. Key Performance Indicators

1. *Contractor*/supplier Management Key Performance Indicators (KPI's)
2. Maintain Health and Safety file and compliance to the health and safety plan, Eskom OHS requirements and applicable legislation as amended.
3. Always maintain good housekeeping where the task is being executing and/or within the area of responsibility.
4. Implement and monitor near miss reporting strategy / programme (reporting of near misses).

5. Develop and comply to Behavioral Safety Observation (BSO) and Planned Job Observation programmes (PJO).
6. Maintain Zero Fatalities for the duration of the contract.
7. At any given point, the OHS performance must be within the lost time injury (LTI) tolerance level as amended.
8. All incidents must be reported immediately or before the end of the particular shift during which the incident occurred.
9. All incident investigations shall be completed within 07 working days of the occurrence of an incident.
10. Incident investigation recommendations shall be closed within the recommended time frame recorded in the Incident investigation report.
11. Close audit findings as per the Eskom procedure or audit report recommended time frames.
12. Close Non-conformance as per the recommended time frames.

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

Contract completion and sign off

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

a) Close all incidents and audit findings.
b) Clean the respective area and ensure good housekeeping where the *Contractor* was working.
c) *Contractor* shall submit safety statistics and a safety file to the *Employer's* Safety Department for closeout and filling.

Completion of a closeout report to close the contractual work.

3.3. Environmental constraints and management

The *Contractor*'s rates tendered shall cover all costs that will be incurred to comply with all requirements of the environmental requirements. Special attention is drawn inter alia to the following aspects:

- The *Contractor*'s attention is drawn to the fact that the Power Station is situated in a highly sensitive environmental area and that any incident that may result in an environmental impact must be brought to the attention of the *Service Manager* as soon as it is possible. The site is managed in accordance with an ISO 14001 certified management system, and the *Contractor* will be expected to manage all processes in line with environmentally sound principles.
- The *Contractor*, in and about the execution of the service, complies with all applicable national, provincial and Municipal environmental legislation and by laws.
- Comply with all environmental legislation of South Africa, including but not limited to:
  National Environmental Management Act 107 of 1998
  National Environmental Management Waste Act 59 of 2008
  National Water Act 36 of 1998
  Eskom Waste Standard latest revision
  Waste Management: Norms and standards: Act 59 of 2008 latest revision
- The *Contractor* shall comply to all National and Local legislation requirements as well as Eskom procedures and policy. *Employer's* goal is to ensure zero harm to the environment, and to ensure that any possible impact is mitigated or managed. The Duty of Care and implementation of best practice is critical during operations, and full communication on environmental issues is required at all times.

- Site/laydown demarcation: The *Contractor* shall demarcate his camp site, be restricted to that specific area and take full responsibility to restore the area to its original condition before the contract commenced.
- Waste management: The *Contractor* shall dispose of all waste off-site at a licensed waste disposal facility and submit proof to the *Employer*. The method statement on waste management will need to include the identification of possible waste streams, temporary storage and disposal options for each waste type, and contingency plans in the case of any environmental incident. A Safety Data Sheet must be supplied for all chemical or hazardous / potentially hazardous material brought onto site."
- Sanitation: The *Contractor* shall provide an appropriate enclosed temporary sanitation facility
- Dust control: The *Contractor* shall be responsible to apply effective dust control measures.
- Fire prevention: It shall be the responsibility of the *Contractor* to prevent fires at all times during the contract.
- The *Contractor* shall take full responsibility for protecting the natural environment and eliminating or minimising the negative impacts of construction on the environment during construction. Nothing specified herein shall relieve the *Contractor* of any obligations or responsibilities in this regard.
- The *Contractor* shall implement an Environmental Policy and plan, in line with relevant various compliance obligations, statutory regulations, including all national, provincial and municipal legislation/regulations.
- Method statements which include environmental protection shall be submitted to the *Service Manager* within 14 days after the signing of the contract.
- The *Contractor* shall conduct his activities so as to cause the least possible disturbance and adverse impact to the existing amenities, whether natural or man-made, in accordance with all the currently applicable statuary requirements. Special care shall be taken by the *Contractor* to prevent irreversible damage to the environment.
- The *Contractor* shall take adequate steps to educate all members of his workforce as well as his *Supervisor*y staff on the relevant environmental laws and regulations. The *Contractor* shall supplement these steps by prominently displayed notices and signs in strategic locations to remind personnel of environmental concerns.

