



NEC3 Engineering and Construction

Short Contract (ECSC3)

A contract between Eskom Holdings SOC Ltd (Reg No. 2002/015527/30)

and

for **REPLACEMENT OF DIESEL GENERATORS FOR
U3 – U6 WITH AN EQUIVALENT (400KVA)
DIESEL GENERATORS AT KRIEL POWER
STATION**

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Contract No.: TBA

REPLACEMENT OF DIESEL GENERATORS FOR U3 – U6 WITH AN EQUIVALENT
(400KVA) DIESEL GENERATORS AT KRIEL POWER STATION

C1 Agreements & Contract Data

C1.1 Form of Offer and Acceptance

Offer

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

**REPLACEMENT OF DIESEL GENERATORS FOR U3 – U6 WITH AN EQUIVALENT
(400KVA) DIESEL GENERATORS AT KRIEL POWER STATION**

The tenderer, identified in the signature block below, having examined the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, 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.

The offered total of the Prices exclusive of VAT is	R
Value Added Tax @ 14% is	R
The offered total of the Prices inclusive of VAT is	R
(Two Million Two Hundred and Twenty Two Thousand Nine Hundred and Fifty Five Rand and Fifty Four Cents) Including VAT.	

This Offer may be accepted by the Employer by signing the form of Acceptance overleaf 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:

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Acceptance

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

The terms of the Contract, are contained in:

Part C1 Agreements and Contract Data, (which includes this Form of Offer and Acceptance)

Part C2 Pricing Data

Part C3 Scope of Work: Works Information

Part C4 Site Information

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

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender 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, which must be signed by the duly authorised representative(s) for both parties.

The tenderer shall within one week 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 copy of this document, including the Schedule of Deviations (if any) together with all the terms of the contract as listed above.

Signature(s)

Name(s)

Capacity

**for the
Employer**

Name &
signature of
witness

Date:

Note: If tenderer wishes to submit alternative tender offers, further copies of this document may be used for that purpose, duly endorsed, 'Alternative Tender No. _____'

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Schedule of Deviations

Note:

1. To be completed by the Employer prior to award of contract. 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	

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

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

For the tenderer:

For the Employer

Signature

Name

Capacity

On behalf
of

Name &
signature
of witness

Date:

Morongwe Raphasha

General Manager

Eskom Holdings SOC Ltd
Kriel Power Station
Bethal / Ogies Road
Kriel
2271

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C1.2 Contract Data

Data provided by the *Employer*

Clause	Statement	Data
General		
10.1	The <i>Employer</i> is (Name):	Eskom Holdings Limited (reg no: 2002/015527/06), a juristic person incorporated in terms of the company laws of the Republic of South Africa
	Address	Kriel Power Station, Private Bag X5009, Kriel 2271
	The <i>Employer</i> is represented by	Mlondi Nkambule
	Tel No.	011 800 8691
	Fax No.	N/A
	E-mail address	nkambuml@eskom.co.za
11.2(11)	The <i>works</i> are	Replacement of Diesel Generator for U3-U6 with equivalent (400KVA) Diesel Generator at Kriel Power Station
11.2(13)	The Works Information is in	The document called 'Works Information' in Part C3 of this contract.
11.2(12)	The Site Information is in	the document called 'Site Information' in Part C4 of this contract.
11.2(12)	The <i>site</i> is	Kriel Power Station
30.1	The <i>starting date</i> is.	15 March 2026
11.2(2)	The <i>completion date</i> is.	14 November 2026
13.2	The <i>period for reply</i> is	1 week (5 working days)
40	The <i>defects date</i> is	52 weeks after Completion of the whole of the works
41.3	The <i>defect correction period</i> is	2 weeks
50.1	The <i>assessment day</i> is the	The <i>assessment interval</i> is the 20th day of each successive month – <i>late submissions to the PM for approval may result in late payment.</i>
50.5	The <i>delay damages</i> are	R5,000.00 per day to a maximum of 10% of the contract price

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50.6	The retention is	10 %
	Performance Bond	10%
51.2	The interest rate on late payment is	0% per complete week of delay.
80.1	The <i>Contractor</i> is not liable to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property in excess of	the amount of the deductibles relevant to the event described in the applicable "Format A" policy available on http://www.eskom.co.za/live/content.php?Item_ID=9248
82.1	The <i>Employer</i> provides this insurance	as stated for "Format ECSC3" available on http://www.eskom.co.za/live/content.php?Item_ID=9248 (See Annexure A for basic guidance) If the tender document are not provided electronically, a hard copy of insurance to be provided by the Employer should be part of the tender pack
82.1	The minimum amount of cover for the third insurance stated in the Insurance Table is:	Whatever the <i>Contractor</i> deems necessary in addition to that provided by the <i>Employer</i>.
82.1	The minimum amount of cover for the fourth insurance stated in the Insurance Table is:	As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the <i>Contractor's</i> common law liability for people falling outside the scope of the Act with a limit of Indemnity of not less than R500 000 (Five hundred thousand Rands)
93.1	The <i>Adjudicator</i> is (Name) Address Tel No. Fax No. e-mail	The person will be selected from the Eskom Panel of Adjudicators listed in Annexure B to this Contract Data by the Party intending to refer a dispute to him.
93.2(2)	The <i>Adjudicator nominating body</i> is:	The Chairman of the Joint Civils Division of the South African Institution of Civil Engineering. (See www.jointcivils.co.za)
93.4	The <i>tribunal</i> is:	Arbitration.
	The <i>arbitration procedure</i> is	The latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.
	The place where arbitration is to be held is	South Africa

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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.

