NEC3 Term Service Contract (TSC3)

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

and
(REG NO. 2006/024747/07)

for

Replacement of Kriel Power Station Non-Lethal Energised Perimeter Detection System (NLEPDS) For a period of 12 months.

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CONTRACT No.

PART C1: AGREEMENTS & CONTRACT DATA

Contents:

C1.1 Form of Offer & Acceptance

Offer

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

Replacement of Kriel Power Station Non-Lethal Energised Perimeter Detection System (NLEPDS) For a period of 12 months.

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**
	Value Added Tax @ 15% is	**R**
	The offered total of the amount due inclusive of VAT is[1]	**R**

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

Signature(s) .....

Name(s) .....

Capacity .....

For the tenderer: .....

Name & signature of witness .....

Date .....

Tenderer's CIDB registration number: .....

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

Acceptance

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

The terms of the contract, are contained in:

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

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the *Employer* during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the *Employer's* agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed and signed original copy of this document, including the Schedule of Deviations (if any).

Signature(s)			
Name(s)	Morongwe	Raphasha	
Capacity	Power Station General Manager	Kriel Power Station	
for the Employer	**Eskom Holdings SOC Ltd, Megawatt Park, Maxwell Drive, Sandton, Johannesburg, 2199**		
Name & signature of witness	Nyadi Tjia	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	**None**	**None**

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		Morongwe Raphasha
Capacity		Power Station General Manager
On behalf of		**Eskom Holdings SOC Ltd, Megawatt Park, Maxwell Drive, Sandton, Johannesburg, 2199**
Name & signature of witness		Nyadi Tjia
Date		

C1.2 TSC3 Contract Data

Part one - Data provided by the *Employer*

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

Clause	Statement	Data
1	**General**	
	The *conditions of contract* are the core clauses and the clauses for main Option:	
		A: Priced contract with price list
	dispute resolution Option	**W1: Dispute resolution procedure**
	and secondary Options	
		X1: Price adjustment for inflation
		X2 Changes in the law
		X17: Low service damages
		X18: Limitation of liability
		X19: Task Order
		Z: *Additional conditions of contract*
	of the NEC3 Term Service Contract 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**
	Tel No.	**011 871 3706**
	Fax No.	**Not applicable**
10.1	The *Service Manager* is (name):	**K Ntsheroa**
	Address	**Kriel Power Station, Ogies/Bethal Road, Kriel, 2271**
	Tel	**017 615 2557**
	Fax	**Not applicable**
	e-mail	**Ntsherk@eskom.co.za**

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

11.2(2)	The Affected Property is	**Kriel Power Station**
11.2(13)	The *service* is	**Replacement of Kriel Power Station Non-Lethal Energised Perimeter Detection System (NLEPDS)**
11.2(14)	The following matters will be included in the Risk Register	**People; Quality and SHEQ**
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	**1day**
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 weeks of the Contract Date**
3	**Time**	
30.1	The *starting date* is.	**1 February 2025**
30.1	The *service period* is	**1 year (12 months)**
4	**Testing and defects**	**As per section X18 and section 6.4.2**
5	**Payment**	**30 days after assessment and invoicing.**
50.1	The *assessment interval* is	**Between the 25 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	**30 days upon receipt of valid 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 and** **(ii) the LIBOR rate applicable at the time for amounts due in other currencies. LIBOR is the 6 month London Interbank Offered Rate quoted under the caption "Money Rates" in The Wall Street Journal for the applicable currency or if no rate is quoted for the currency in question then the rate for United States Dollars, and if no such rate appears in The Wall Street Journal then the rate as quoted by the Reuters Monitor**

		Money Rates Service (or such service as may replace the Reuters Monitor Money Rates Service) on the due date for the payment in question, adjusted *mutatis mutandis* every 6 months thereafter (and as certified, in the event of any dispute, by any manager employed in the foreign exchange department of The Standard Bank of South Africa Limited, whose appointment it shall not be necessary to prove.
6	**Compensation events**	**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	**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	**4 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 Arbitration Foundation of Southern Africa (AFSA).**
	Address	**To be known when dispute arises**
	Tel No.	**To be known when dispute arises**
	Fax No.	**To be known when dispute arises**
	e-mail	**To be known when dispute arises**
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	**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**	**Not Applicable**
X1.1	The *base date* for indices is	
	The proportions used to calculate the Price Adjustment Factor are:	**proportion**: **0.65**; **0.20**; **0.15**; **1.00** **linked to index for**: **non-adjustable** **Index prepared by**
X2	**Changes in the law**	**The laws in terms of this contract will be the law of South Africa**
X17	**Low service damages**	
X17.1	The *service level table* is in	**Annexure C**
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 total of the Prices other than for the additional excluded matters.**

	the excluded matters, is limited to	**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	**12 months after the end of the *service period*.**
X19	**Task Order**	
X19.5	The *Contractor* submits a Task Order programme to the *Service Manager* within	**7 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 minimum lir 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 Nuclear Liability

Z13.1 The *Employer* is the operator of the Koeberg Nuclear Power Station (KNPS), a nuclear installation, as designated by the National Nuclear Regulator of the Republic of South Africa, and is the holder of a nuclear licence in respect of the KNPS.

Z13.2 The *Employer* is solely responsible for and indemnifies the *Contractor* or any other person against any and all liabilities which the *Contractor* or any person may incur arising out of or resulting from nuclear damage, as defined in Act 47 of 1999, save to the extent that any liabilities are incurred due to the unlawful intent of the *Contractor* or any other person or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z13.3 Subject to clause Z13.4 below, the *Employer* waives all rights of recourse, arising from the aforesaid, save to the extent that any claims arise or liability is incurred due or attributable to the unlawful intent of the *Contractor* or any other person, or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z13.4 The *Employer* does not waive its rights provided for in section 30 (7) of Act 47 of 1999, or any replacement section dealing with the same subject matter.

Z13.5 The protection afforded by the provisions hereof shall be in effect until the KNPS is decommissioned.

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.

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

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

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

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

Annexure C: Table of low service damages (X17)

- **Low Service Damage Description**	- **Value of Low Service Damages**	- **Limit of Low Service Damage**
Quality / Rework (Per incident) resulting in a repeat malfunction	- 2.5% of Task Order value per incident	- Limited to 10% of the Task Order value
Failure to complete work as per agreed schedule	- 1% of Task Order value per day	- Limited to 10% of Task Order Value

C1.2 Contract Data

Part two - Data provided by the *Contractor*

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. Email Address	
11.2(8)	The *direct fee percentage* is The *subcontracted fee percentage* is	**10%** **0%**
11.2(14)	The following matters will be included in the Risk Register	**N/A**
11.2(15)	The Service Information for the *Contractor*'s plan is in:	**Part 3: Scope of Work**
21.1	The plan identified in the Contract Data is contained in:	**N/A**
24.1	The key people are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job Responsibilities: Qualifications: Experience:	**CV's (and further key person's data including CVs) are in .**
A	**Priced contract with price list**	
11.2(12)	The *price list* is in	**Part 2, C2.2**

11.2(19)	The tendered total of the Prices is	**R**

PART 2: PRICING DATA

TSC3 Option A

C2.1 Pricing assumptions: Option A

1. 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.

2. 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.

3. 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).

4. 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.

5. 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*

REPAIR OF NON-LETHAL ENERGISED PERIMETER DETECTION SYSTEM FENCE AT KRIEL POWER STATION					
Item			**QTY**	**Rate**	**Amount**
	SECTION NO. 1				
100	**PRELIMINARY & GENERALS**				
101	Site Establishment	Item	1		
102	Health & Safety Requirements	Item	1		
103	Project Management & Supervision	Item	1		
104	Transport	Item	1		
105	Site de-establishment	Item	1		
	SUB TOTAL(100)				
	SECTION NO.2				
200	**WORKS INFORMATION**				
201	**ASSESSMENTS**				
202	Identify defects and determine the magnitude of repairs required on the existing fence	Sum	1		
203	Carrying out a detailed assessment of the defects and submit a detailed inspection report to the employer	Sum	1		
	SUB TOTAL(200)				
300	**MODIFICATIONS**				
301	Drilling of old poles	Sum	1		
	SUB TOTAL(300)				
400	**SUPPLY OF FENCE, SPARES AND ACCESSORIES**				
401	Druid fence probe software (as per scope of works)	Sum	1		
402	Wifi Solar Electric Fence energizer units	No	11		
403	New Jurassic White Insulators	Each	48000		
403	New Galvanised wire	m	100		
403	Free standing Y-Picket pole -3m	Each	2100		
	SUB TOTAL(400)				
500	**INSTALLATION**				
501	Labour to replace fence wire , install new poles and insulations	Sum	1		

	SUB TOTAL(500)				
600	**CONCRETE WORKS**				
601	Anchors 15Mpa concrete	m3	120		
	SUB TOTAL(600)				
700	**EQUIPMENT**				
701	Jack Hammer	Hours	1920		
702	TLB	Hours	1920		
	SUB TOTAL(700)				
	SUMMARY				
100	**PRELIMINARY & GENERALS**				
200	**ASSESSMENTS**				
300	**MODIFICATIONS**				
400	**SUPPLY OF FENCE, SPARES AND ACCESSORIES**				
500	**INSTALLATION**				
600	**CONCRETE WORKS**				
700	**EQUIPMENT**				
	TOTAL				

PART 3: SCOPE OF WORK

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

C3.1: EMPLOYER'S SERVICE INFORMATION

Contents

1 Description of the *service*

2 Executive overview

Kriel Power Station plays a vital role in South Africa's energy infrastructure. The facility requires a major overhaul of its perimeter security measures. This proposal details the necessary steps to replace and enhance the existing boundary protection, including:

1. Installing a new electric fence
2. Replacing energizers
3. Upgrading the security software system
4. Replacing high-tension cables

The project's goal is to substantially enhance the power station's overall security, safeguarding personnel, protecting assets, and ensuring uninterrupted operations.

South African law mandates compliance with specific regulations for electric fence installations. The Electric Machinery Regulations, published in March 2011 under the Occupational Health and Safety Act of 1993, require all non-lethal electric fences to meet SANS 10222-3 standards. This specification outlines the minimum requirements for a Non-lethal Energised Perimeter Detection System (NLEPDS) that Eskom and its subsidiaries must follow to secure their facilities.

For the purposes of this document, the terms "Non-lethal Energised Perimeter Detection System (NLEPDS)" and "Non-lethal Electric Fence System (NLEFS)" are used interchangeably.