3.3.1. Method Statements

The *Contractor* shall submit, before 14 calendar days of commencement of any activity, a Method Statement containing details of all site layouts and environmental protection measures proposed to the *Service Manager* for review and acceptance.
These shall include but not limited to:

i. Site establishment layout;
ii. Pollution prevention measures;
iii. Waste including water management plan;
iv. Incident and emergency management

In addition, the *Contractor* shall provide detailed method statements on how he intends to carry out the *works*; this shall apply to all, and any part of the *works* as provided in the *conditions of contract.*

3.3.2. Temporary Services and Facilities

- All fuel storage tanks shall be bunded to 110 % of the total storage capacity. Fuel dispensing areas and workshop areas shall be provided with concrete hard standing draining to oil separators. This will also apply to other areas with pollution potential.
- Cleaning, maintenance and repairs of vehicles shall be done off site.

3.3.3. Protection of Rivers, Streams and Watercourses

- All rivers, streams and watercourses shall be protected from direct or indirect spills of pollutants such as garbage, sewage, cement, oils, fuels, chemicals, aggregate tailings, silt and wastewater or organic material resulting from the *Contractor's* activities. In the event of a spill prompt action shall be taken to clear polluted or affected areas.

- The *Contractor* shall not work within river flood lines, streams, water courses and wetlands without the written acceptance of the *Service Manager* as required for the execution of the work.

3.3.4. Refuse and Waste Control

- The management of solid waste on Site shall be strictly controlled and monitored. Only licenced waste disposal landfill sites shall be used.
- The quantities of waste generated on Site shall be minimised; Labelled recycling bins shall be used and waste separated where possible. In addition, a recycled-material collection schedule shall be established and the bins shall be collected regularly;
- Eating areas for the construction staff shall be designated and supplied with waste bins.
- No on-site burying or dumping or unauthorised burning of any waste materials, vegetation, litter, or refuse shall occur;
- Bins provided must have lids and will be sufficient to store the solid waste produced on a daily basis;
- The bins should be emptied at least once a day;
- Waste from bins may be temporarily stored on Site in a central waste area that is weatherproof and scavenger-proof and which the *Service Manager* has accepted;
- All solid waste shall be disposed of off site, at a licenced landfill site. The *Contractor* shall supply the *Service Manager* with a certificate of disposal; and Waste shall be separated into domestic waste, building/construction rubble, scrap metal, oil and grease and hazardous waste and dealt with in the following manner:

3.3.5. Protection of Flora

- The removal, damage and disturbance of indigenous flora are prohibited.

3.3.6. Protection of the Fauna

- The *Contractor* shall protect fauna living within the Site and shall ensure that hunting, snaring, poisoning, shooting, nest raiding, or egg-collecting and disturbance does not occur.
- The *Contractor* is to ensure that his employees are instructed not to feed wild animals.
- The use of pesticides is prohibited unless accepted by the *Project Manager*.
- No domestic pets or livestock are permitted on Site.

3.4. Quality assurance requirements

- The quality requirements are as per ISO 9001:2015 and as per Eskom document 240-105658000,SUPPLIER CONTRACT QUALITY REQUIREMENTS SPECIFICATION.
- The *Contractor's* company quality documents are subject for verification and acceptance by Eskom.
- The supplier shall submit objective evidence of a developed QMS that complies with ISO 9001 (or the latest applicable revision). The following documented information (approved/ signed copies) shall be submitted:

✓ Quality management system manual or a (documented information) that have defines and describes the QMS and its scope

✓ Quality Policy, aligned with the supplier's strategic direction (documented information)

✓ Quality Objectives (documented information)

✓ Control of documented information (both maintain and retain documented information)

✓ Internal audit procedure (documented information)

