

SUPPLY, INSTALLATION, AND COMMISSIONING OF AN SF6 FREE 5-WAY MOTORIZED RING MAIN UNIT (RMU) FOR TERMINAL 1 SUBSTATION AT CAPE TOWN INTERNATIONAL AIRPORT FOR THE PERIOD OF 12 MONTHS



NEC3 Engineering & Construction Contract

Between **Airports Company South Africa**
(Registration no: 1993/004149/06)

and
(Reg No. _____)

For the:

Supply, installation, and commissioning of an SF6 free 5-Way motorized ring main unit (RMU) for Terminal 1 Substation at Cape Town International Airport for the period of 12 months

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CONTRACT NUMBER: RFQ 72565

SUPPLY, INSTALLATION, AND COMMISSIONING OF AN SF6 FREE 5-WAY MOTORIZED RING MAIN UNIT (RMU) FOR TERMINAL 1 SUBSTATION AT CAPE TOWN INTERNATIONAL AIRPORT FOR THE PERIOD OF 12 MONTHS

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:

Supply, installation, and commissioning of an SF6 free 5-Way motorized ring main unit (RMU) for Terminal 1 Substation at Cape Town International Airport for the 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.

The offered total of the Prices exclusive of VAT is	R
Value Added Tax @ 15% is	R
The offered total of the amount inclusive of VAT is	R
(in words)	

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

Signature(s)

Name(s) _____

DATE: _____

Capacity _____

**For the
tenderer:**

(Insert name and address of organisation)

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

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

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

Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s)

Name(s)

DATE:

Capacity

**for the
Employer**

(Insert name and address of organisation)

Name &
signature of
witness

Date

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

No.	Subject	Details
1		
2		
3		
4		
5		
6		
7		

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

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

For the tenderer:

For the Employer

Signature	_____	_____
Name	_____	_____
Capacity	_____	_____
On behalf of	(Insert name and address of organisation) _____	(Insert name and address of organisation) _____
Name & signature of witness	_____ _____	_____ _____
Date	_____	_____

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C1.2 ECC3 Contract Data

Part one - Data provided by the *Employer*.

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

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option	
		A: Priced contract with activity schedule
	dispute resolution Option	W1: Dispute resolution procedure
	and secondary Options	
		X5 & X7: Sectional Completion and delay damages used together
		X15: Limitation of <i>Contractor's</i> liability for design to reasonable skill and care
		X16: Retention
		X17: Low performance damages
		X18: Limitation of liability
		Z: <i>Additional conditions of contract</i>
	of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)	
10.1	The <i>Employer</i> is:	Airports Company South Africa SOC Limited (reg. no: 1993/004149/06), a juristic person incorporated in terms of the company laws of the Republic of South Africa
	Address	Administrative Building, Southern Office Block, Cape Town International Airport, Western Cape 7525
10.1	The <i>Project Manager</i> is:	
	Address	Administrative Building, Southern Office Block, Cape Town International Airport, Western Cape 7525
	Tel	
	Fax	N/A
	e-mail	

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10.1	The <i>Supervisor</i> is: (Name)							
	Address	Administrative Building, Southern Office Block, Cape Town International Airport, Western Cape 7525						
	Tel No.							
	Fax No.	N/A						
	e-mail							
11.2(13)	The <i>works</i> are	Supply, installation, and commissioning of an SF6 free 5-Way motorized ring main unit (RMU) for Terminal 1 Substation at Cape Town International Airport for the period of 12 months						
11.2(14)	The following matters will be included in the Risk Register	Not Applicable						
11.2(15)	The <i>boundaries of the site</i> are	Cape Town International Airport (CTIA)						
11.2(16)	The Site Information is in	Part 4: Site Information						
11.2(19)	The Works Information is in	Part 3: Scope of Work and all documents and drawings to which it makes reference.						
12.2	The <i>law of the contract</i> is the law of	the Republic of South Africa						
13.1	The <i>language of this contract</i> is	English						
13.3	The <i>period for reply</i> is	Two (02) weeks						
2	The Contractor's main responsibilities	Data required by this section of the core clauses is provided by the <i>Contractor</i> in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data.						
3	Time							
11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	Twelve (12) months from the date of contract signing by ACSA						
30.1	The <i>access dates</i> are:	<table><tr><th colspan="2">Part of the Site</th><th>Date</th></tr><tr><td>1</td><td>Terminal 1 Substation</td><td>Any day with prior arrangement</td></tr></table>	Part of the Site		Date	1	Terminal 1 Substation	Any day with prior arrangement
Part of the Site		Date						
1	Terminal 1 Substation	Any day with prior arrangement						
31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	Two (02) weeks from the Contract Date.						
31.2	The <i>starting date</i> is	Upon signing of the contract by ACSA						
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	Two (02) weeks.						
35.1	The <i>Employer</i> is not willing to take over the <i>works</i> before the Completion Date.	The employer will have access to the works during construction and prior to completion, however, such access will not relieve the						