3 Employer's requirements for the *service*

4 Description of the services

This scope of work outlines the key requirements for implementing a high-quality Non-lethal Energised Perimeter Detection System (NLEPDS) at Kriel Power Station. It details the necessary functional, operational, and performance standards. In addition,

The main objective of this is to replace the existing NLEPDS. This upgrade aims to:

1. Discourage unauthorized entry attempts
2. Boost the ability to detect and respond to potential threats
3. Upgrade systems for monitoring and reporting security events
4. Meet current security regulations and standards
5. Improve the overall efficiency and dependability of the perimeter security infrastructure

5 Maintenance and Repairs

Functional requirements

NLEPDS components and operation

The NLEPDS serves three main purposes:

1. Deterrence: Discourage unauthorized individuals from entering protected areas
2. Detection: Identify and alert security to any unauthorized entry attempts
3. Delay: Slow down potential intruders trying to illegally access the site

An NLEPDS consists of electrified bare conductors that form a barrier. These wires carry pulses of electric current from an energizer, delivering non-lethal shocks to deter intruders. The energizer periodically sends controlled electrical pulses to the connected fence.

If someone tampers with the fence, it triggers an alarm recorded by the security electric fence energizer system. This can activate various security measures such as:

- Sirens
- Strobe lights
- CCTV cameras
- Public address systems
- Notifications to control rooms (local and remote)
- Alerts to authorized Eskom personnel via email, SMS, or phone

The system detects intrusion attempts when fence wires are cut or short-circuited. Essentially, security electric fences function as sensor arrays that:

- Create a physical barrier
- Act as a psychological deterrent
- Integrate with broader security and intrusion detection systems

The number of energizers used depends on the perimeter length. Multiple energizers require synchronization to pulse simultaneously. A display unit serves as the system's graphical interface, showing the status of different perimeter zones and sectors.

When a breach occurs in any zone:

1. It's displayed on the PC
2. An alarm is sent to the monitoring system, indicating the triggered zone
3. Security lights for that zone are activated via a relay card
4. CCTV cameras, including PTZs, begin recording in the affected area
5. A pre-recorded warning message plays through the PA system to warn potential intruders

The NLEPDS generally comprise of the following components / sub-systems:

a) Electric fence conductors
b) Power supply
c) Configuration PC / Controller
d) User interface / Display unit
e) Synchronising equipment/mechanism
f) Relay cards
g) Communication infrastructure
h) Energizer(s)
i) Posts (stain, intermediate & corner)
j) Anti-tunnelling structure
k) Vegetation control slab

Below is an overview of the requirement for the components/ sub-systems of the NLEPDS:

Electric fence conductors

a) Perimeter installation of electric fence conductors
b) Fence structure:
   - Vertical sectors: Areas covered by individual energizers
   - Horizontal zones: Divided sections of the perimeter

c) Overlapping conductor installation for redundancy

d) Maximum 100 mm spacing between conductors (SANS 10222-3 2016 compliant)

Configuration PC / Controller

a) Zone and sector configuration via controller

b) Alarm reset and acknowledgment capabilities

c) Comprehensive system settings management

User interface / Display unit

a) Visualization of fence zones and alarms

b) Real-time alarmed zone display

c) Alarm viewing and acknowledgment functions

d) Possible integration of controller and display unit with strict access control

Relay cards

a) Alarm relay and integration with other security systems

b) Configurable for grouped and individual alarm

Communication infrastructure

a) Robust cabling for harsh conditions and surge protection

b) EMC-resistant communication medium (e.g., fibre optics)

c) Open standard protocols for interoperability

d) Remote monitoring via Eskom Telecom or third-party infrastructure (compliant with cyber security standards)

Energizer(s)

a) Safe operation under normal conditions

b) Minimum of two energizers per installation for reliability

c) 15-year minimum lifespan for energizers and associated equipment

Equipment placement:

a) All electronic components of the Non-lethal Energised Perimeter Detection System (NLEPDS) must be installed within the protected site.

- Primary location: Dedicated security equipment room and associated cabinets.

- Alternative: If no dedicated room exists, suitable equipment housing must be provided that offers comparable operating conditions to a security equipment room.

Cabinet requirements:

a) Only cabinets approved by Eskom may be used to house NLEPDS equipment.

b) These cabinets must comply with Eskom's Specification for standard equipment cabinets (240-60725641).

Environmental requirements

a) Environmental resilience:

The Non-lethal Energised Perimeter Detection System (NLEPDS) and all its components must function effectively across all South African climate conditions, including hot, cold, dusty, and humid environments.

The following specifications represent the minimum environmental tolerances required without compromising performance or reducing the system's lifespan:

b) Design criteria:

The system must be engineered for 'special' environmental conditions, as adapted from Table 2 of IEC 60255-1.

c) Temperature range:

- Control/equipment room installations: -25°C to +55°C
- Substation yard enclosure installations: -25°C to +70°C

d) Altitude tolerance:

Up to 2,500 meters above sea level

e) Pollution resistance:

Suitable for urban areas with industrial activities, without special precautions against sand or dust (compliant with classes 3C2 and 3S2 in IEC 60721-3-3)

f) Humidity tolerance:

98% relative humidity (24-hour average

g) Installation environment:

Electronic equipment will primarily be installed in control/equipment rooms, with or without air conditioning. The equipment must maintain optimal performance and longevity under these conditions.

h) Temperature resilience:

Energizers must be constructed to withstand extreme temperatures encountered during normal use.

Compliance verification: Test 18 of SANS 60335-2-76.

Performance requirement: Energizer output characteristics (as defined in 22.108 of SANS 60335-2-76) must not deviate by more than 10% under extreme temperature conditions.

i) Post-test integrity:

After undergoing the temperature endurance test:

The energizer must show no changes that impair its future use.

If sealing compound is used, it must not flow out to the extent that live parts become exposed.

The energizer must continue to meet the requirements of clause 8 of SANS 60335-2-76, which pertains to protection against access to live parts.

Electrical operating requirements

a) Electrical environment resilience:

The system will be installed in areas near or under power lines, where inductive coupling could induce high voltages on the electrified fences. All Non-lethal Energised Perimeter Detection System (NLEPDS) components must operate reliably under these conditions without failure.

b) Electromagnetic interference immunity:

NLEPDS components must function without being affected by various device frequencies, including:

Cell phones

Portable radios

Telephones

Communication transmitters

DC relay operations

AC supply switching

Cable-borne interference

Other potential sources of electromagnetic disturbance

c) High voltage environment adaptation:

All NLEPDS components must operate effectively in environments with frequent high voltage switching, adapting to high levels of radiated electrical interference due to their physical placement or direct connection to electrical equipment.

d) Non-interference requirement:

NLEPDS components must not generate any interference that could impair their own performance or that of nearby equipment.

e) Energizer short circuit tolerance:

The energizer must be capable of withstanding a continuous short circuit on the electric fence structure without failure.

Operational safety requirements

a) Safety notification:

Before energizing electric fence conductors, all authorized individuals within or entering the secure area must be informed of the fence's location.

b) Additional safety measures:

In situations where there's a risk of secondary injury, appropriate extra safety precautions should be implemented.

c) Neighbouring fence safety protocol:

When two independently timed electric fences are in close proximity (less than 2.5 m apart), and both have wires no higher than 1,500 mm above ground or walking level, a barrier fence must be installed between them. This barrier fence must:

- Be at least 1,500 mm tall
- Have no openings larger than 50 mm in any direction
- Be positioned either:
  * Maximum 100 mm from either electric fence, or
  * Minimum 2,000 mm from either electric fence
- Be constructed to prevent access between the two electric fences

This protocol aims to prevent simultaneous contact with both electrified fences.

Alarming

a) Relay contact configuration:

All status and alarm indication relays must use changeover contacts, allowing for either Normally Open (NO) or Normally Closed (NC) wiring to the Interface Distribution Frame (IDF) as needed.

b) Alarm output capabilities:

The alarm output must be able to activate the following security systems:

Substation security lighting

CCTV system equipment

Public Address (PA) system recorded voice warnings

Sirens

Strobe lights

c) Interface documentation:

The tenderer must provide detailed drawings and manuals specifying how the system will interface with the aforementioned security systems.

d) Indication signal type:

All indications must be supplied as potential-free changeover contacts.

e) Remote alarm management:

Remote alarm resetting must be possible. This feature must comply with Eskom's information security standard for IT/OT and third-party remote access (32-373).

f) Energizer self-monitoring:

The energizer must have self-monitoring capabilities, alerting to any out-of-bounds conditions or system failures.

g) NLEPDS triggering events:

The Non-lethal Energised Perimeter Detection System (NLEPDS) shall activate in response to any of the following potential intrusion indicators:

1. Detection of digging activity beneath the electric fence
2. Short-circuiting of electric fence conductors
3. Cutting of electric fence conductors (open circuit)

h) Alarm response sequence:

When the NLEPDS is triggered, the following sequence of events and interoperation of on-site security technologies shall be possible:

1. Immediate reporting of each violation to the security control centre and notification to the security controller
2. Ability for the security controller to address unauthorized individuals using the Public Address System
3. Activation of security perimeter lights in the affected fence zone(s)
4. Initiation of recording by CCTV cameras (including PTZs) in the affected fence zone(s), with camera analytics used for intruder tracking
5. Capability for the security controller to confirm the arrival of responders on-site following an alarm/intrusion event

i) Alert distribution:

The system shall be capable of sending security alerts and confirmations via email and SMS.

Monitoring

a) Monitoring flexibility:

The system must support both local and remote monitoring of intrusion alarms.

b) Display unit functionality:

Client stations/display units must show the site configuration and configured fence zones.

c) Alarm detail requirements:

Generated intrusion alarms must include specific details about triggered fence zones to enable prompt response.

d) Event logging:

All security alarms and events must be accurately date-and-time stamped for traceability and investigative purposes.

e) Futureproofing and expandability:

In line with Eskom's long-term strategy to develop security regional centres, the NLEPDS system must be expandable and future-proof. It should allow for routing alarms to these regional centres without requiring extensive re-engineering.

f) Communication protocol:

Communication between the protected site and remote monitoring centre(s) must utilize open communication protocols.

Electrical specification

Power supply
a) Primary power source:

The system must utilize the standard AC power supply available at Eskom sites, which is typically a 230V (± 10%), 47 – 51Hz single-phase AC supply.

b) Power fluctuation resilience:

The system must maintain proper functioning during power supply failures, restorations, under-voltage, or over-voltage conditions.

c) Backup power requirement:

A battery backup system capable of providing at least 12 hours of operation must be included.

d) DC power option:

Where available, Eskom will provide power using the site's DC system.

e) Energizer power input flexibility:

The energizer must be capable of operating with both AC and multiple DC voltage inputs (48V/110V/220V).

f) DC voltage tolerance:

When operating on DC power, the system must function as per specifications within a voltage range of 0.8 to 1.2 times the nominal voltage.