✓ Control of nonconforming outputs (documented information)

✓ Nonconformity and Corrective action procedure (documented information)

- The QMS should drive all the supplier's business management processes to ensure that all of Eskom's requirements are fully met on a consistent basis. Supplier Quality Management: Specification Unique Identifier: 240-105658000
- The supplier shall submit a draft contract quality plan that is specific to the scope of work as described in the tender documents. The plan must address the minimum requirements as per ISO 10005.
- Where applicable; the supplier shall submit an example inspection and test plan (ITP) or quality control plan (QCP).
- The supplier shall submit documented information for Control of Externally Provided Processes, Products and Services.
- The supplier shall submit a copy of documented information for roles, responsibilities and authorities in relation to the QMS. Examples of relevant documented information are; organization charts, job descriptions, work instructions, duty statements, manuals, procedures
- The supplier shall complete and sign Form A under Category 3 (Enquiry/Contract/Quality Requirements for Supplier Quality Management Specification 240-105658000/ QM 58 and ISO 9001).

4. Procurement

4.1. People

4.1.1. Minimum requirements of people employed

Requirements as set out in section 1.1 shall be adhered to. In addition, training conducted for key personnel in terms of the Skills Development Act of 1999 and that assurance that all training conducted has been done through, or has been governed by, the SETA.

A curriculum Vitae of each person shall be submitted at the time of tender and when personnel changes occur. This shall be noted in the compulsory organogram and updated.

Staff shall be classified as per SANS 10147 (D4) et al.

Foreign employees to have valid work permits.

4.1.2. BBBEE and preferencing scheme

With confirmation of its B-BBEE Status by submitting an updated Verification Certificate by no later than 30 (thirty)

Contractor to ensures the *Service Manager* has an updated valid certified copy of BBBEE certificate or sworn affidavit during contract period. Failure to do so, could result in Eskom Vendor Management Department blocking vendor details on Eskom vendor management system which affects payment processing of invoices.

Supplier Development and Localisation.

Refer to attachment 19 (SDL&I Template for Bidders Provision of Fire Detection System Drakensberg Power Station).

4.2. Subcontracting

4.2.1. Preferred subcontractors

No Nominated Subcontractors.

4.2.2. Limitations on subcontracting

The *Contractor* shall not sub-contract more than 20% of the work. This will not apply to any documentational work at/during tender stage. No supervision must be subcontracted.

4.3. Plant and Materials

4.3.1. Specifications

None.

4.3.2. Correction of defects

The *Contractor* is required to correct all the defects identified to the satisfaction of the *Employer*.

4.3.3. *Contractor*'s procurement of Plant and Materials

The *Contractor* provides the *Employer's representative* with a quotation with the agreed markup percentage for all materials, parts and spares required to perform repairs. The *Contractor* attaches the Vendor's invoice or proof of purchase together with the *Contractor's* quotation as supporting evidence. The warrantees from suppliers are to be in favour of the *Employer* and not just the *Contractor*.

4.3.4. Tests and inspections before delivery

Where applicable, material, dimensional, material safety data sheets (MSDS) and pressure test certificates are required for parts and equipment supplied or for any refurbishments/reconditioning conducted by the *Contractor*.

The *Service Manager* may request to inspect Plant and Materials together with the *Contractor* on arrival before the use on the Affected Property and from time to time during execution. The *Contractor* keeps records of such inspections and the records be available for *Service Manager* on request. Findings from these inspections will be tracked in the monthly meetings.

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

None.

4.3.6. Cataloguing requirements by the *Contractor*

None.

5. Working on the Affected Property

5.1. *Employer*'s site entry and security control, permits, and site regulations

Drakensberg Power Station is a National Key Point. All persons intending to perform work and/or attend meetings during this contract period comply with the following:

The *Contractor* adheres to all Life Saving Rules as specified. The *Employer* does not permit any passengers to be transported at the back of any Truck, light domestic vehicle or enclosed light commercial vehicle. Each person shall sign the Affected Property entrance register and this information shall also be collated by the *Contractor* for use during the scheduled meetings. All *Contractor* personnel are in possession of Security clearance. Verification records are submitted as part of the safety file together with ID copies. The *Employer* reserves the right to refuse entry to all persons with criminal records.