The conditions of contract are the NEC3 Engineering and Construction Short Contract (June 2005)¹ and the following additional conditions Z1 to Z11 which always apply:

Z1 Cession delegation and assignment

- Z1.1 The *Contractor* does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer*.
- Z1.2 Notwithstanding the above, the *Employer* may on written notice to the *Contractor* cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry and the Electricity Distribution Industry.

Z2 Change of Broad Based Black Economic Empowerment (B-BBEE) status

- Z2.1 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.
- Z2.2 The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Employer* within thirty days of the notification or as otherwise instructed by the *Employer*.
- Z2.3 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 Works.
- Z2.4 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 those stated in Clause 91.1 and the amount due on termination includes amounts listed in Clause 92.1 less a deduction of the forecast additional cost to the *Employer* of completing the works.

Z3 Ethics

- Z3.1 Any offer, payment, consideration, or benefit of any kind made by the *Contractor*, which constitutes or could be construed either directly or indirectly as an illegal or corrupt practice, as an inducement or reward for the award or in execution of this contract constitutes grounds for terminating the *Contractor's* obligation to Provide the Works or taking any other action as appropriate against the *Contractor* (including civil or criminal action).

¹ State whether attached as a 'PDF' file in terms of Eskom's licence, or to be obtained from engineering Contract Strategies Tel 011 803 3008, Fax 011 803 3009 or SAICE.

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- Z3.2 The *Employer* may terminate the *Contractor's* obligation to Provide the Works if the *Contractor* is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices.

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

- Z3.3 If the *Employer* terminates in terms of this clause, the procedures on termination are those stated in Clause 91.1 and the amount due on termination includes amounts listed in Clause 92.1 less a deduction of the forecast additional cost to the *Employer* of completing the *works*.

Z4 Confidentiality

- Z4.1 The *Contractor* does not disclose or make any information arising from or in connection with this contract available to others except where required by this contract. 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 where required by this contract 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 *Employer*.
- Z4.3 In the event that the *Contractor* is, at any time, required by law to disclose any such information which is required to be kept confidential, the *Contractor*, to the extent permitted by law prior to disclosure, notifies the *Employer* so that an appropriate protection order and/or any other action can be taken if possible, prior to any disclosure. In the event that such protective order is not, or cannot, be obtained, then the *Contractor* may disclose that portion of the information which it is required to be disclosed by law and uses reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed.
- Z4.4 The taking of images (whether photographs, video footage or otherwise) of the *works* or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Employer*. 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 clause 12.2:

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

- Z6.1 The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *works*. Without any limitation the *Contractor*:

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- accepts that the *Employer* may appoint him as the “Principal Contractor” (as defined and provided for under the Construction Regulations 2003 (promulgated under the Occupational Health & Safety Act 85 of 1993) (“the Construction Regulations”) for the Site;
- warrants that the total of the Prices as at the Contract Date includes a sufficient amount for proper compliance with the Construction Regulations, all applicable health & safety laws and regulations and the health and safety rules, guidelines and procedures provided for in this contract and generally for the proper maintenance of health & safety in and about the execution of *works*; and
- undertakes, in and about the execution of the *works*, to comply with the Construction Regulations and with all applicable health & safety laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor’s* direction and control, likewise observe and comply with the foregoing.

Z6.2 The *Contractor*, in and about the execution of the *works*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his subcontractors, employees and others under the *Contractor’s* direction and control, likewise observe and comply with the foregoing.

Z7 Provision of a Tax Invoice and interest. Add to clause 50

- Z7.1 The *Contractor* provides the *Employer* with a tax invoice in accordance with the *Employer’s* procedures stated in the Works Information, showing the correctly assessed amount due for payment.
- 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 clause 51.2 is then calculated from the delayed date by when payment is to be made
- Z7.3 The *Contractor* is required to comply with the requirements of the Value Added Tax Act, no 89 of 1991 (as amended) and to include the *Employer’s* VAT number 4740101508 on each invoice he submits for payment.

Z8 Notifying compensation events

- Z8.1 Delete from the last sentence in clause 61.1, “unless the event arises from an instruction of the *Employer*.”

Z9 *Employer’s* limitation of liability; Add to clause 80.1

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

Z10 Termination: Add to clause 90.2, after the words “or its equivalent”:

- Z10.1 or had a judicial management order granted against it.

Z11 Addition to Clause 50.5

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Z11.1 If the amount due for the *Contractor's* payment of *delay damages* reaches the limits stated in this Contract Data (if any), the *Employer* may terminate the *Contractor's* obligation to Provide the Works.

If the *Employer* terminates in terms of this clause, the procedures on termination are those stated in Clause 91.1 and the amount due on termination includes amounts listed in Clause 92.1 less a deduction of the forecast additional cost to the *Employer* of completing the *works*.