Energizer requirements
Energizer characteristics (as per SANS 60335-2-76), tested with a 500Ω load at rated voltage:

a) Voltage output: Peak value above 7.5kV, not exceeding 10kV

b) Energy output: Between 5J and 8J for a 500Ω load

c) Impulse frequency: Maximum 1 Hz

d) Impulse duration: Not exceeding 10 ms

Additional requirements:

e) Visible HV isolating switch with earth connection in off state

f) Clear ON/OFF positions on isolation switch, designed for high voltage handling

g) Safety mechanism (e.g., watchdog) to monitor and correct voltage/energy levels

h) Minimum 20km multi-wire fence powering capability

i) Type A energizer classification (battery-operated, mains-connectable

j) External power supply connection terminals

k) Class II appliance compliance (SANS 60335-1), featuring enhanced insulation for safety without relying on protective earthing

Conductors and high-tension (HT) cables
Conductors:

a) Performance requirements:

Must provide rated current carrying capacity.

Must have low resistance.

b) Diameter specifications:

Sufficient to maintain high current-carrying capacity.

Adequate to maintain voltage meeting the electric fence design specifications.

Ensure recommended minimum electrical parameters are met

c) Primary function:

Provide deterrence along the electric fence perimeter by delivering an electric shock to potential intruders.

d) Material option for extended perimeters:

Aluminium wires may be used for longer perimeter distances.

e) Standard conductor specification:

Conductor/trace wires should be made from 2.24mm diameter solid fully galvanized steel wire.

f) Installation tension:

The 2.24mm solid fully galvanized steel wires should be installed with a maximum pulling strength of 50 kg.

g) Durability requirement:

Mechanical strength must be sufficient to withstand the operating conditions specified in this standard.

h) UV resistance and longevity:

Wire conductor materials must resist ultra-violet radiation and maintain integrity for a minimum of 15 years.

i) Entanglement prevention:

No objects that could cause entanglement (such as barbed wire or razor wire) should be attached to any conductors, whether live or earth.

j) Temperature and voltage tolerance:

Conductors must withstand the highest expected operating temperature and voltage.

High-Tension (HT) cables:

a) Application:

Used to connect the energizer to fence conductors

b) Material composition:

Inner core of HT cables must match the material of the electrified fence conductors/trace wires

c) Space fence insulators on brackets and poles so bare electric wires are no more than 100 mm apart on any face.

d) Place insulated high-tension cables as per SANS 10222-3, clause 4.3.1.1.

e) Position bare high-tension conductors according to SANS 10222-3, clause 4.3.1.2.

f) Secure insulated high-tension cables following SANS 10222-3, clause 4.3.2.1.

g) Attach bare high-tension conductors as specified in SANS 10222-3, clause 4.3.2.2.

h) Use aluminium cable ties to fasten all cables to NLEPD structures or poles.

i) For HT cables ending on NLEPD conductor/trace wires:

Secure at two points

Terminate and seal with "Denzo" tape

j) Apply "Lock-Tight" to all bolts.

k) Shield conductors leaving ground level with U-shaped GI pipe sleeves, extending at least 300mm above ground.

l) Install all HT cables in suitable conduit or GI pipe sleeves, ensuring moisture cannot enter.

m) Fence high-tension cables and conductors other than HV cables shall only be buried if they are run

in conduit, pipe, trunking or in similar protection.

n) Excavate cable trenches where required, and lay HT cables.

o) Trenches will be 300 mm wide and vary in depth between 500 mm and 1000 mm, depending on ground conditions.

p) Danger tape will be laid in trenches 300 mm above conductors, before backfilling and compacting.

q) Installation to be done in such a manner as to prevent moisture from entering GI pipe sleeves and conduits.

r) The high-tension cable shall have the following properties:

be buried in pickable ground with a minimum cover of 300 mm;

be buried under roadways with a minimum cover of 500 mm and the backfill shall be properly compacted; and

have adequate cover when buried in rock or concrete or in a building element.

NOTE: Conductors and AC-circuits shall be identifiable in accordance with clause 4.2.3 of SANS 10222-3.

Insulators

All insulators must meet the following specifications:

a) Design criteria:

Insulators must be designed to prevent arcing under all conditions, including moisture and wet environments.

b) Sample submission:

At the time of tender submission, the following must be provided for Eskom's approval:

Three (3) marked samples of proposed insulators

5 meters of conductor / trace wire

c) Insulator testing:

Porcelain and non-metallic insulators must undergo the following test:

Minimum arcing voltage withstand: 20kV

Test configuration: Voltage applied between mounting screw and conductor / trace wire

Test conditions: Insulators soaked in 2% saline solution to simulate coastal or acid rain environments

Pass criteria: No arcing should occur during the test

d) Material requirement:

Non-metallic with guaranteed UV protection for a minimum of 15 years.

e) Strain insulator strength:

Must withstand 300 kg pulling force at 45°C when attached to a 2.24 mm solid fully galvanized steel wire, using standard attachments.

f) Mechanical properties:

Must comply with Annex A.1 of SANS 10222-3 for general mechanical properties.

g) Length deviation for polymer and polyester-based insulators:

Maximum 5% deviation when tested according to Annex A.2 of SANS 10222-3.

h) Length deviation for ceramic insulators:

Maximum 5% deviation when tested according to Annex A.3 of SANS 10222-3.

i) Water absorption:

Maximum 3% deviation for all insulators when tested according to Annex A.4 of SANS 10222-3.

j) Distortion test:

Conditions: 250 g minimum weight suspended from any position on the insulator

Temperature: Minimum 45°C

Duration: Minimum 1 hour

Maximum allowable distortion: 20% from original form

Synchroniser

The synchronization mechanism shall be used to synchronize multiple energizers, allowing them to function as a single energizer with multiple outputs, all firing simultaneously with one single pulse.

Lighting protection

a) The system will be installed where it will be subject to voltage surges due to lightning, a variety of line faults, power interruptions and high voltage switching conditions. The system shall be able to operate without failure under all of the above-mentioned conditions. Therefore, it is imperative that the system be adequately earthed.

b) Protection against high voltage transients shall be provided on both the signal and power circuitry, without impairing the system's electrical parameters, sensitivity, or performance.

c) Lightning arrestors shall comply with the following additional requirements:

1) Comply with the requirements for fence insulators in Annex B of SANS 10222-3.;

2) Comply with corrosion protection requirements as stipulated in Annex F of SANS 10222-3.

3) Provide a resistance against ultra-violet radiation and shall not deteriorate within a minimum time period of 15 years; and

4) Have a maximum internal arc over voltage of 20 000V.

5) Lightning arrestors shall be capable of withstanding all the mechanical stresses that the wire conductor and its fixture to the electric fence will be subjected to, in terms of normal expected weather conditions.

Earthing

a) General compliance:

Electrical fence earthing must follow the latest Eskom earthing standards.

b) Perimeter earthing:

Install a 35mm² copper earth rod ring around the entire perimeter, connected to the main earth mat.

c) Fence post earthing:

Connect all fence posts to the ring main using 35mm² earth rods. Light posts should be connected with 6mm² stranded copper.

d) Joint specifications:

All joints must be brazed/crimped to Eskom's approval, with minimum 75mm overlap.

e) Cabinet earthing:

Earth all electrical cabinets (e.g., energizer enclosures, doors) with 6mm² stranded copper to an earth rod or graded earth mat.

f) Earth peg placement:

Install earth pegs at the start/end of each zone, maximum 30m apart, connected to the main earth rod and NLEPD structure components.

g) ACB earthing:

Install three earth pegs in a triangular layout, 1.8m apart, on both sides of the ACB, connected to the main earth rod and first post of the NLEPD structure.

h) Earth peg specifications:

Use 1.5m long, copper-coated earth pegs.

i) ACB-adjacent earthing:

Connect all earth pegs, lightning diverters, and energizer ground connections with 16mm² copper earthing cables on both sides of the ACB.

j) Energizer earthing:

Lay 16mm² copper earth cables from the energizer to earth pegs on both sides of the ACB.

k) Periodic earthing:

Every 60m along the NLEPD structure, earth strain or corner posts to an earth rod, connecting to the next section's earth and back to the site earth mat.

l) Strain post earthing:

Loop all earth conductors/trace wires at each strain post, including the catenary/local earth reference wire. Connect to an earth spike and use Denzo tape to prevent chemical reactions between different materials.

m) Concrete slab earthing:

Install 6mm stranded copper underneath the concrete slab, bonded to all strain, in-line, corner, and intermediate posts.

Wire ways and conduits

a) Install wire ways according to SANS 10222-3, clause 4.5.1.

b) Use conduit fittings and sizes that comply with SANS 10222-3, clause 4.5.2.

c) Protect all underground wiring by placing it inside:

- Conduit
- Trunking
- Pipe
- Protective enclosure Note: Wire with an extruded polyethylene sheath designed for underground electric fencing qualifies as being in a protective enclosure.

d) Properly seal all conduits, ducts, and similar components to prevent water infiltration.

Electromagnetic compatibility requirements

Installation clearance for electric fencing:

The electric fence must be installed with sufficient clearance from all potential obstructions, including vegetation. This clearance should account for both normal and wet conditions, ensuring that nothing can:

Come into direct contact with the electric fence.

Come into close proximity to the electric fence.

The purpose of this clearance is to prevent any interference with the communication system of the electric fence. This requirement helps maintain the fence's effectiveness and reliability in all weather conditions.

a) Compliance standard:

Installation of electric fences in proximity to overhead power lines must adhere to Annex BB of SANS 60335-2-76.

b) Support structure restriction:

Electric fence conductors must not be mounted on any support structure used for overhead power lines.

c) Crossing prohibition:

Connecting leads and electric security fence wires must not cross above overhead power lines.

d) Crossing guidelines:

- Avoid crossings with overhead power lines whenever possible.
- If unavoidable, crossings must be made underneath the power line.
- Crossings should be as close to a right angle as possible.

e) Height restriction:

When installed near an overhead power line, the height of connecting leads and electric security fence wires must not exceed 3 meters above the ground.

These guidelines aim to minimize potential interference and safety risks associated with the proximity of electric fences to overhead power lines.

f) General precaution:

When installing and operating electric fences near communication lines, measures must be taken to prevent harmful interference.

g) Compliance standard:

Installation of electric fences close to communication lines must adhere to Annex D of SANS 10222-3.

h) Crossing prohibition:

Connecting leads and electric security fence wires must not cross above overhead communication lines.

i) Wiring separation:

Alternating current supply wiring must not be installed in the same conduit as signalling leads associated with the electric fence installation.

j) Crossing angle:

When an electric fence connection lead or wire crosses an overhead communications line, the crossing angle must be larger than 45°.

k) Parallel installation:

Avoid running electric fences parallel to communication lines when possible.

l) Short parallel distance separation:

For parallel installations less than 100 m in length, maintain a minimum separation of 1 m between the highest part of the electric fence and the communication line.

m) Long parallel distance separation:

n) For parallel installations exceeding 100 m in length, maintain a minimum separation of 2.5 m between the highest part of the electric fence and the communication line. These guidelines aim to minimize potential interference between electric fences and nearby communication lines.