- Original Identity document (ID) or passport is presented to Security on arrival

- No weapons may be taken on site
- No drugs allowed on site
- No explosives allowed on site
- No firearms and ammunition allowed on site
- No photographs may be taken whilst on site
- All persons entering the *Employer*'s premises undergo a breathalyser test. Any persons testing positive is not allowed entry. The *Employer* has a zero tolerance towards alcohol.
- Tool registers is verified on arrival by security personnel.
- Only reverse parking is allowed on the Affected Property General access to the station is controlled and it is mandatory that the *Contractor* adheres to all security regulation in force during the period of the contract.

The *Contractor* is required to submit proof of verification record(s) (Security clearance) from SAPS or accredited supplier linked to SAPS AFIS system not older than thirty (30) days before access to the Affected Property is granted.

Contractor is required to submit the SAPS Clearance Certificates obtained for all his employees along with copies of their Identity Documents to the Affected Property Security Manager for verification. Only individuals with clear criminal records will be considered.

5.2. People restrictions, hours of work, conduct and records

ESKOM does not permit any passengers to be transported at the back of any Truck, light domestic vehicle or enclosed light commercial vehicle.
All Cardinal rules as specified shall be adhered to. The premises may be entered from 08:00 to 16:00 Mon-Thu, excluding public Holidays and from 08:00 to12:00 on Fridays. Each person shall sign the Affected Property entrance Register and this information shall also be collated by the *Contractor* for use during the scheduled meetings.

Parking is allowed in the demarcated areas only and should it be required to drive on Affected Property, then please adhere to the following;

Maximum speed is 20km/h

Obey all road signs

Damage to *Employer's* plant/ property will be for the *Contractor's* account.

5.3. Health and safety facilities on the Affected Property

All *Contractor* employees and intended sub-contractors must attend a compulsory induction meeting at the start of the Contract period.

The required Health & Safety files, complete with all of the requirements thereto, must be submitted, completed and approved before the start of the contract period.

5.4. Environmental controls, fauna & flora

The *Contractor's* attention is drawn to the fact that the *Employer's* Power Stations are situated in highly sensitive areas with respect to the environment.

The *Contractor* acquaints himself with all statutory and local environment regulations and adheres to these without exception.
The *Contractor* complies with the Hazardous Chemical Regulations, GNR. 1179 of 25 August 1995 as amended by GNR.930 of 25 June 2003 and GNR.683 of June 2008 when using any hazardous chemicals, as well as complying with the requirements of the National Environmental Management Act of 1988.

The *Contractor* will be required to ensure that all *Services* are carried out as per the ISO 14001 standard and Eskom's Environmental Policy. The following environmental requirements are complied with at all times:

- Zero liquid effluent discharge.
- No chemicals will be dumped into the station drains or on the premises.
- No oil or waste will be dumped in an unauthorised area or unlicensed waste site.
- Asbestos will be handled and stored according to Act 15 of 1973 (hazardous substances Act).
- No materials or waste will be burnt on the Affected Property. Hazardous substances shall be handled and stored according to the hazardous substances Act no 15 of 1973. No effluent shall be discharged into the public streams.
- Construction Safety, Health, and Environmental Management Rev. 0 32-136

Waste Disposal:

All waste introduced to and/or produced on the *Employer's* premises by the *Contractor* for this contract, must be handled in accordance with the minimum requirements for the Handling and Disposal of Hazardous Waste in terms of Government Legislation as proclaimed by the Department of Water Affairs and Forestry Act, 1994 Ref: ISBN0621-16296-5.

Hazardous substances

If product is classified as a hazardous substance, safety brochures must accompany delivery. In accordance with the Occupational Health and Safety Act (OHSA), Act 85 of 1993 section 10 and 11. If any hazard is identified by the *Contractor*, he must immediately inform the *Service Manager.*

5.5. Cooperating with and obtaining acceptance of Others

The *Contractor* co-operates with and does not delay, impede or otherwise impair the service of Others.