Annexure A: Insurance provided by the Employer

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

1. For the purpose of works contracts likely to be let under this contract (low value straight forward work), insurance provided by Eskom (the *Employer*) has been arranged on the basis of “**Format ECSC3**” as described on the web link given at the foot of this page.
2. Tendering contractors should note that cover provided by the *Employer* is only per the policies available on the internet web link listed below under the **Format ECSC3** and may not be the cover required by the tendering contractor or as intended by each of the listed insurances in the left hand column of the Insurance Table in clause 82.1. In terms of clause 82.1 “The *Contractor* provides the insurances stated in the Insurance Table. The *Contractor* does not provide an insurance which the *Employer* is to provide as stated in the Contract Data”. Hence the *Contractor* provides insurance which the *Employer* does not provide and in cases where the *Employer* does provide insurance the *Contractor* insures for the difference between what the Insurance Table requires and what the *Employer* provides.
3. When Marine Insurance is required the *Contractor* needs to obtain a copy of the latest edition of Eskom’s Marine Policies Procedures found at internet website given below.
4. Further information and full details of all Eskom provided policies and procedures may be obtained from:

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

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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)

Data provided by the *Contractor* (the *Contractor's* Offer)

The tendering contractor is advised to read both the NEC3 Engineering and Construction Short Contract (June 2005) and the relevant parts of its Guidance Notes (ECSC3-GN)² in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on page 26 of the ECSC3 Guidance Notes.

Completion of the data in full is essential to create a complete contract.

10.1 The *Contractor* is (Name):

Address

Tel No.

Fax No.

E-mail address

63.2 The percentage for overheads and profit added to the Defined Cost for people is **15%**

63.2 The percentage for overheads and profit added to other Defined Cost is **15%**

11.2(9) The Price List is in **the document called 'Price List' in Part C2 of this contract.**

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

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11.2(10) The offered total of the Prices is **R[•]**
 [Enter the total of the Prices from the Price **excluding VAT**
 List]: **[in words]**
[•]
excluding VAT

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STATION

C2 Pricing Data

C2.1 Pricing assumptions

Entries in the first four columns in the Price List 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 tenderer enters the amount in the Price column only; the Unit, Quantity and Rate columns being left blank.

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

All Prices are to be shown excluding VAT unless instructed otherwise by the *Employer* in Tender Data or in an instruction the *Employer* has given before the tenderer enters his Prices.

If there is insufficient space in the Price List which follows, state in which document the Price List is contained.

C2.2 Price List

The Price List is as follows:

Detail design, manufacturing, construction, factory acceptance testing, transporting, offloading, installation, site acceptance testing and commissioning of eight (8) new Diesel Generators (400KVA) for U3-U6 at Kriel Power Station					
Item no.	Description	Unit	Quantity	Rate	Amount
	SECTION A				
1	CONTRACTUAL OBLIGATIONS				
1.1	Fixed Obligations	Sum	1		
1.2	Time Related Obligations	Sum	1		
1.3	Value Related Obligations	Sum	1		
	TOTAL				
	SECTION B				
2	DESIGN				

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2.1	Provide designs for approval by the Engineer for Generators as per spec provided	Item	1		
	TOTAL				
	SECTION C				
	BUILDING WORKS				
3	SUPPLY, DELIVER AND INSTALLION OF DIESEL GENERATORS				
	DIESEL GENERATORS				
3.1	CAT C15 - 550KVA *(Standby) Rated Open type Diesel Generator set including: -Radiator duct	Each	8		
3.2	Exhaust system for Plant Room: -3CR12 S/Steel Residential Rated	Each	8		
	TOTAL				
4	DE-COMMISSIONING AND ALTERATIONS				
4.1	Plant Room installation: - De-commission existing Generator sets - Strip Generator set with balance of Plant - Rig Generator set out of Plant Room - Rig new Generator set into Plant Room - Connect existing Power Cabling to New Generator set - Install new exhaust system - Project Management Excludes: Supply of any new/ additional cabling &/or material not listed.	Each	8		
	TOTAL				

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5	<u>CIVIL WORKS</u>				
5.1	(a) Opening outlet for rigging Generators in and out of plant room (b) Brickwork to enclose outlet and old exhaust outlet (c) Breaking bund area of old day tanks (d) Preparing and painting Plant Room to required spec	Each	8		
	TOTAL				
6	<u>LOUVERS</u>				
6.1	Supply and install new outlet Louvres - Galvanised Steel - Excludes any additional sound attenuation. - Remove current front doors for better airflow	Each	8		
	TOTAL				
6	<u>PLANT AND RIGGING:</u>				
6.1	Supply and delivery of Truck to Kriel and back (Note: <i>Allowance of 4 trips carrying 2 generators each trip</i>) - Easy access on site - Rigging generator into plant room	Each	4		
	TOTAL				
7	<u>TESTING AND COMMISSIONING</u>				
7.1	Commissioning only - Once fully installed - During standard trading hours.	Each	8		
	TOTAL				

1. All works on site are re-measurable.

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2. For each of the items listed in the BOQ, the *Contractor* is to provide cost.
3. A priced breakdown structure must be submitted as a tender returnable for all items in the BOQ, and for items listed below it is compulsory for the contractor to give a priced breakdown. Failure to do so will make the *Contractors* tender invalid.

Health and Safety Management
Environmental Management
Quality Management

3. Addendums to Form 74 (SHE Specification)

The *Contractor* Manager Director is to conduct at least 2 (two) VFL (Visible Felt Leadership) inspections and reports per month to the Project Manager.