Leakage current and electric strength

a) Leakage current limits:

At operating temperature, system components must maintain leakage current within acceptable limits and demonstrate adequate electric strength.

b) Leakage current compliance:

Verification of leakage current requirements at operating temperature must be conducted in accordance with Section 13 of SANS 60335-1.

c) Transient overvoltage protection:

Energizer specifications:

Must withstand potential transient over voltages.

Compliance to be verified through tests 14.102 to 14.104 of SANS 60335-2-76.

During testing, no disruptive discharges should occur.

Surge protection devices are permitted to operate during tests, unless otherwise specified.

Mechanical requirements

Energizer IP rating

a) IP system compliance:

Energizers marked with the first numeral of the IP system must fulfil relevant requirements of SANS 60529.

b) Outdoor installation IP rating:

Energizers installed outdoors must have an IP rating of IP53.

c) Indoor installation IP rating:

Energizers installed indoors must have an IP rating of IP51.

d) Personal safety:

The enclosure must prevent or limit access to hazardous parts by human body parts or held objects.

e) Equipment protection:

The enclosure must guard against ingress of solid foreign objects.

f) Dust protection:

Dust ingress prevention measures must be in place.

g) Water protection for outdoor units:

Outdoor energizers must be protected against jetting water.

h) High voltage protection:

Safeguards against high voltage apparatus must be provided.

i) Weather resistance:

Protection against adverse weather conditions is required.

j) Moisture protection:

The energizer enclosure must provide moisture protection according to its classification.

Compliance verification: Tests in Section 15 of SANS 60335-1.

Energizer mechanical strength

a) Energizer robustness:

Must withstand rough handling expected in normal use.

Compliance test: Spring hammer test (Section 21.1 of SANS 60335-1).

Requirement: No damage impairing compliance with the test.

b) Insulation strength:

Accessible solid insulation parts must resist penetration by sharp implements

Compliance test: Tests in Section 21.2 of SANS 60335-1

Requirement: No breakdown during testing

c) Drop resistance:

Energizer must withstand dropping effects

Compliance test: Section 21.101 of SANS 60335-2-76

Requirement: No damage after the test

d) NLEPDS component resilience:

Mechanical shock and vibration must not affect:

Functioning of NLEPDS components

Life cycle of NLEPDS components

Energizer marking requirements

Compliance with the following requirements must be verified through inspection:

a) General markings must comply with clause 7 of SANS 60335-1.

b) Required markings on the energizer:

Rated voltage or voltage range in volts

Supply nature symbol (unless rated frequency is marked)

Rated power input (watts) or rated current (amperes)

Manufacturer or responsible vendor identification

IP number for water ingress protection (if other than IPX0)

c) Warning label requirement:

This warning must be placed near the terminal cover: "Before obtaining access to terminals, all supply circuits must be disconnected"

d) Range marking:

For energizers with a range of rated values operable without adjustment, mark lower and upper limits separated by a hyphen.

e) Voltage setting visibility:

For adjustable voltage energizers, the set voltage must be clearly visible. For infrequent changes, a fixed wiring diagram is sufficient.

f) Multiple voltage markings:

For energizers with multiple rated voltages or ranges, mark the rated power input or current for each. If the voltage range difference is within 10% of the arithmetic mean, marking can relate to this mean value.

g) Input-voltage relationship:

Clearly mark upper and lower limits of rated power input or current to show the relationship with voltage.

h) Symbol compliance:

Any used symbols must comply with 7.6 of SANS 60335-1.

Environmental impact

Temperature Endurance:

a) Energizers must withstand extreme temperatures encountered in normal use.

Compliance test: Test 18 of SANS 60335-2-76

Performance requirement: Output characteristics (as per 22.108 of SANS 60335-2-76) must not deviate by more than 10%

b) Post-test integrity:

No changes impairing further use.

Sealing compound (if any) must not expose live parts.

Must still meet requirements of clause 8 of SANS 60335-2-76 (protection against live parts access).

Corrosion Protection:

c) Metal-encased energizers:

Must be adequately protected against corrosion.

Compliance test: Salt mist test (IEC 60068-2-5) as specified in 31 of SANS 60335-2-76

Post-test requirements: No deterioration, coating intact and adhered to metal surface.

d) Corrosion protection performance must comply with Annex F of SANS 10222-3 standard

e) Inland equipment requirements (beyond 6 km from high water mark):

500-hour minimum test period

Post-test visual inspection:

i. Non-metallic coatings: No major corrosion signs

ii. Metallic coatings: No major corrosion exceeding 25% of tested surface area.

f) Coastal area equipment requirements:

2,000-hour minimum test period

Post-test visual inspection:

i. Non-metallic coatings: No major corrosion signs

ii. Metallic coatings: No major corrosion exceeding 25% of tested surface area.

Safety requirements

Fault condition safety:

Energizers must be constructed to minimize risks of fire, mechanical damage, and electric shock during abnormal or careless operation.

Compliance tests: Fault conditions tests (19.11, 19.12, and 19.14 of SANS 60335-1)

Test requirements:

a) No emission of flames, molten metal, or hazardous amounts of poisonous/ignitable gas

b) Temperature rises must not exceed values in Table 9 of SANS 60335-1

Temperature control:

Energizers and surroundings must not reach excessive temperatures.

Compliance test: Temperature rise determination under conditions in 11.2 to 11.7 of SANS 60335-1

Protection against live parts:

Adequate protection against accidental contact with live parts required.

Compliance test: Inspection and tests listed in 8 of SANS 60335-1

Output terminal placement:

Designed to prevent external conductors from contacting the enclosure.

Compliance check: Inspection

Insulation requirements (for mains-operated and mains-connectable battery-operated energizers):

No coincidental gaps between supplementary and basic insulation

No direct access to live parts through reinforced insulation gaps

Compliance check: Inspection

Battery compartment safety:

Terminals and accessible metal parts must have double or reinforced insulation from live parts.

Compliance check: Inspection, measurement, and relevant insulation tests

Battery connection safety (for battery-operated and mains-connectable battery-operated energizers):

Must include means to prevent electric shock from energizer output voltage during battery connection.

Compliance check: Inspection

Radiation and toxicity:

Energizers shall not emit harmful radiation or present a toxic or similar hazard due to their operation in normal use. The appliance is deemed to comply with this requirement without testing

Installation

a) Install all Electric Fence parts as per SANS 10222-3, focusing on sections 10 and 11 for General and Specialised Electric Security Fences.

The fence can be:

Placed between two barrier fences.

Attached to an existing fence.

Mounted on a precast concrete wall or palisade fence.

Self-supporting.

c) For wall-top fences, follow SANS 10222-3, clause 10.4.1.

d) For piggy-back fences, adhere to SANS 10222-3, clause 10.4.2.

Non-standalone NLEPDS structure requirements

a) Construct brackets from materials strong enough to support their designated wire conductors.

b) Ensure brackets can withstand local temperature and environmental conditions.

d) Use fence insulator attachment devices that comply with SANS 10222-3, clause 10.2.2.5.

e) For steel brackets, follow dimensions/sizes specified in SANS 10222-3, clause 10.2.2.2.

f) Non-steel brackets or alternative designs must match the strength characteristics outlined in SANS 10222-3, clause 10.2.2.2 (a, b, c, or d).

g) For steel main supports, bracket dimensions/sizes must adhere to SANS 10222-3, clause 10.2.3.2.

h) Rolled steel brackets or those made from other materials must exhibit mechanical strength equivalent to brackets described in SANS 10222-3, clause 10.2.3.2 (a, b, c, or d).

Civil requirements

a) Place a reinforced concrete anti-tunnelling T-shaped beam directly under the energized perimeter fence.

b) Dig a trench 100 mm wide and up to 600 mm deep beneath the fence line. Stop if hard rock is encountered. Spread excavated material in the barrier fence area.

c) Install 100x100x3 mm steel mesh, 500 mm wide, in the trench centre. Leave 100 mm above ground, bend 30 mm over ground level to attach slab reinforcement and cast with surface slab.

d) Fill trenches with 20 MPa vibrated mass concrete.

e) Cast a 20 MPa concrete slab, 800 mm wide, level with surrounding ground. Center the beam in the slab.

f) Lay 100x100x3 mm steel mesh, 600 mm wide, 75 mm above ground, 300 mm on each side of the beam. Cast with vibrated concrete to form the slab.

g) Pour slab on graded, compacted ground with a consistent slope between posts.

h) Maintain maximum 100 mm distance between slab and bottom conductor/trace wire.

i) Center conductors/trace wires in the slab.

j) Finish slab sides and top with smooth wood shuttering.

k) Cast panels 800 mm wide x 3000 mm long x 75 mm thick at sides, 150 mm at centre, in alternating sections.

l) Butt all joints.

m) Install 800x150x10 mm soft board expansion joints every 3000 mm maximum.

NLEPDS signage requirement

a) Construct warning signs from materials resistant to expected weather conditions and UV radiation throughout their lifespan.

b) Install warning signs as per SANS 10222-3, clause 4.7.

c) Clearly identify all electric fences with prominent warning signs.

d) Securely attach signs to fence posts, the fence itself, fence elements, or building components within 200 mm of the electric fence.

e) Use warning signs at least 200x100 mm in size.

f) Place signs on access gates and within 500 mm of access areas with electric fences.

g) Mount signs between 1.5 m and 2.0 m above ground level.

h) Install signs within 2000 mm of each corner or bend in a straight fence section.

i) In high-density areas, space signs no more than 10 m apart.

j) In low-density areas, space signs no more than 100 m apart.

k) Position signs for clear visibility.

l) Include at least one warning sign on each side of the electric security fence.

Place warning signs at:

Each gate.

Every access point.

Intervals not exceeding 10 m (population density dependent).

Next to chemical hazard signs for emergency services.

m) For fences along public roads or pathways, attach warning signs frequently to posts or clamp firmly to wires.

n) Design signs with a yellow background on both sides and black text reading "CAUTION: Electric fence".

Documentation

a) Energizer instructions must include:

Electric fence installation guidelines.