5.6. Records of *Contractor*'s Equipment

The *Contractor* shall, before entering the Affected Property for the first time, provide a comprehensive list of all equipment and tools intended for use during the contract period, to the *Service Manager.* Access will be postponed until such time as the inventory is approved and available at each Affected Property visit.

Material intended for use shall be approved beforehand as stipulated. The exact amounts consumed during a particular service visit must be declared and reconciled in order to reflect on the quarterly report.

5.7. Equipment provided by the *Employer*

None.

5.8. Site services and facilities

5.8.1. Provided by the *Employer*

The *Service Manager* shall make available to the *Contractor*, or their representatives, the following facilities during the contract period:

Toilets and ablution facilities.

Eating amenities in the Powerhouse.
First-aid in the Powerhouse building.

The *Contractor* shall provide everything else necessary for providing the Service.

5.8.2. Provided by the *Contractor*

The *Contractor* makes provision for all required Affected Property services and facilities.

5.9. Control of noise, dust, water and waste

The control of noise, dust, water and waste shall be as expressed in the environmental requirements for the Affected Property.

5.10. Hook ups to existing works

As far as practicable, all work will be conducted at ground level. Should any hook-ups be required for specific work, please consult with the *Service Manager*.

5.11. Tests and inspections

5.11.1. Description of tests and inspections

Inspections will be carried out by the Health & Safety Officer, the Environmental officer and the *Service Manager* periodically. This information will be shared during the quarterly meetings.

Inspections carried out by the *Contractor*, specifically those intended for the prevention of harbouring areas, must be recorded and recommendations communicated with the *Service Manager* as soon as it becomes apparent.

5.11.2. Materials facilities and samples for tests and inspections

None.

6. List of drawings

6.1. Drawings issued by the *Employer*

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

Drawing number	Revision	Title
None.		

7. Specifications

Title	Date or revision	Tick if publicly available
General Specifications:		
240-105658000 – Supplier Contract Quality Requirements Specification		
ISO 9001:2008 – Quality Management Systems		
OHASA (1993) – Occupational Health and Safety Act of South Africa, Act 85 of 1993		√
32-136 – Contractor Health and Safety Requirements		
240-150642762 – Generation Plant Safety Regulations		
240-62196227 – Eskom Life-saving Rules Directive 23-421		
Technical specifications:		
SANS 10139 – Fire Detection and Alarm Systems for Buildings – System Design, Installation and Servicing		√
SANS 10400-T – The Application of the National Building Regulations Part T – Fire Protection		√
240-56737448 – Fire Detection & Life Safety Design Standard		
240-54937654 – Inspection, Testing and Maintenance of Fire Detection Systems		

ANNEXURE 1 – EQUIPMENT INSPECTION SHEET

Equipment Inspection Sheet

Company Name:	**:**	
Equipment Inspected:	:	
Serial Number:	:	
Reference Number	:	
KKS Number	:	

Date Inspected	Item Description	Comment

ANNEXURE 2 – INITIAL PANEL STATUS INDICATION SHEET (RECORDING OF STANDING FAULTS)

Initial Panel Status Indication Sheet (Recording of Standing Faults)

Company Name:	**:**	
Panel Inspected:	:	
Serial Number:	:	
Reference Number	:	
KKS Number	:	

Date Inspected	Faulty Device(s) Reference Number	Zone Reference Number	Device/Area Description	Fault Description

ANNEXURE 3 – INITIAL PANEL STATUS INDICATION SHEET (RECORDING OF ALARMS)

Initial Panel Status Indication Sheet (Recording of Alarms)

Company Name:	**:**	
Panel Inspected:	:	
Serial Number:	:	
Reference Number	:	
KKS Number	:	

Date Inspected	Alarm Device(s) Reference Number	Zone Reference Number	Device/Area Description	Alarm Description

ANNEXURE 4 – INITIAL PANEL STATUS INDICATION SHEET (RECORDING OF DISABLED DEVICES)

Initial Panel Status Indication Sheet (Recording of Disabled Devices)