Prior to commencement of works, the appointed *Contractor* Managing Director/ Closed Corporation Member (Represented) to conduct a briefing session with Cape Grids Executive Projects Manager.

4. Before the *Contractor* goes to site, confirmation from the project manager that the dates listed are definite is to be requested.
5. SHEQ documentation and files to be approved prior to commencing of work.

C3: Scope of Work

C3.1 Works Information

1.1 Executive overview

Kriel Power Station Units (1-6) are equipped with two Diesel Generators per unit which are connected in parallel for the essential standby supplies and for the full power supply redundancy. Diesel Generators serve as a back-up power to the 380V Essential Boards in the event of total loss of AC supplies on the unit. Both Diesel Generators are required to be operational in the event of power supply failure at Kriel Power Station since each 380V Essential Board is loaded with independent loads, although most of the critical loads are fed from 380V Essential Board B. Critical essential loads that are supplied from the 380V Essential Boards include jacking oil pumps, main turbine barring gear, 24Vdc, 110Vdc and 220Vdc battery and chargers. The above stated systems are required to safely operate the units and in the event of power failure they are required to be kept operational to allow the unit to run down safely.

The existing Diesel Generators at Kriel P/S for U3-U6 have been in operation since 1973 with OEM ceasing manufacturing of the sets in 1995. The Diesel Generators for U3 to U6 have surpassed the operational lifespan of 35 years: compounded by frequent breakdowns due to aging and spares obsolescence (24V starter, 24V alternator, water temperature sensors, oil pressure sensors, couplings between the engine and the rotor, and unreliable diesel governors). Kriel Power Station requires an urgent replacement of U3-U6 Diesel Generators to bring back the reliability of the unit back up system.

SYSTEM DESCRIPTION (SEE APPENDIX A, B, C, D, E, F, G, AND N, INCLUDING FIGURE 1 & 2)

The 380V power distribution from the diesel generator alternators to the essential loads is provided for through a network of cabling systems and 380V switchgears as indicated in Appendix A and Appendix

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B. There are two diesel generator sets installed per unit on the zero meter level on the Turbine side in the plant, with a total of twelve generators for the entire station. Units 3 to 6 generator sets comprises of 24V DC battery starter, water cooled Detroit V71 engines and Stamford alternators. The diesel generator auxiliary system piping and instrumentation diagrams for U3-U6 Diesel Generator Set A, is provided in Appendix C.

The room layout, section and elevation plans for U3-U6 diesel generator are as depicted in Appendix

D. The existing diesel generator rooms contain a deluge system for fire protection.

There are two controllers (Deep Sea) installed per unit inside the MV & LV Switchgear Room that supervises and controls all engine functions and alarms, refer to Appendix E (MV & LV Switchgear Room Electrical Equipment Layout). The MV & LV Switchgear Room and Diesel Generator room are located on the zero meter level in each unit on the Turbine side, approximately 30 meter apart.

For fuel system, each back up diesel generator has its own dedicated fuel tank (2060L) which is installed next to the diesel generator inside the diesel generator room for U3-U6, as indicated in Appendix C.

Figure 1 below depicts a typical Single Line Diagram of the existing installed Diesel Generator System of a single system for U3 to U6, showing the relevant communication and Control interfaces.