Energizer-to-fence connection methods.

b) Provide installation instructions for NLEPDS components if not self-evident. Clearly state polarity sensitivity for relevant components.

c) Include advice on proper barrier use to prevent misuse and false alarms.

c) Provide a list of field-replaceable spare parts.

d) Ensure compliance with Eskom documents (contractor-submitted).

e) Include electrical and mechanical specifications for all equipment.

f) Provide equipment wiring diagrams.

g) Detail installation, commissioning, and maintenance procedures.

h) Include all module and circuit diagrams.

i) Provide schematic diagrams.

j) Include installation drawings.

k) Additional required information:

Power supply requirements

Performance characteristics (including MTBF)

Wiring and mounting instructions

Output ratings

Adjustment instructions (specifying any special tools)

Maintenance, testing, and servicing schedule

l) Issue a Certificate of Compliance (CoC) for all electric fence installations and extensions.

m) Ensure the electric fence system CoC complies with regulations 12(4) and 13(1) of the Electrical Machinery Regulations, 2011 of the Occupational Health and Safety Act, Act No.85 of 1993.

n) The CoC must comply with Annex G of SANS 10222-3.

6 Spares Supply

a) Supplier must provide a formal OEM support and agent agreement letter for local spares and repair services.

b) Supplier to offer repair services for faulty units, subunits, and modules.

c) Enable direct replacement spare procurement from manufacturers.

Allow Eskom to contract external companies for equipment repairs.

d) Suppliers must notify Eskom before discontinuing or modifying any system part to allow spare parts procurement for installed base.

e) Repair and return service turnaround time: 7 days.

f) Ensure NLEPDS component spares (including energizers) availability for 10 years post-model discontinuation.

g) Provide a 5-year pro-rata warranty.

h) Return faulty units, subunits, or modules to contractor for warranty repair or replacement.

i) Warrant repaired items against same fault recurrence for 3 months from return date.

j) Offer repair and return service for out-of-warranty equipment as needed.

k) Energizer and associated NLEPDS components must have a minimum 2-year guarantee.

l) The design of the NLEPDS shall comply with the standard technology development methodology as defined in PTM&C Technology Development standard (240-8364419).

m) Suppliers shall ensure that system and its components comply to tests stipulated in Annex C. Compliance to some or all the tests listed will be confirmed through equipment demonstrations, factory acceptance test (FAT) as well as site acceptance test (SAT). The conducting of these tests by Eskom does not replace supplier’s responsibility to ensure that the equipment offered complies with the stated test requirement.

7 Contractor’s Working Hours

a) The contractor shall work in accordance with the power station working hours daily including working on weekends/public holidays when issues arise for the duration of the contract.

8 Specific duties of the *Contractor*

a) Execute the scope of work as outlined in this document.

b) Manage subcontractors (if applicable).

c) Ensure quality of work (with an approved quality control plan (QCP)) and compliance with standards.

d) Provide all necessary training on the new installation.

e) Provide all required documentation at project completion.

f) Procurement department:

g) The procurement team shall utilise this document for the enquiry process and during the product development phase.

9 Report requirements

a) Regular site inspections by the Project Manager and Security Consultant.

b) Weekly progress meetings with all key stakeholders.

c) Monthly written reports detailing progress, issues, and upcoming work.

d) Quality assurance checks at key project milestones.

e) Final inspection and sign-off process involving all relevant parties

10 Exclusions

N/A

11 Misuse, abuse and accidental damage

a) The contractor will not be liable for any loss or damage to equipment as a result of the following:
   i) Damage caused by other contractors appointed by Eskom.
   ii) Damage due to proven defects to existing Eskom infrastructure, this includes leaks emanating from daily operations.
   iii) Vandalism: this excludes vandalism caused by the contractors' employees.

b) The contractor will be liable for any loss or damage to equipment as a result of the following:
   i) Incorrect storage of equipment
   ii) If equipment was stored outside of areas designated by Eskom.
   iii) Damage as a result of his own employees.
   iv) Damage of equipment in transit.

12 Authorised Persons

Only persons authorized by the department of labour may carry out any work on the equipment in terms of the contract in case of sub-contracting (Main *Contractor* to provide proof of authorisation of subcontractor).

13 Legal Obligation

The *Contractor* will replace parts on an inspection which are discovered to be potentially dangerous to the safety of the public, irrespective of whether such parts are excluded from the contract or not after the contractor has received a written instruction to do so.

14 Quality

The *Contractor* shall utilize the OEM approved and certified parts, and components

15 Spare Parts

The *Contractor* shall ensure the spare parts required by the *Employer* are catalogued for the employer to keep spares (consignment stock) to ensure that downtime is kept to a minimum.

If DCFs exist, they will be provided to assist the Supplier with information for all spares to be procured. Each spare is identifiable by means of component/part description, OEM and/or OEM part number. Where the information available on the spares list in Section **Error! Reference source not found.** or that supplied by materials management as catalogued is not sufficient to positively identify the applicable spare, the *Supplier* shall notify the *Employer* such that the *Employer* can assist the *Supplier* in identifying the correct spare. The spares to be provided to be the same as the original component, in all technical respects, as those utilised on the equipment it is intended for. This includes, but is not limited to, design (including dimensions and material specifications) and manufacturing (including manufacturing processes, standards and acceptance testing).

The *Supplier* shall be liable to replace a supplied spare that is found to be defective and/or wrong.

16 Employer (Kriel Power Station) communication book

To aid effective two – way communication, the contractor shall provide an onsite attendance register which will be kept at the EMD offices

17 Contractor to note and comply with the following:

The *Employer* reserves the right to have any of the *Contractor's* personnel removed off site without any compensation to the *Contractor* in the event of the *Contractor's* personnel being in contravention with the OHS Act or any of the *Employer's* rules, regulations and procedures.

a) The *Employer* reserves the right to request disciplinary /corrective action when required.
b) The *Contractor* will operate under the direction and instructions of the *Employer*.
c) The *Contractor* will provide all safety apparel, safety equipment and cleaning materials to comply with the construction regulation.

18 General Requirements

a) The service provider shall have a formal risk assessment process, identifying risk associated with the electric fence.

19 Maintenance Inspections

N/A

20 Record Keeping

a) Record keeping shall be managed by the relevant maintenance and engineering sections to ensure retrievably archived plant history on site, to the degree of detail necessary for plant condition and diagnosis. The necessary history information shall not be solely entrusted to off site service providers or other offsite organisations.

21 Documentation

The spares information, Data sheets, drawings and all other documentation required by the employer will be requested upon commencement of contract and kept by employer

22 Permit to work system

a) Safety Regulations (36-681)" permit to work shall be used when performing work on any Live Plant in Eskom site, an initial risk assessment shall be performed in order to determine if an Eskom Permit to work or LAR shall be required.
b) All safety and risk mitigation policies and requirements are to be put into place before work is to be carried out in the electric fence.
c) A permit to work may not be required for functional operating tests/activities on the fence

23 Recording of Non-Conformances

a) All non-conformances, repairs, renewals or alterations found must be recorded for attention by the owner /user.

24 Information to be provided

If DCF's exist they will provided to the Supplier by Materials Management; the information contained in the forms can assist the Supplier to procure the correct spares. The DCF is required by the Employer's Material Management System to be able to book the item in the stores and the information should be sufficient enough to procure the goods in future. Where a field is populated, the Supplier needs to review and verify/correct the information against the OEM part number for correctness.

The following information to be provided with the spares:

a) Documentation detailing the technical characteristics of the procured spare item. This may be in the form of data sheet or brochure. The Employer reserves the right to reject the documentation if it is not deemed sufficient.
b) Any other additional information that has not been specified on the DCF / scope but necessary for storage, installation, and utilisation of spares where applicable.
c) Supply preservation and storage procedures of goods, where applicable
d) Any spares information which has been omitted which is deemed relevant for spares identification, storage, maintenance, etc.
e) In instances where the Supplier uses another company, other than the item OEM, to provide required information, this to be declared in advance to the *Employer.*

25 Spares quantities

26 Replacement parts upgraded/modified

Where equipment or spares, including the whole assembly, have been upgraded / modified the Supplier shall indicate this to the Employer as part of the tender. The Employer shall be made aware immediately where the upgrade/modification to the component is only identified subsequent to the tender being issued.

The detailed compatibility to the existing component shall be indicated. If the components to be supplied will be obsolete, or envisaged to be obsolete, in the 3 years subsequent to tender being issued, the Supplier shall indicate this to the Employer and indicate viable alternatives thereof.

27 Packaging

All supplied spares shall be packaged in such a manner that they may be transported and stored for an extended period of time without resulting in damage to the packaged components. This includes preventing damage due to moisture ingress, especially for electronic components. Where possible, silica gel/desiccant may be included to ensure protection against moisture for at least 3 months. However, this inclusion should not lead to damage to the component.

Different spare types shall be packaged separately such that each spare type can be stored separately. Packaging shall be such that the spare can be identified without opening the packaging. Packaging shall

be of material that will not be damaged, to an extent possible, by harsh weather conditions during transportation. If that is not possible, then the packaging shall be protected against such conditions. Where possible, packaging to be such that procured spares can be positively identified through the packaging. Where this is not possible, the packaging to be such that it allows opening and closing of packaging and still maintain the packaging integrity thereafter.

Delivery packaging to have the following details on it:

a) Order number
b) Physical address of Kriel Power Station
c) Delivery notes number
d) Spares part number and quantity

28 Exclusions

The following shall be noted as exclusions as per this scope of work:

a) The *Supplier* shall not supply offloading facilities during delivery of spares.
b) The *Supplier* shall not be responsible for the storage of spares after acceptance at delivery by *Employer*.
c) Subcontracting shall not be permitted, unless declared and accepted prior to contract placement.

29 Acceptance of spares

N/A

30 Work to be done by the delivery date

A clarification meeting to be held 3 weeks subsequent to the issuing of the enquiry to confirm the scope of the Works and to confirm spares identification. All questions can be forwarded to the Employer during this meeting. Where more than one Supplier is available, all responses from the Employer will be forwarded to all Suppliers, regardless of which Supplier required the clarification.

All required spares to be delivered to the Employer 4 weeks from the day the purchase order is placed by the Employer. In instances where design reviews are necessitated, the 4 weeks will be from the day of design freeze. The Employer may request, in writing, that a spare be expedited quicker if its delivery in 4 weeks may lead to a delay that may result in undesirable consequences (loss of production, loss of revenue and/or safety to personnel or environment) to the Employer.