Company Name:	**:**	
Panel Inspected:	:	
Serial Number:	:	
Reference Number	:	
KKS Number	:	

Date Inspected	Disabled Device(s) Reference Number	Zone Reference Number	Device/Area Description

ANNEXURE 5 – VFSD SYSTEM INITIAL STATUS INDICATION SHEET (RECORDING OF FAULTY DEVICES)

VFSD System Initial Status Indication Sheet (Recording of Faulty Devices)

Company Name:	**:**	
Panel Inspected:	:	
Serial Number:	:	
Reference Number	:	
KKS Number	:	

Date Inspected	Faulty Device(s) Reference Number	Zone Reference Number	Device/Area Description	Fault Description

ANNEXURE 6 – PANEL STATUS INDICATION SHEET AFTER SERVICING (RECORDING OF STANDING FAULTS)

Panel Status Indication Sheet after Servicing
(Recording of Standing Faults)

Company Name:	**:**	
Panel Inspected:	:	
Serial Number:	:	
Reference Number	:	
KKS Number	:	

Date Inspected	Faulty Device(s) Reference Number	Zone Reference Number	Device/Area Description	Fault Description	Root Cause	Corrective Action

ANNEXURE 7 – PANEL STATUS INDICATION SHEET AFTER SERVICING (RECORDING OF ALARMS)

Panel Status Indication Sheet after Servicing
(Recording of Alarms)

Company Name:	**:**	
Panel Inspected:	:	
Serial Number:	:	
Reference Number	:	
KKS Number	:	

Date Inspected	Alarm Device(s) Reference Number	Zone Reference Number	Device/Area Description	Alarm Description	Root Cause	Corrective Action

ANNEXURE 8 – PANEL STATUS INDICATION SHEET AFTER SERVICING (RECORDING OF DISABLED DEVICES)

Panel Status Indication Sheet after Servicing
(Recording of Disabled Devices)

Company Name:	**:**	
Panel Inspected:	**:**	
Serial Number:	**:**	
Reference Number	**:**	
KKS Number	**:**	

Date Inspected	Disabled Device(s) Reference Number	Zone Reference Number	Device/Area Description	Fault Description	Root Cause	Corrective Action

ANNEXURE 9 – VFSD SYSTEM STATUS INDICATION SHEET AFTER SERVICING (RECORDING OF FAULTY DEVICES)

VFSD System Status Indication Sheet after Servicing (Recording of Faulty Devices)

Company Name:	**:**	
Panel Inspected:	:	
Serial Number:	:	
Reference Number	:	
KKS Number	:	

Date Inspected	Faulty Device(s) Reference Number	Zone Reference Number	Device/Area Description	Fault Description

ANNEXURE 10 – MONTHLY INSPECTION, SERVICE & FAULT-FINDING SHEET FOR FIRE ALARM SYSTEMS

Inspection, Servicing & Testing Sheet

Company Name	:	**Drakensberg Power Station- Fire Detection Systems Inspection, Servicing & Fault-finding**
Competent Person	:	**Fire Alarm Systems**
SAQCC Reg. No.	:	**Monthly Inspection, Service & Fault-finding**
Qualification	:	
Level	:	

Item	Task Description	Completed	Notes
1	Obtain the status condition of all the panels, record the status condition of all panels, record faulty device reference numbers, disabled devices, zones and the specific fault detail that are evident on the panels. Record on relevant indication sheets and also download a print out from the panel of the faulty devices.		
2	Perform fault-finding on the panels that have standing faults and alarms to determine the cause of the faults and the alarms		
3	Proceed by clearing any standing faults and alarms.		
4	The outcome of the monthly inspection, fault-finding, servicing & repair and clearance of any standing faults and alarms are captured in a detailed report that are submitted to the *Service*		

	Manager. This report at a minimum contains the findings of the inspection, referenced the faulty devices with the specific device number, causes of the faults, action taken to clear the faults, servicing and any recommendations that may transpire from the service. Record on relevant indication sheets of the faulty and disabled devices.		