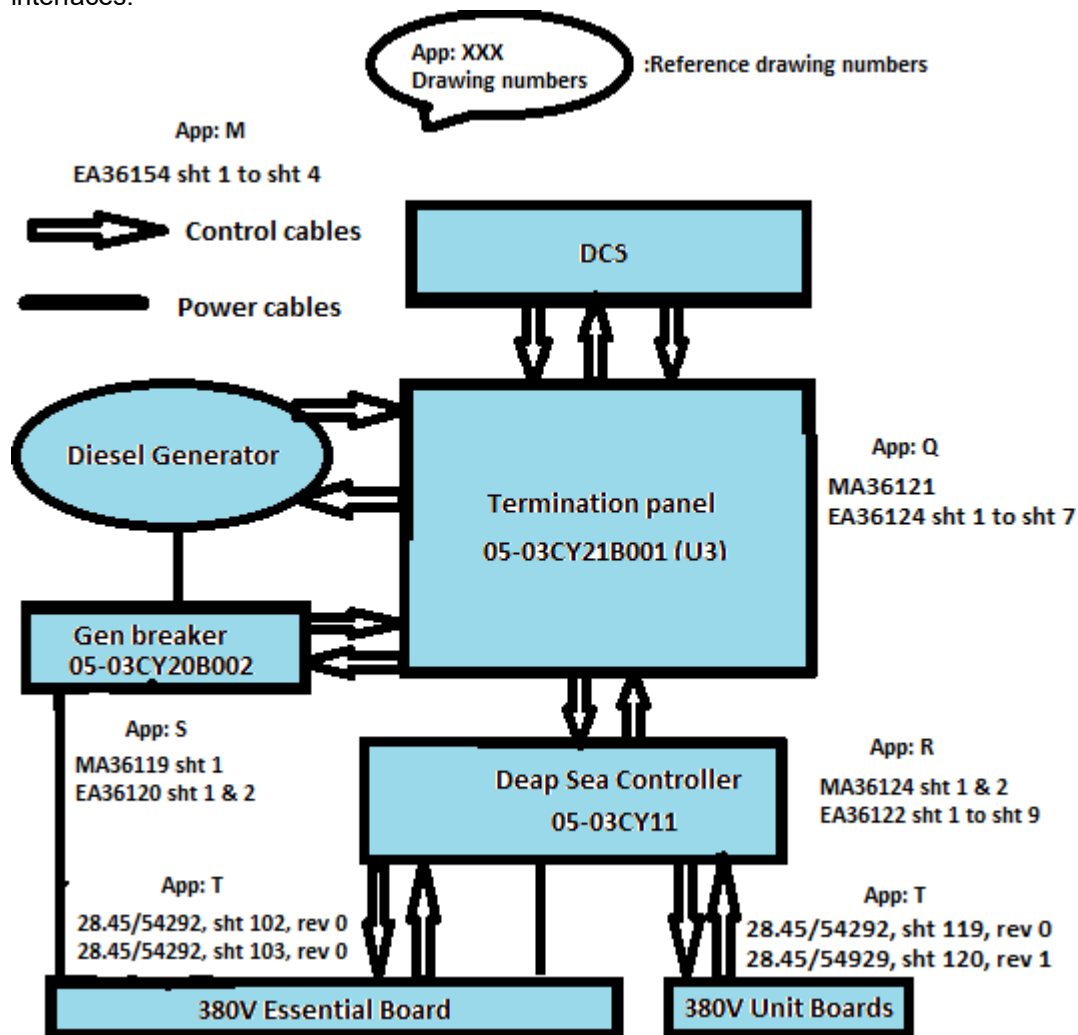


Figure 1: Existing Diesel Generator System single configuration for U3 to U6

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The diesel generator operating, control and protection philosophy for the system is as described on the Kriel Diesel Generator Philosophy, Appendix O.

Parts of the works which the Contractor is to design

The required Contractor scope of work is as depicted in figure 2 below. The Contractor shall comply with the requirements stipulated in the Specification for Diesel Generators (240-62772907), as well as all standards and specifications referenced.

In case there is a conflict between the documents that form part of the Works, the order of preference is as follows: Technical Schedule AB as depicted in Appendix L, this document, the *Employer's* Diesel Generator Specification (240-62772907) followed by all other referenced documents.