31 Interpretation and terminology

The following abbreviations are used in this Service Information:

Abbreviation	Meaning given to the abbreviation
OBL	Outside battery limits
DOL	Department of Labour
EMD	Electrical Maintenance Department
OEM	Original Equipment Manufacturer
OHS Act	Occupational Health and Safety Act 85 of 1993
PPE	Personal Protective Equipment
QCP	Quality Control Plan
SANS	South African National Standards
SANAS	South African National Accreditation System

PSR	Plant Safety Regulations
PM	Preventative Maintenance
LAR	Limited Access Register
°C	Degrees Celsius
AC	Alternating Current
CCTV	Close Circuit Television
CoC	Certificate of Compliance
DC	Direct Current
EMC	Electro-magnetic Compatibility
FAT	Factory Acceptance Test
GI	Galvanized Iron
HT	High Tension
HV	High Voltage
Hz	Hertz
IDF	Intermediate Distribution Frame
IEC	International Electro-technical Commission
IP	Ingress protection
Kg	Kilogram
kV	Kilovolt
m	Meter
mm	Millimetre
Mpa	Mega Pascal
ms	Millisecond
MTBF	Mean Time Between Failures
NC	Normally closed
NLEPDS	Non-Lethal Energized Perimeter Detection System
NO	Normally open
PC	Personal Computer
PTZ	Pan-Tilt-Zoom
RSA	Rolled Steel Angle
SABS	South African Bureau of Standards
SANS	South African National Standards
SAT	Site Acceptance Test

SCADA	Supervisory Control and Data Acquisition
SCOT	Steering Committee of Technology
SMS	Short Messaging System
UV	Ultra Violet

32 Management strategy and start up.

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

The Contractor will submit a plan to the Contract Manager for acceptance within the period stated in the service agreement.

34 Management meetings

All relevant meetings must be attended.
Attends Electrical Maintenance Department Feedback meetings.
Attends other meetings as required and directed by the Contract Manager, Interfaces with the *Employer'*s internal organization.
Interfaces with other contractors that may perform work for the *Employer*.
Attends Monthly scheduled contract meeting.
Regular meetings of a general nature may be convened and chaired by the *Contract Manager* as follows:

Title and purpose	**Approximate time & interval**	**Location**	**Attendance by:**
Risk registers and compensation events	Discussions to take place as soon as a risk is notified	*Contract Manager's* office	*Contractor*, *Contract Manager,* Co-ordinator and Contracts Supervisor
Daily Planning Meeting	Daily 7:30 am	EMD Boardroom	Electrical Maintenance team and Contract supervisor/ Technician
Contractor Weekly Safety Meeting	Monthly on Wednesdays	MS-Teams/Kwanala	Contract Manager/Technician
Plant Safety Walk down	Tuesdays 09:00am	EMD Tearoom	All employees

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.

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

The *Contractor* to provide a key list of personnel who will carry out the work on site with their qualifications attached. A company organogram will be needed by the *Contract Manager* to communicate accordingly to comply with the NEC3 Term Services Contract communication structures. *Contractor* to refer to Kriel Power Station *Contractor* SHE Requirements RSR0001

The contractor provides a site manager/contract manager to manage all contract related matters. Such persons is preferred to have prior experience in contract management and change of this person is communicated in writing, within 1 (one) week of such change, to the employer.

The contractor's supervisor/ technician shall be knowledgeable, competent and fully capable to perform supervisory duties without direct or continuous supervision by the employer, to liaise and co-ordinate activities with various departments, including the employer's personnel and others in order to fulfill all obligations. In the absence of the relevant site manager or supervisor or technician, a replacement must be identified to take over the duties.

36 Provision of bonds and guarantees.

Not applicable

37 Documentation control

a) The information for spares to be provided will either be in electronic format or hard copy.
b) Other information provided with each spare to be either in electronic format or hard copy.
c) Information provided to be documented in such a manner that the information for each spare will be easily identifiable.
d) All documentation supplied shall bear the OEM's official name and logo.

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

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

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

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

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

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

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

Contractor Document Submission Schedule (CDSS)

Document Name/Description	Date/Time documents to be submitted
Baseline risk assessment	A month before start of the work
QCP's	Before commencement of any work
Contractor's Safety file	Two week before start of work
Inspection report	24 hours after stripping activity
Technical report and data pack	Within 14 days of completion of the services

38 Invoicing and payment

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

The *Contractor* shall address the tax invoice to
ESKOM HOLDINGS SOC LTD
and include on each invoice the following information:

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

Add procedures for invoice submission and payment (e. g. electronic payment instructions)

39 Contract change management

Any changes related to this official contract to be communicated to *Service Manager.* The correct processes and procedures will be communicated through to the *Contractor* by the *Contract Manager*.

If the *Contract Manager* changes, the *Contractor* will be notified by the *Employer* as soon as possible to ensure that the *Contractor* follow the correct communication channels.

40 Records of Defined Cost to be kept by the *Contractor*

Option A is used
In order to substantiate the Defined Cost of Compensation Events, the *Employer* may require the *Contractor* to keep records of amounts paid by him for people employed by the *Contractor.*

The *Contractor*'s Site Manager will complete the site weekly log and this will be submitted to the *Contract Manager* for his signature every Monday The log will include but not be limited to the following:

- Date
- Weather.
- Site Conditions.
- Work Done.
- People who are employed by the *Contractor*
- Any incidents during that period.

Any communication and documentation during this service agreement to be filed in the contract file. This file is always in the possession of the *Contract Manager*.

41 Insurance provided by the *Employer*

As stated in Contract Data and as per Table A within this Service Agreement

42 Training workshops and technology transfer

The *Contractor* should create a programme for training on the plant for the *Employer's* nominated employees if required from the *Contract Manager*.

This training should be relevant for the *Employer's* employees to perform front line fault finding or maintenance.

43 Design and supply of Equipment

The following shall be included in the Supplier's program:

a) The delivery date as stipulated to be provisional. This date may change prior to delivery. The Supplier to indicate standing time and storage costs should the Employer delay the delivery date.Proof of actual costs to be provided.
b) Provision to be made for delays that may be caused owing to items being sourced from outside The Republic of South Africa.

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

45 Equipment

Not applicable to this contract

46 Information and other things

Not applicable to this contract

47 Management of work done by Task Order

All work is performed in accordance with the Task Order provided.
When any emergencies do arise, it is required from the *Contractor* to adhere to the following terms:

- The *Contractor* will be informed of emergencies when the *Contract Manager* first becomes aware of it.
- Response time within 1 hour for any communication when the *Contractor* acknowledges the emergency.
- Provide a programme within 2 hours after notification provided to the *Contractor*

48 Health and safety, the environment and quality assurance

49 Health and safety risk management

The Contractor undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the service

All service providers appointed to render any services within Eskom Kriel Power Station are required to comply with the station's safety requirements.

50 Employer's Health and Safety Requirements

The *Contractor* acts in accordance with the health and safety requirements stated in the Works Information.

In carrying out its obligations to the *Employer* in terms of this contract; in providing the Works; in using Plant, Materials and Equipment; and while at the Site for any reason, the *Contractor* complies and procures and ensures the compliance by its employees, agents, Sub-Contractors, and mandatories with:

a) the provisions of the Occupational Health and Safety Act 85 of 1993 (as amended) and all regulations in force from time to time in terms of that Act ("the OHSA"); and

b) the Eskom "Safety, Health and Environmental Requirements for Contractors" document attached to the Works Information (as amended from time to time) and such other Eskom Safety Regulations as are applicable to the Works and are provided in writing to the *Contractor* (collectively "the Eskom Regulations"). The Eskom Regulations may be amended from time to time by the *Project Manager* and all amendments will be provided in writing to the *Contractor*. The *Contractor* complies with the provisions of the latest written version of the Eskom Regulations with which it has been provided; and

c) The health and safety plan prepared by the *Contractor* in accordance with the SHEQ Requirements. (The OHSA and the Eskom Regulations are collectively referred to as the "SHEQ Requirements".)

The *Contractor*, always, considers itself to be the "*Employer*" for the purposes of the OHSA and is required to not consider itself under the supervision or management of the Employer regarding compliance with the SHEQ Requirements, the *Contractor* is required to furthermore not consider itself to be a subordinate or under the supervision of the *Employer* in respect of these matters. The *Contractor* is always responsible for the supervision of its employees, agents, Sub-Contractors, and mandatories and takes full responsibility and accountability for ensuring they are competent, aware of the SHEQ Requirements and execute the Works in accordance with the SHEQ Requirements.

The *Contractor* ensures that all statutory appointments and appointments required by any Eskom Regulations are made and that all appointees fully understand their responsibilities and is trained and competent to execute their duties. The *Contractor* supervises the execution of their duties by all such appointees.

The *Employer*, or any person appointed by the *Employer*, may, at any stage during the currency of this contract:

I. Conduct health and safety audits regarding all aspects of compliance with the SHEQ Requirements, at any off-site place of work, or the site establishment of the *Contractor*.

II. Refuse any employee, Sub-Contractor, or agent of the *Contractor* access to the premises if such person has been found to commit an unsafe act or any unsafe working practice or is found not to be qualified or authorised in terms of the SHEQ Requirements.

III. Issue the *Contractor* with a stop order should the *Project Manager* become aware of any unsafe working procedure or condition or any non-compliance with any provision of the SHEQ Requirements.

The *Contractor* immediately reports any disabling injury as well as any threat to health or safety of which it becomes aware at the Works or on the Site to the Project Manager and to the Safety Risk Management office.

The *Contractor* appoints a person, qualified in accordance with the SHEQ Requirements, as the liaison with the Eskom Safety Officer for all matters related to health and safety, this person is required to be contactable 24 hours a day.

The *Contractor* confirms that it has been provided with sufficient written information regarding the health and safety arrangements and procedures applicable to the Works to ensure compliance by it and all employees, agents, Sub-Contractors, or mandatories with the SHEQ Requirements while providing the Works in terms of this contract. As such, the *Contractor* confirms that this contract and the relevant Eskom Regulations referred to in this contract constitute written arrangements and procedures between the *Contractor* and the *Employer* regarding health and safety for the purposes of section 37(2) of the OHSA.

The *Contractor* agrees that the *Employer* is relieved of all of its responsibilities and liabilities in terms of Section 37(1) of OHSA in respect of any acts or omissions of the *Contractor*, and the Contractor's employees, agents or Sub-Contractors, to the extent permitted by the OHSA.

The *Contractor* hereby indemnifies the *Employer* and holds the *Employer* harmless in respect of any and all loss, costs, claims, demands, liabilities, damage, penalties or expense that may be made against the Employer and/or suffered or incurred by the *Employer* (as the case may be) as a result

of, any failure of the *Contractor*, its employees, agents, Sub-Contractors and/or mandatories to comply with their obligations in terms of this clause 18, and/or the failure of the Employer to procure the compliance by the *Contractor* , its employees, agents, Sub-Contractors and/or mandatories with their responsibilities and/or obligations in terms of or arising from the OHSA.

51 Contractor's Responsibilities

In addition to the safety requirements identified under responsibility in terms of safety requirements, the *Contractor* ensures that the following responsibilities are complied with:

a) To meet on a regular basis, as agreed, with the *Project Manager* / *Supervisor* who are responsible for:

I. Safety assurance
II. Quality assurance
III. Construction
IV. Commissioning
V. Any other relevant subjects.

b) To commission machinery, if contractually required, in accordance with the commissioning committee's approved commissioning programmes and procedures. The programmes are to identify and account for the interface requirements of other *Contractors* and the dates contained in the Contract Data.