Deficiencies corrected during the Monthly Inspection & Servicing.	
Deficiencies remaining after the Monthly Inspection & Servicing.	
Specify any corrective action/follow-up.	
Cross-referenced documentation. (Reports, procedures, etc.)	

Close-out:

	Work Completed by:	Approved by:
Name	:	
Date	:	
Signature	:	

ANNEXURE 11 – 3-MONTHLY INSPECTION & SERVICE SHEET FOR FIRE ALARM SYSTEMS

Inspection, Servicing & Testing Sheet

Company Name	:	**Drakensberg Power Station- Fire Detection Systems Inspection & Servicing**
Competent Person	:	**Fire Alarm Systems**
SAQCC Reg. No.	:	**3-Monthly Inspection & Service**
Qualification	:	
Level	:	

Item	Task Description	Completed	Notes
1	Obtain the status condition of all the panels, record the status condition of all panels, record faulty device reference numbers, disabled devices, zones and the specific fault detail that are evident on the panels. Record on relevant indication sheets and download a printout from the panel of the faulty devices.		
2	Prepare for testing by reading through the logbook that is kept on the main panel in the control room. Any corrective action that has not yet been taken should be noted and carried out during this service.		
3	Obtain a printout from the panel of all the faulty devices. Exchange faulty devices with replacement units, set to the same address. Where required, dirty sensors must be cleaned for re-use.		

4	Obtain a printout of device analogue values. Compare these values to the permitted values for each point. Replace faulty devices or repair wiring.		
5	Print out a complete system configuration from the panel software. Compare this to the system specification and verify that the system zoning, input-output mapping, and other settings have not changed.		
6	Check the panel for any disabled devices and investigate the reason. Any faults must be rectified and any disabled devices must be enabled.		
7	Alarm Test: • Test one sensor or call point in each zone. Activate each point in turn, checking that the sounders operate and that the panel reacts correctly. Note: Precautionary measures must be taken to prevent discharge of foam/water spray systems during alarm testing of the transformer panels as the systems will activate upon alarm testing of the panels. • For remote panels, verify that the alarm is also generated on the main panel in the equipment room and that the description is displayed on the SCADA.		
8	Fault Test: • Remove one sensor in the system and check that the panel correctly reports the event. • For remote panels, verify that the fault indication is also generated on the main panel in the equipment room and		

	that the description is displayed on the SCADA. • Accept the fault, replace the sensor and reset the panel.		
9	Visually inspect control panels and components for any signs of moisture ingress, damage, deterioration or any abnormalities.		
10	Check that all printed circuit boards are in a good condition, free of dust and securely mounted on the panel.		
11	Examine batteries and their connections. Test batteries and determine if replacement is required or if batteries are still in good condition. Check if the battery replacement date will be passed before the next service and if so, replace the battery. The age of the battery should be marked on it with a label. Sealed lead acid batteries should be replaced at least every 2 years.		
12	Record on relevant indication sheets the faulty and disabled devices.		
13	Restore the system to normal condition on completion of the service.		

Deficiencies corrected during the Quarterly Inspection & Servicing.	
Deficiencies remaining after the Quarterly Inspection & Servicing.	

Specify any corrective action/follow-up.	
Cross-referenced documentation. (Reports, procedures, etc.)	
Close-out:	
Work Completed by:	Approved by:
Name : Date : Signature :	

ANNEXURE 12 – YEARLY SERVICE SHEET FOR FIRE ALARM SYSTEMS

Inspection, Servicing & Testing Sheet			
Company Name :		**Drakensberg Power Station- Fire Detection Systems Servicing**	
Competent Person :		**Fire Alarm Systems**	
SAQCC Reg. No. :		**Yearly Service**	
Qualification :			
Level :			
Item	**Task Description**	**Completed**	**Notes**
1	Obtain the status condition of all the panels, record the status condition of all panels, record faulty device reference numbers, disabled devices, zones and the specific fault detail that are evident on the panels. Record on relevant indication sheets and download a printout from the panel of the faulty devices.		
2	Prepare for testing by reading through the logbook that is kept on the main panel in the control room. Any corrective action that has not yet been taken should be noted and carried out during this service.		
3	Obtain a printout from the panel of all the faulty devices. Exchange faulty devices with replacement units, set to the same address. Where required, dirty sensors must be cleaned for re-use.		
4	Obtain a printout of device analogue values. Compare these		