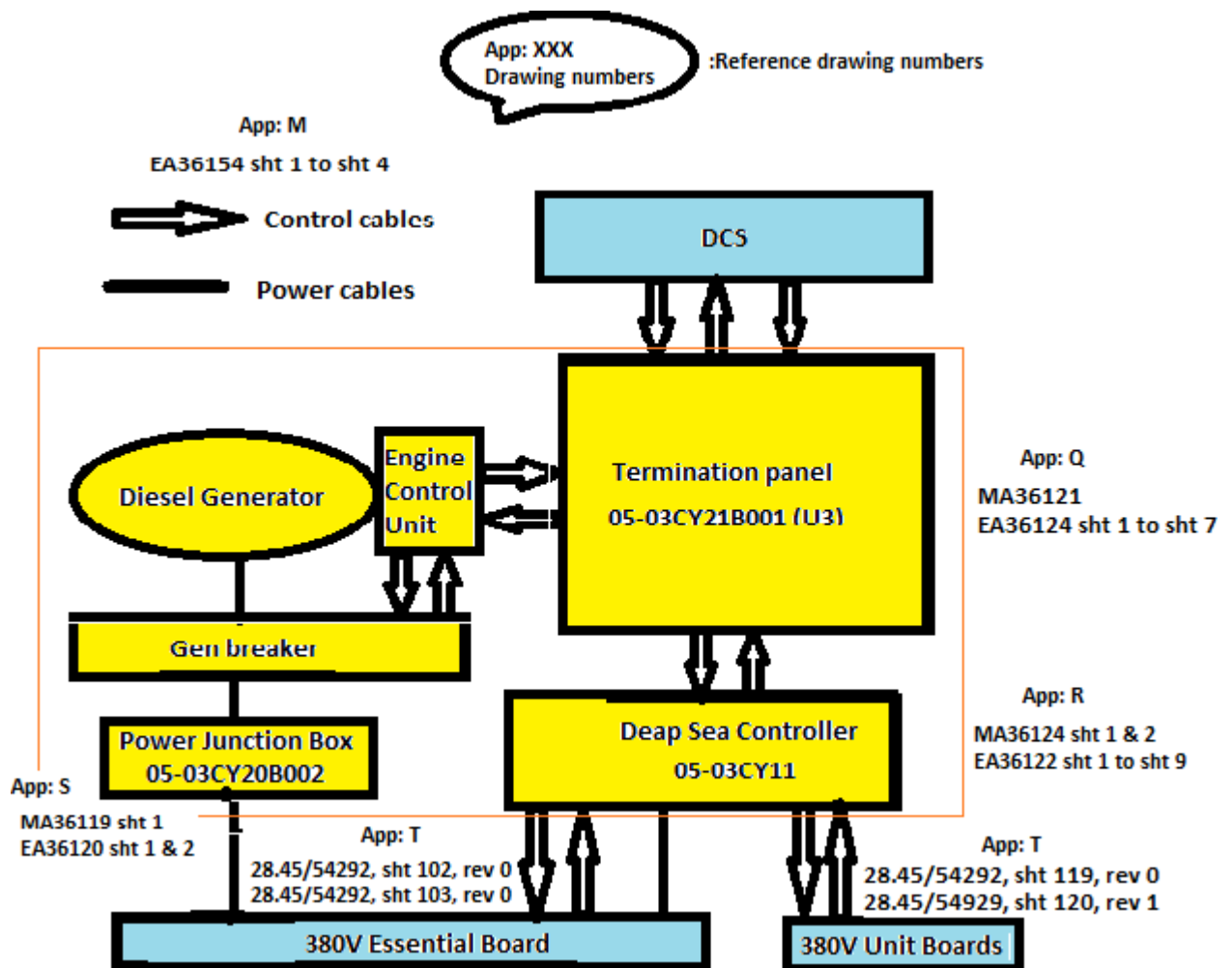


Figure 2: Required Diesel Generator System single configuration for U3 to U6

Refer to Appendix J (Electrical LOSS Diagram) and Appendix K (Low Pressure Service LOSS Diagram)

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Other requirements of the *Contractor's* design

P RATING REQUIREMENTS

All new electrical equipment to be installed inside the Diesel Generator room (battery charger panels and circuit breaker panels) shall be rated IP55 as a minimum due to the existing deluge system installed inside the Diesel Generator rooms, instead of IP54 as specified in the Specification for Diesel Generators.

CABLING AND CABLE RACKING REQUIREMENTS

With reference to Appendix M or drawing number EA36154, sheet 1-4, for cable schedule and termination point for the existing Diesel Generator system, the Contractor shall:

- Reroute, install, test and commission the existing flexible power cables between interconnector box and the new diesel generators.
- Manufacture/procurement, transport, supply, install, test and commission the new control cables between the existing controllers / termination panels and new diesel generators.
- Ensure interfacing with all the other system requirements of the plant/installation.
- Test all cables and provided certificate.
- Develop, finalise and implement the optimised cable routing.
- Produce exact cable routing designs of all the cables.
- Cater for cable servitudes and cable racking.
- Implement all cable routing designs as approved.
- Implement all cable terminations.
- Produce all documentation and drawings

The power cables and cable racks shall be done in accordance with 240-56227443 (Requirements for Control and Power Cables for Power Stations Standard).

EARTHING AND LIGHTNING PROTECTION REQUIREMENTS

For the earthing and lightning protection Works, the Contractor shall:

- Ensure all new electrical equipment to be installed by the Contractor are earthed and properly bonded to the existing earth mat.
- Conduct an earth continuity tests and provide certification for quality controls.
- Ensure that new equipment is interfacing with all the other system requirements of the plant/installation.
- Produce all documentation and drawings for the design.

Earthing and lightning protection shall be done in accordance with the Earthing and Lightning Protection Standard (240-56356396).

C&I REQUIREMENTS

- Instruments must be available for purchase as All analogue instruments to be 4-20mA HART SMART instruments and must have 6 year drift-free guarantees for all instruments
- The controller should have a life of minimum 18 years
- Standardization of instrumentation spares and user replaceable
- Analogue instrumentation with software limit switching is preferred to binary instrumentation
- Motor Control and Protection as per Motor OEM best practice
- Alternator Control and Protection as per Alternator OEM best practice

Alarm signals and indications requirements

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There are only three alarm signals available at the unit control room (for all units), interfacing to existing DCS at Kriel Power Station, namely:

- Gen “A” or “B” running,
- Gen “A” or “B” faulty
- Gen “A” or “B” trip

The unit control room is situated at U3 on the 22 meter level. The existing remote plant alarm signals at the unit control room shall be retained. All other alarms and trip signals shall be integrated and displayed as a minimum on the existing local control panels (Deep Sea Controllers) as recommended in the Specification (240-62772907) and Schedule A.

1. Drawings

Refer to Scope of Work

2. Specifications

Refer to Scope of Work

The following is a list of specifications and standards applicable.

- [1] 240-53113685: Design Review Procedure (<https://hyperwave.eskom.co.za/240-53113685>)
- [2] 240-52844017: Eskom System Reliability, Availability and Maintainability Analysis Guideline
- [3] 240-56536505: Hazardous Locations Standard
- [4] SANS 10100-1 The structural use of concrete Part 1: Design
- [5] SANS 10100 -2 The structural use of concrete Part 2: Materials and execution of work
- [6] SANS 10162-1 The structural use of steel Part 1: Limit-states design of hot-rolled steelwork
- [7] SANS 50025: Hot rolled products of structural steel.

- All requirements are in accordance with the attached drawings, specifications listed above and the attached BOQ document which constitutes the scope of work as handed out for tendering purposes.
- It is required that the *Contractor* complies with Eskom's SHEQ requirements & Life Saving Rules.