52 Specific Risks

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

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

53 Safety of Workers

i. The *Contractor* ensures the safety of all persons working in the Site. Any hot work including welding will be applied for in accordance with a permit to work system. No welding will be allowed on site unless permission is granted in writing by the *Project Manager*.
ii. All welding, flame cutting and grinding work is properly screened to protect persons from arc flashes or eye injuries. Fire blankets are fitted over the scaffolding planks and platforms. Precautions are taken to prevent any objects welding or grinding splatter from falling.

54 Fire Protection

i. The *Contractor* shall ensure that adequate firefighting apparatus is provided at all their work sites or office areas, and that their all their staff or representatives are trained in the use of this apparatus.
ii. The *Contractor* takes precautions to prevent any occurrence of fires or explosions while carrying out any work near flammable gas and liquid systems. Any tampering with the *Employer's* fire equipment is strictly forbidden.
iii. All exit doors, fire escape routes, walkways, stairways, stair landings and access to electrical distribution boards must be kept free of obstruction, and not be used for work or storage at any time. Firefighting equipment remains accessible at all times.

iv. In case of a fire, report the location and extent of the fire to the Electrical Operating Desk at extension 2555.
v. Take the necessary action to safeguard the area to prevent injury and spreading of the fire.

55 First Aid

i. The *Contractor* provides a First Aid service to his employees and Sub-*Contractors*. In the case where these prove to be inadequate, like in the event of a serious injury, the *Employer*'s Medical Centre and facilities will be available.
ii. Outside the *Employer's* office hours, the *Employer's* First Aid Services are only available for serious injuries and life-threatening situations.
iii. The *Employer* recovers the costs incurred, in the use of the above *Employer*'s facilities, from the *Contractor*.

56 Hazardous Substances

The *Contractor* shall manage hazardous substances in accordance with the requirements of Occupational Health and Safety Act no 85 of 1993 and NEMWA Act. The *Contractor* shall declare all hazardous chemical substances brought to site to the *Employer*.

57 Radiation Protection

The *Contractor* conforms to all the legislative and safety requirements when performing any industrial radiography

58 Plant Safety Regulations

i. The *Employer,* on request from the *Contractor*, isolates required plant from all sources of danger as described in the Plant Safety Regulations.
ii. The *Project Manager*, on request, makes available a copy of the latest revision of the Plant Safety Regulations available to the *Contractor*.
iii. The *Contractor* complies with all rules and regulations applicable to plant safety and completes the Workman's Register prior to working on the plant.
iv. The *Contractor* declares any grinding and welding to be carried out on the workers register
v. At every permit change the *Contractor* withdraws himself/herself/his staff for that period of permit suspension/revocation and thereafter only proceeds with the works after signing onto the new permit.
vi. The *Contractor* ensures that he/she/all sub-*contractors*/personnel/staff/his visitors are medically, physically, and psychologically fit to enter the Kriel Power Station, and specifically any confined space.

vii. The *Contractor* is prohibited from entering Radiation Areas.
viii. The responsibility is on the *Contractor* to ensure that the correct confined space requirements and tests have been done or met by the *Employer* prior to entry into any confined space or hazardous plant areas.
ix. The *Contractor* shall provide proof of competency for technical and safety aspects and must be available as and when required on site,

59 COVID19

All South African Legislation, Eskom Rules and Regulations will be adhered to during COVID19 pandemic.

60 Environmental constraints and management

All service providers appointed to render any services within Eskom Kriel Power Station are required to comply with the station's Environmental Management System requirements.

NB: Before commencing with any work, the service providers are required to visit the station's Environmental Department for evaluation to be allocated relevant legal and other requirements documents which the *Contractor* shall comply with during the service.

The service provider shall then commence with the service but paying inordinate attention towards implementing the relevant legal and other requirements measures as agreed in the register. Failure to comply with this agreement may ultimately lead to the termination of this contract. This requirement shall also be clearly stipulated in the NEC contracts between Eskom Kriel Power Station and any service providers.

It should always be noted that Kriel Power Station is ISO14001 certified and therefore promotes Integrated Environmental Management (IEM) philosophy which aims to achieve a desirable balance between conservation and development. All activities taking place within Kriel Power Station must consider section 28 of the National Environmental Management Act (107 of 1998) which makes provision for the duty of care approach.

The *Contractor's* team must commit to review and to continually improve environmental management, with the objective of improving overall environmental performance. The *Contractor* must consult with Kriel Environmental section on a regular basis for on-going assistance and advice.

The *Contractor's* EMS shall clearly cover the following areas as per ISO 14001.

i) Environmental policy
ii) Environmental legal and other requirements
iii) Risk Assessments/Aspects & Impacts Register
iv) Improved management of monitoring and measurement documentation (e.g., devices calibration certificates)
v) Provision of necessary resources (e.g., computers, adequate human resource) and allocation of roles and responsibility (through clear appointments) to achieve effective implementation of the EMS.
vi) Continuous commitment towards complying with operational controls such as work instructions, operational procedures, etc. (either provided by the *Contractor* or by *Project Manager*) as well as emergency preparedness and response procedures/plans.
vii) The *Contractor* shall continually evaluate the compliance to legal requirements (e.g. sewage treatment plant permits and other applicable legislation); this should also be documented within the monthly environmental site inspections reports
viii) Kriel Power Station's procedure for non-conformity, corrective action and preventive actions shall be followed in case of the environmental incidents.
ix) Contingency plans

61 Quality assurance requirements

62 Quality Management System

The *Contractor* shall implement and maintain a quality management system; that as a minimum meets the requirements of the ISO 9001:2015 Standard Quality Management. If the *Contractor* is certified, the appropriate ISO 9001:2015 certificate of compliance must be supplied with the tender. If the *Contractor* is not ISO 9001:2015 certified, evidence of compliance to ISO 9001:2015 must be submitted as outlined on the QM-58 Supplier *Contractor* Requirements Specification.

i. The *Contractor* further must ensure that the sub-*contractor's* programmes comply with the requirements of the *Works* Information.
ii. The *Contractor* notifies the *Project Manager* of any changes to the Quality Management System and obtains agreement prior to implementation on existing orders and contracts, or sub orders and subcontracts

63 Quality Documents Submitted with the Tender

i. The *Contractor* submits a copy of his quality policy and quality system procedures relevant to the *Works*.
ii. The *Contractor* also to submit a typical quality control plan

iii. The *Project Manager* evaluates the *Contractor'*s capabilities with regards to quality assurance and quality control based on these submissions and the performance history of the *Contractor*. The *Project Manager* performs pre-award assessments where necessary, giving further information to aid the selection process.

64 Contract Quality Management Plan Requirement

The *Contractor* prepares a contract quality management plan that, where appropriate, indicates the following:

i. Indicates the interface with the *Contractors* quality system and applicable documents such as procedures and work instructions
ii. Establishes communication channels between the *Contractor* and the *Project Manager* in respect of quality and the integration of such with prescribed contract communication channels
iii. Indicates how specific subcontractors will be monitored
iv. Identifies items or activities for which quality control plans will be prepared
v. Identifies the specifications, drawings, and acceptance criteria for material for which quality control plans are not required
vi. Identifies the areas or processes requiring special controls
vii. Identifies the *Contractor's* Management Representative and personnel responsible for the control of quality activities and their relationship to the *Contractor's* management structure
viii. Identifies the documents which are to be submitted to the *Project Manager*
ix. Identifies the *Contractor's* quality monitoring programme

The *Contractor* periodically updates the contract quality management plan to reflect changes in any of the above details. The frequency of such updates is determined by the *Project Manager* but will not be greater than one year.

65 Access to the Contractor's and Sub-Contractor(s) Premises and Facilities

The *Contractor* and/or its sub-*contractor* gives access to the *Supervisor* and/or the Authority/Agency and the Regulator where appropriate to their premises and facilities at reasonable times to conduct quality assessments, audits, surveillances, and inspections to establish compliance with the contractual requirements.

66 Verification and Testing

The *Contractor* gives at least 24 hours' advance notification to the *Supervisor* or the Authority for verification/testing, which require their attendance. The *Contracto*r confirms readiness for verification at least 12 hours prior to the test. The *Contractor* ensures that all work has been fully verified, accepted and documented prior to requesting any verification by the *Supervisor*.

67 Quality Records

i. The *Contractor* prepares and submits to the *Employer* an Index of QA/QC and inspection and test records prior to the commencement of work.
ii. The *Employer* determines which documents are to be submitted during the performance of work and reviews the index and request changes if required. The *Contractor* conforms to the Index approved by the *Employer.*
iii. The *Contractor* ensures all records identify the items, equipment and/or activities to which they pertain and collates indexes and securely stores the records in such a manner that they are readily retrievable.
iv. The *Contractor* implements appropriate administrative controls to limit access to prevent inadvertent loss of or damage to records.
v. The *Contractor* stores all quality records. The *Contractor* only destroys or discards quality records with the approval of the *Employer*.
vi. The *Contractor* presents on completion of the works all quality records in the form of a data package. The package is indexed and shows the entire contents.

68 Procurement
69 People

70 Minimum requirements of people employed

As per the accepted resource plan submitted to the *Service Manager*.

KRIEL PERMIT to Work System

a) The *Contractor* shall ensure that he/she is informed of all the requirements of Eskom's Plant Safety Regulations and ORHVS and that he/she at all times comply to the requirements of these Regulations.
b) The *Contractor* will ensure that all his supervisors who are directly involved with Eskom's Permit to Work System, shall be trained and on successful completion of Kriel's authorization / evaluation process will be authorized as "Responsible Persons".
c) The Responsible Person shall ensure that:
    i) The conditions of permits and cautionary notices are strictly adhered to
    ii) The lockout procedures, mechanical as well as electrical, are strictly adhered to and any deviations shall be corrected immediately.
    iii) The safe work procedures as laid down by Kriel Power Station and as determined by the Risk Assessment, shall be followed
d) The workers register and cautionary notices are discussed daily with workers

71 BBBEE and preferencing scheme

a) 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.
b) The Contractor is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Employer* within thirty days of the notification or as otherwise instructed by the Employer.
c) Where, as a result, the Contractor's B-BBEE status has decreased since the starting date the *Employer* may either re-negotiate this contract or alternatively, terminate the Contractor's obligation to provide the service.
d) Failure by the *Contractor* to notify the *Employer* of a change in its B-BBEE status may constitute a reason for termination will be dealt with according to the NEC3 TSC penalty/termination clauses.
e) Tenderers will be required to maintain their B-BBEE Recognition Level for the duration of the contract.