	values to the permitted values for each point. Replace faulty devices or repair wiring.		
5	Print out a complete system configuration from the panel software. Compare this to the system specification and verify that the system zoning, input-output mapping, and other settings have not changed.		
6	Check the panel for any disabled devices and investigate the reason. Any faults must be rectified and any disabled devices must be enabled.		
7	Alarm Test: • Test one sensor or call point in each zone. Activate each point in turn, checking that the sounders operate and that the panel reacts correctly. Note: Precautionary measures must be taken to prevent discharge of foam/water spray systems during alarm testing of the transformer panels as the systems will activate upon alarm testing of the panels. • For remote panels, verify that the alarm is also generated on the main panel in the equipment room and that the description is displayed on the SCADA.		
8	Fault Test: • Remove one sensor in the system and check that the panel correctly reports the event. • For remote panels, verify that the fault indication is also generated on the main panel in the equipment room and that the description is displayed on the SCADA.		

	• Accept the fault, replace the sensor and reset the panel.		
9	Visually inspect control panels and components for any signs of moisture ingress, damage, deterioration or any abnormalities.		
10	Check that all printed circuit boards are in a good condition, free of dust and securely mounted on the panel.		
11	Examine batteries and their connections. Test batteries and determine if replacement is required or if batteries are still in good condition. Check if the battery replacement date will be passed before the next service and if so, replace the battery. The age of the battery should be marked on it with a label. Sealed lead acid batteries should be replaced at least every 2 years.		
12	Input-output configuration test: • Verify by testing that the input-output mapping operates as programmed. Activate an input, such as a sensor, callpoint, or interface unit and verify that the correct outputs operate. Also check that the outputs function correctly.		
13	Inspect that no building changes have taken place that may affect the operation of the fire alarm system.		
14	Record on relevant indication sheets the faulty and disabled devices.		
15	Restore the system to normal condition on completion of the service.		
Deficiencies corrected during the Annual Servicing.			

Deficiencies remaining after the Annual Servicing.	
Specify any corrective action/follow-up.	
Cross-referenced documentation. (Reports, procedures, etc.)	
Close-out:	
Work Completed by: Name : Date : Signature :	Approved by:

ANNEXURE 13 – YEARLY FUNTIONAL TESTING SHEET FOR FIRE ALARM SYSTEMS

Inspection, Servicing & Testing Sheet			
Company Name	:		**Drakensberg Power Station- Fire Detection Systems Functional Testing**
Competent Person	:		**Fire Detectors**
SAQCC Reg. No.	:		**Yearly Functional Testing**
Qualification	:		
Level	:		

Item	Task Description	Completed	Notes
1	Annual functional testing of all fire detectors and callpoints covering the power station, headrace, surface building stores area, visitors centre and transformer areas shall be carried out.		
2	Note, Annual functional testing of detectors and callpoints for the transformers shall be carried out differently to the stations fire alarm system detection devices due to the fact that the transformer fire detection devices are interfaced to the operation of the water-foam protection systems on the transformers. Testing of fire detectors and callpoints on the transformers shall coincide with outages on the equipment or the respective systems shall be isolated to ensure that testing will not cause spurious operation of the fire protection systems. Liaise upfront with the *Service Manager* on		

	suitable dates for the tests and access requirements.		
3	All fire detectors and call points shall all be covered over the year period and provision must be made for the necessary resources to conduct the testing.		
4	Note that functional testing of detectors that are interfaced to solenoid operated dampers for some plant areas means that the functional operation of those dampers are verified at the same time that the detectors are tested.		

Deficiencies corrected during the Annual Functional Testing.	
Deficiencies remaining after the Annual Functional Testing.	
Specify any corrective action/follow-up.	
Cross-referenced documentation. (Reports, procedures, etc.)	

Close-out:

	Work Completed by:	Approved by:
Name	:	
Date	:	
Signature	:	