3. Constraints on how the *Contractor* Provides the Works

- All of the works are to be performed in the H.V. Yard. The *Contractor* takes all necessary precautions and work in conjunction with Eskom personnel;

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- *Contractor* to provide an Environmental Plan in accordance to Eskom's Environmental Policy. Environmental Management Plan to be approved by Eskom prior to site establishment;
- The *Contractor* must be in possession of current valid HV Regulations and is responsible to be authorized by the Western Grid GMR2.1 to work in the Region;
- One of *Contractors* workers to have a current valid first aid certificate;
- It is the *Contractor's* responsibility to ensure that a permit to work is obtained before access to the work can be given;
- The *Contractor* is required to have an Eskom certified and authorized ORHVS person available as the work to be executed is in an existing yard;
- The *Contractor's* truck and cranes must have a valid compliance certificate with the truck driver and crane operators operating certificate. All slings, shackles and crimping tools to have valid current compliance certificates. These are required to be produced to the Project Manager two weeks prior to site establishment;
- The *Contractor* will only leave site on a written instruction issued by an Eskom site representative;
- Working hours will be arranged and discussed with the Project Manager;
- The *Contractor* is responsible for setting out the works as shown on the drawings;
- It will be the responsibility of the *Contractor* to ascertain from the station "Engineering Assistant" the position of any existing services on site. Once these are indicated to the *Contractor* they shall be deemed "known". Any costs incurred for repairs to any "known" services shall be for the *Contractor's* account;
- The *Contractor* shall be entirely responsible for providing telephones to their site office area;
- All Eskom rules and regulations shall be adhered to when operating within the site;
- It is required that the *Contractor* complies with Eskom's SHEQ requirements & Life Saving Rules;
- The *Contractor* is to perform magnetic cable detection in all areas where it is required to dig trenches;

Documentation

The *Contractor* is to provide all documentation as required and itemized below during the construction period.

- Programme
- Resource Schedule
- Health & Safety Plan
- Quality Assurance Plan & QITP's (Quality Inspection and Test Plans)
- Environmental Management Plan
- Forecast Rate of Invoicing
- Drawing Register
- Progress Schedule
- Application for Payment
- Test Results as required
- Weather Data
- Monthly Safety Report & minutes of all Safety meetings

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- Workers register
- And any other report/record that may be required

4.1 Meetings

- The *Contractor* holds a meeting daily (toolbox talk) with staff to discuss the day's work and risks associated.
- The *Contractor* holds a meeting every week with all the site personnel to discuss early warnings, compensation events, environmental, Health&safety and planning.
- A bi-weekly site progress meeting is held by the Project Manager, the *Contractor*, site personnel and all other relevant stakeholders.
- Meetings as listed in the Employer's SHE specification also needs to be carried out as specified.

4.2 Use of standard forms

The *Contractor* submits record of work done to date (verified by Employer's representative) to the Project Manager on the 15th of each month. The application is to have the same format as the relevant Bill of Quantities and show present, previous and total quantities to date.

4.3 Invoicing and payment

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

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

1. The words "**TAX INVOICE**" in a prominent place (preferably at the top of the page).
2. **Name, address and VAT registration number** of the **supplier**.
3. **Name, address and VAT registration number** of the **recipient**. *
Please note: Eskom's name has to be reflected as **Eskom Holdings Limited** on all tax invoices and Eskom's VAT number is 4740101508. The word just Eskom is not acceptable.
4. An **individual serial number** (tax invoice number) and **date issued**.
5. A **full and proper description** of goods and/or services supplied.
Please note: Merely referring to a contract is not sufficient.
6. The **quantity** or **volume** of goods or services supplied.*
7. Where the supply is subject to VAT at the standard rate, the following in Rand:
 - The pre-VAT value, VAT amount and consideration OR
 - The total consideration with a statement that VAT is included @14% OR
 - The total consideration and the Rand amount of VAT charged.
 - The *Contractor* attaches the detail assessment of the amount due to each tax invoice showing the Price for Work Done to Date for each item in the Price List for work which he has completed.
 - **The *Employer* will assess Payment certificates on actual work completed. Any possible issues regarding the claim will be addressed by the *Employer* to the *Contractor*.**
 - **On acceptance of the Payment Certificate by the *Employer* the *Contractor* submits his invoice as agreed upon with the *Employer*. Payment will take place as per the NEC Conditions of Contract.**

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The *Contractor* shall address the tax invoice to **XXXXXXXXXXXXXXXXXXXX**

4.4 Records of Defined Cost

For compensation events, the *Contractor* shall submit the invoice paid to the supplier for any equipment hired for the job on the said day and the payslip as proof remuneration paid to all the staff members who were supposed to be working on the project for that day. The mark-up on all compensation events not to exceed 10%

4.5 SD&L

Local Content

Local Content” refers to value added in South Africa by South African resources. Where a single contract involves a combination of local and imported goods and or services, the tender response must be separated into its components (where applicable) and included with tender documents. Local content is total spent minus the imported component.

This is calculated by subtracting the cost of imported goods and services in respect of the Works from the total Contract Amount.

Localisation Obligation Applicable:

Criteria	Target (%)	Proposed Target (%)
Local content to South Africa	100%	100%

4.6 BBBEE and referencing scheme

The conditions of B-BBEE standard 32-417 and Z2 Clauses will apply.
The recognition Level 4 is the minimum that the Contract should achieve.

4.7 Facilities to be provided by the *Contractor*

- The *Contractor* makes arrangements to provide accommodation for the *Contractors* employees.
- The *Contractor* provides 2 portable toilet facilities. The *Contractor* is to ensure that these facilities are kept in a clean condition to Eskom's satisfaction.
- The *Contractor* is entirely responsible for providing telephone connections to their site office area.
- All Eskom rules and regulations shall be adhered to when operating within the Sites.

4.8 Title to material

Title for materials shall be dealt with as directed by the Project Manager.