72 SDL & I

a) Supplier Development Localisation and Industrialisation

i) Eskom shall review the SDL&I reports submitted by the suppliers within 30 (thirty) days of receipt of the reports and notify the *Contractor* in writing if their SDL&I obligations have not been met.
ii) Upon notification by Eskom that the *Contractor* have not met their SDL&I obligations, the *Contractor* shall be required to implement corrective measures to meet those SDL&I obligations before the commencement of the following report, failing which Retention clauses shall be invoked.

b) Corporate Social Investment - The supplier to contribute 1.2% of the contract expenditure to CSI.

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

73 Subcontracting

74 Preferred subcontractors

Not applicable to this contract

75 Subcontract documentation, and assessment of subcontract tenders

Not applicable to this contract

76 Limitations on subcontracting

The *Contractor* submits the name of each proposed Subcontractor to the *Service Manager* for acceptance. A reason for not accepting the Subcontractor is that the appointment will not allow the *Contractor* to Provide the Service. And the *Contractor* does not appoint a Subcontractor until the *Service Manager* accepted them.

77 Attendance on subcontractors

Not applicable

78 Plant and Materials

79 Specifications

Refer Scope of Work

80 Correction of defects

The *Service Manager* arranges the *Contractor* access if it is needed for correcting a Defect.
Due to the different nature of defects, and the different risks associated with trips, the defect correction period as specified in the Contract Data varies per defect, as indicated by the *Service Manager.*

a) Priority 1 – 24 hours – All modifications which may affect the operation of Kriel Power Station.
b) Priority 2 – 2 days – Investigations and feasibility studies.
c) Priority 3 – 1 week – Repairs.

81 *Contractor*'s procurement of Plant and Materials

The Contractor will do all procurement of materials according to own procurement processes.

82 Tests and inspections before delivery

Refer to Part C3 Employer's service information (1.2.14 Maintenance Inspections)

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

Not applicable to this contract

84 Cataloguing requirements by the *Contractor*

Not applicable to this contract

85 Working on the Affected Property

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

i) The *Contractor* applies for temporary access permits (Contractor's Permit) at the Security gate, prior to the Possession Date.
ii) The *Contractor* personnel are required to be in possession of a Contractor's Permit at all times.
iii) All *Contractor* personnel are issued with a temporary access permit (Contractor's Permit) which contains the following information:
   - Name

- ID Number
- Company
- Validity date

iv) All *Contractors'* permits are submitted to Protective Services when the workers leave the site after completion of the works.

v) In order to assist Protective Services with the issuing of permits and the identification of personnel on site, the *Contractor* supplies a list of all personnel that he intends using on site, at least 24 hours prior to entry of the Security Area.

vi) This list is delivered to Protective Services, or is faxed to (017) 615 2602

vii) The list, identified with the Contractor's name, contains the following information:

- Employee Name
- Employee ID Number
- Eskom Safety Co-ordinator signature
- Contract Manager signature
- Copy of the first page of the ID book of every employee of the *Contractor*, photocopied to reduce the size to 65%.

viii) To speed up the process of gaining access to the site, the *Contractor* compiles detailed lists of all tools and equipment to be taken on site before arriving at the Power Station Security gate.

ix) A special Tool List form is available at Protective Services.

x) An authorised copy of this list is retained to be used again when the tools and equipment is removed from site after the completion of the works.

xi) The Contractor's visitors and all personnel conform at all times to the security arrangements in force at the site.

xii) Application forms for visitors are filled in by the Contractor's Site Manager and approved by the Employers Representative, one day before the visit and submitted to the Employer's Protective Services office.

xiii) Visitors are not allowed on site if the necessary forms are not in the possession of security staff.

xiv) The Chief of Protective Services may, with valid cause, remove any of the Contractor's personnel from the site, either temporarily or permanently, without any prejudice. He may deny access to the site to any person whom, in the opinion of the said Chief of Protective Services, constitutes a security risk.

xv) No unauthorised vehicles are allowed on site.

xvi) Only *Contractor'*s vehicles with displayed Contract Vehicle Permits disks are allowed on site.

xvii) Contract Vehicle Applications are directed to the Employers Representative.

xviii) The *Contractor* is restricted to the working areas associated with his place of work.

xix) The *Contractor* is forbidden to enter any other areas, and must ensure that his employees abide by these regulations.

xx) Parking inside the power station is strictly forbidden, except for loading purposes.

xxi) No recruiting of casual labour is done on Eskom premises, including the area outside the Power Station Security Gate.

87 People restrictions, hours of work, conduct and records

a) The *Contractor* provides the necessary resources to carry out the service as stated in the Service Information.

b) The *Contractor* provides everything to carry out the Service Information of this contract unless where otherwise stated in this Service Agreement. Everything that should be provided by the *Employer* is stated in this Service Agreement, anything not stated in the Service Agreement should be provided by the *Contractor* to execute the work as stated in the Service Information.

c) It is very important that the *Contractor* keeps records of his people working on the Affected Property, including those of his Subcontractors. The *Service Manager* shall have access to all records of the *Contractor* and Subcontractor at any time when deemed necessary.

88 Health and safety facilities on the Affected Property

Any emergency equipment or fire suppression systems to be utilized by the *Contractor* when an emergency arise. Please refer to SHE Requirements for *Contractors* – Refer to RSR0001 Heading 8.1

89 Environmental controls, fauna & flora

General environmental requirements Kriel Power Station ISO14001

90 Cooperating with and obtaining acceptance of Others

a) The *Contractor* cooperates with the s personnel during delivery.
b) The *Contractor* cooperates with the Employer's team during site visits and in ensuring that the goods are delivered in accordance to all requirements

91 Records of *Contractor*'s Equipment

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

a) All equipment or tools signed in by the *Contractor* should strictly adhere to the gate access rules and procedures.
b) All Equipment including hired should be inspected and approved before accepted on site.
c) The *Contractor* will keep records of all hired Equipment to execute the Service Information.

92 Equipment provided by the *Employer*

a) It is the responsibility of the *Contractor* to provide his Equipment list to the *Contract* with all calibration certificates etc.
b) The *Employer* provides Equipment as stated in the Service Information, anything not stated in the Service Information the *Contractor* have to provide and already accounted for in the Price List.

93 Site services and facilities

94 Provided by the *Employer*

The *Employer* will provide in the way of water, waste disposal, ablutions, fire protection and lighting (etc) on the Affected Property. Power will be provided by the *Employer* the *Contractor* needs to ensure his own cabling, connections, DB Boards and CoC certificates of installations and connections.

a) Refuse Disposal

i) The *Employer* provides special colour coded bins for refuse disposal. These bins are emptied by the *Employer* free of charge.
ii) The *Contractor* ensures that all workers under his control strictly adhere to the correct use of refuse bins as stated in the Plant.

b) Supply of Electricity

i) *Employe*r will make available to the *Contractor* 220/230-volt electrical supply free of charge from the closest existing point of supply.
ii) The *Contractor* is to make provision for the necessary extensions and plug points.
iii) All Electrical boards must be inspected and tested before connecting to a power supply and then a CoC must be issued by the *Contractor.*
iv) The *Contractor* will adhere to the Electrical Installation Regulations of 1992

c) Medical Facilities

i) The *Contractor* provides a First Aid service to his employees and subcontractor. In the case where these prove to be inadequate, like in the event of a serious injury, the *Employer's* Medical Centre and facilities are available.
ii) Outside the *Employer's* office hours, the *Employer's* First Aid Services are only available for serious injuries and life-threatening situations.
iii) The *Employer* is entitled, however, to recover the costs incurred, in the use of the above *Employer's* facilities, from the *Contractor.*

d) Toilet Facilities

i) The *Employer* provides the *Contractor* access to toilet facilities.

ii) Temporary chemical toilets are provided by the *Contractor* where deemed necessary.

95 Provided by the *Contractor*

i) The *Contractor* shall provide, for his own use adequate size offices.
ii) A cleaning service must also be provided.
iii) Domestic rubbish will be removed free of charge.
iv) The *Contractor* shall dismantle and clear off site all such infrastructure at the discretion of the *Contract Manage*r on completion of the contract.
v) No such dismantling and clearance work shall be carried out without prior approval by the *Service Manager.*
vi) Any electrical equipment or appliances used by the *Contractor* shall conform to the applicable South African Safety standards and Kriel standard PSR 010, and shall be maintained in safe and proper working condition.
vii) The *Employer* shall have the right to stop the *Contractor's* use of any electrical equipment or appliance, which in the *Employer's* opinion does not conform to the foregoing.
viii) The boundary of the site is within the Power Station boundary fences.
ix) The *Contractor* is to mark the boundaries of his site clearly.
x) The *Contractor* is to ensure that all his material and equipment is always within the boundaries of his site.
xi) A site for the *Contractor* will be provided if needed. (The exact position will be determined on site).
xii) The *Contractor* will ensure further treatment of the yard area to keep all neat and tidy at all times.
xiii) The *Contractor* shall also include for such items as security, watch and access arrangements to his yard area.
xiv) The *Contractor* shall not occupy any site area other than that located to him.
xv) On completion of the service on Site, all areas allocated to the *Contractor* shall be re-instated to their former condition to the satisfaction of *Employer*

a) Contractor's site requirements

i) The Contractor supplies, installs, properly maintains and removes all temporary construction facilities and utilities necessary for the complete performance of the service
ii) Including the following:
iii) The Contractor's yard should adhere to sound housekeeping, failing with this the Employer may use another Contractor to clean up the Contractor's yard. These costs will be carried by the Contractor.
iv) Any damage to installed lighting is repaired at the Contractor's expense.
v) The reticulation of electricity, water and any other services required by the Contractor from a supplied central distribution point.
vi) Hazardous Substances to be contained as per Eskom requirements.
vii) Transportation on and off site
viii) Telephone connections may be available, and the Contractor applies via the Contract Manager for a connection. Connection fees and calls are for the Contractor's account.
ix) Compressed air and gases
x) Maintenance of lay-down and storage areas.
xi) Electric panels and distribution wiring for erection and within Contractor's yard
xii) Security of Contractor's yard
xiii) Temporary lighting to ensure safe working conditions.

96 Control of noise, dust, water and waste

Not applicable to this contract

97 Hook ups to existing works

Any work performed at heights, must adhere to the correct safety standards, procedures and specifications stated in the Health and safety risk management of Kriel Power Station. Refer to RSR0001 heading 5.7

98 Tests and inspections

99 Description of tests and inspections

a) No incorrect, damaged, or faulty spares will be accepted.
b) All the spares will be inspected before payment could be processed.
c) Data capturing forms information must be supplied and must meet an acceptable level.
d) Where applicable; test certificates, material certificate, manuals, data sheet and signature shall be provided as required.
e) The Supplier must provide references of the companies that they have supplied similar spares to, and include the respective supply order/contract value, the contact name, physical address and telephone number.

100 Materials facilities and samples for tests and inspections

a) Where applicable; test certificates, material certificate, manuals, data sheet and signature shall be provided as required.

101 List of drawings

102 Drawings issued by the *Employer*

None