4.9 Subcontracting

Preferred subcontractors

The *Contractor* completes and attaches a list of *Subcontractors* for acceptance by the Project Manager.

Limitations on subcontracting

The *Contractor* shall not subcontract more than **25%** of the whole of the contract.

4.10 Designs by the *Contractor*

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The *Contractor* bears the responsibility for the adequacy of the designs. The *Contractor* complies with the design criteria stated in the Works Information supplied by the *Employer*.

4.11 Procurement

Minimum requirements of people employed on the Site

People employed on site shall have all relevant documents as required by law for employment within the country, i.e. relevant work permits and Identifications.

4.12 Temporary works

The *Contractor* is fully responsible for all temporary works which may be required.

6. Requirements for the programme

- The successful *Contractor* shall submit a detailed program to the Project Manager for acceptance within two (2) weeks of the starting date. The program is to conform strictly to the requirements of Core Clause 31 of the Contract Data.
- The program must be in **Primavera or Microsoft Project format** and the *Employer's* milestone dates must be indicated on this programme.
- Method statements which identifies the Equipment and other resources which the *Contractor* plans to use.
- Health and safety requirements
- The *Contractor* is to provide weekly and monthly progress reports, entailing a detailed schedule updated weekly.

The following dates shall be clearly reflected on the programme:

- Site inaugural meeting
- Starting and completion date for all activities as well as relevant key dates for hold or witness points
- All significant activities shall be shown in order to monitor the progress on site or in the workshop
- The programme shall also reflect a 2 week period for inspection and correcting of defects before the completion date

Note: Milestone dates will be subject to delay damages as prescribed by the contract. Updated programmes must be available at all site meetings reflecting progress to date.

Progress

The Contractor monitors progress weekly in conjunction with the *Employer's* representative. A weekly progress report is to be submitted to the Project Manager every Friday. The *Contractor's* weekly report contains details of all activities undertaken in the previous week including those activities that are planned for the following week. Resources and materials required for the activities to be included in the report.

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6. Services and other things provided by the *Employer*

Item	Date by which it will be provided
Water and electricity are provided by the <i>Employer</i> on site free of charge if available. However, the <i>Contractor</i> is required to install meters to measure consumption.	
Adequate and/or continuous electricity supply is not guaranteed and no claims for delay or standing time as a result of insufficiencies or failures will be considered. Any measures which the <i>Contractor</i> may require to maintain continuity and quality of supply shall be arranged by the <i>Contractor</i> at own expense	
A site for the <i>Contractor's</i> yard will be provided adjacent to the site of the <i>works</i> . The <i>Contractor</i> shall not occupy any site area other than that allocated.	
If required Eskom will make an area available for the <i>Contractor</i> to store equipment etc. The <i>Contractor</i> shall indicate requirements in the tender.	

C4: Site Information

C4.1: Information about the *site* at time of tender which may affect the works in this contract

1. Access limitations

Access to site is to be arranged with the Site Supervisor. Kriel Power Station is located in Mpumalanga, South Africa, in the eMalahleni Local Municipality (Nkangala District). eskom.co.za+2eskom.co.za+2
Its approximate coordinates are: 26°15'15" S, 29°10'46" E.

Working Times: Monday to Friday

Start: 07h00

Finish: 17h00

- Prior to commencement of work, the Contractor must accept the site.
- The Contractor must liaise with the following personnel at least fourteen days before work commences for authorizations and access to work in at Kriel Power Station.
Raosetene Mahlaku : System Engineer +27 17 615 2335
- Access to the Sites is controlled by the station-engineering assistants
The Contractor will adhere to all procedures sets out including acquiring security permits and attending safety induction courses
- Access to the area of the works is limited and the *Contractor* should be available to see the conditions on site and allow for this in the rates.

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2. Ground conditions in areas affected by work in this contract

It is the *Employers* assumption that the ground conditions are soft to intermediate. Should hard-rock be found on site, the Contractor is entitled to a compensation event.

3. Hidden and other services within the site

The *Employer* is to indicate all existing services on drawings. In addition, the *Employer* makes provision for cable and pipe detection in the Bill of Quantities for existing services below ground. Where the *Contractor* damages any cables and pipes that are indicated on construction drawings or pointed out by the *Supervisor*, the cost of repair or reinstatement is borne by the *Contractor*.

4. Details of existing buildings / facilities which *Contractor* is required to work on

The works will be done in a live yard so transmission live yard regulations shall be adhered to by the contractor.

5. Work stoppages

Eskom can call for a maximum of 2 work stoppages a month for all staff and *Contractors* to reflect on safety concerns in the organisation. This will be done in the form of a site induction and the Contractor is not entitled to any compensation event. Any work stoppage as a result of Health and Safety non-compliance by the *Contractor* shall not be accepted as a Compensation Event. The costs associated with such work stoppage shall be solely to the account of the *Contractor*.

6. Rain fall

If any one of these weather measurements recorded within a calendar month, before the Completion Date for the whole of the *works* and at the place stated in this Contract Data is shown to be more adverse than the 10 year average stated below, then the *Contractor* is entitled to a compensation event.

Month	Cumulative rain (mm)	No of days with rainfall > 10mm
January	200	6
February	150	6
March	120	5
April	110	4
May	40	3
June	20	2
July	30	2
August	30	2
September	60	3
October	140	6
November	160	7
December	170	6

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