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		contractor from liability for the completion of the works in accordance with the Works Information and in terms of this contract.
4	Testing and Defects	
42.2	The <i>defects date</i> is	Fifty-two (52) weeks after completion of the whole of the works.
43.2	The <i>defect correction period</i> is	Two (02) weeks
47	The Contractor submits a quality plan for acceptance within:	Two (02) weeks from the Contract Date.
5	Payment	
50.1	The <i>assessment interval</i> is	Four (04) weeks
51.1	The <i>currency of this contract</i> is the	South African Rand.
51.2	The period within which payments are made is	After thirty (30) days from the invoice date.
51.4	The <i>interest rate</i> is	The prime lending rate of Nedbank as determined from time to time
6	Compensation events	No data required for this section of the conditions of contract.
8	Risks and insurance	
80.1	These are additional <i>Employer's</i> risks	No data required for this of the conditions of contract
81.1	The Contractor's Risk	Add: <i>Definition of Force Majeure -</i> <i>The following additional conditions must satisfied:</i> <i>(1) The Contractor has engaged with the persons responsible for the riot, commotion, disorder, strike or lockout; has met with the persons or leaders; and has recorded the persons or leaders details, their grievances, the organisations involved, all threats made; and has requested the persons or leaders to cease all unlawful conduct; and</i> <i>(2) The Contractor has obtained proof of the riot, commotion, disorder, strike or lockout, and of any unlawful conduct; and</i> <i>(3) The Contractor has reported all threats and unlawful conduct to the South African Police Service; and</i> <i>(4) The Contractor has brought an urgent application to the court on an ex parte basis that correctly identify the respondents and define the unlawful conduct to be interdicted; and</i> <i>(5) The Contractor has ensured that the court order is enforced.</i>
84.1	The <i>Employer</i> provides these insurances from the Insurance Table	Refer appendix 3 for insurance requirements

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84.1	The <i>Employer</i> provides these additional insurances	Refer appendix 3 for insurance requirements
84.1	The <i>Contractor</i> provides these additional insurances	Refer appendix 3 for insurance requirements
84.2	The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the <i>works</i> , Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i>) caused by activity in connection with this contract for any one event is	Refer appendix 3 for insurance requirements
84.2	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract for any one event is	As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the <i>Contractor's</i> common law liability for people falling outside the scope of the Act with a limit of Indemnity as prescribed.
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 activity schedule	There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.
11	Data for Option W1	
W1.1	The <i>Adjudicator</i> is (Name)	The person selected from the panel of adjudicators listed in Annexure C of this Contract Data, by the party intending to refer a dispute to him.
W1.2(3)	The <i>Adjudicator nominating body</i> is:	The Chairman of the Johannesburg Society of Advocates, or his successor or his nominee.
W1.4(2)	The <i>tribunal</i> is:	Arbitration.
W1.4(5)	The <i>arbitration procedure</i> is	The latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.
	The place where arbitration is to be held is	In the city where the Site is located, within 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	

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X2	Changes in the law	There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.		
X5	Sectional Completion			
X5.1	The <i>completion date</i> for each <i>section</i> of the <i>works</i> is:	Section	Description	Completion date
		1	Procurement of Equipment and Commencement of works	20 October 2025
		2	Completion of all installation works	30 January 2026
		3	Commissioning, Signoffs, and project close-out.	31 March 2026
X5 & X7	Sectional Completion and delay damages used together			
X5.1 X7.1	Delay damages for late Completion of the <i>sections</i> of the <i>works</i> are:	section	Description	Amount per day
		1	Procurement of Equipment and Commencement of works	Five percent (5%) on the cost of the delayed equipment delivery to site.
		2	Completion of all installation works	Five percent (5%) on the cost of the delayed installation works on-site.
		3	Commissioning, Signoffs, and project close-out.	Five percent (5%) on the cost of the delayed commissioning, signoffs, and project close-out
	The total delay damages payable by the <i>Contractor</i> does not exceed:	Fifteen percent (15%) of the total project value		
X15	Limitation of the <i>Contractor's</i> liability for his design to reasonable skill & care	There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.		
X16	Retention (not used with Option F)			
X16.1	The <i>retention free amount</i> is	Retention will not be charged on the amount for the procurement of equipment and materials		
	The <i>retention percentage</i> is	Five percent (5%) of the total project value		
X17	Low performance damages			

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X17.1	The amounts for low performance damages are:	Amount	Performance level
		100% of the Cost and incurred expenses	For the poor quality or unacceptable job standard performed by the contractor
		100% of the Cost and incurred expenses	For the inferior material and or equipment used on-site.
X18	Limitation of liability		
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:	The total cost of the incurred losses and or repairs to the damages caused.	
X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to:	The total cost of the incurred losses and or repairs to the damages caused.	
X18.3	The <i>Contractor's</i> liability for Defects due to his design which are not listed on the Defects Certificate is limited to	The total cost of the incurred losses and or repairs to the damages caused and the total cost of paying a third party/parties for the new designs, installations, commissioning and signoffs.	
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	The <i>Contractor's</i> total liability for the additional excluded matters is not limited.	
		The additional excluded matters are amounts for which the <i>Contractor</i> is liable under this contract for • Defects due to his design which arise before the Defects Certificate is issued, • Defects due to manufacture and fabrication outside the Site, • loss of or damage to property (other than the <i>works</i>, Plant and Materials), • death of or injury to a person; • damage to third party property; and • infringement of an intellectual property right.	
X18.5	The <i>end of liability date</i> is	The date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.	
Z	The <i>Additional conditions of contract</i> are	Z1 to Z24 below.	

AMENDMENTS TO THE CORE CLAUSES

Z1 Interpretation and the law

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- Z1.1 Add to core clause 12.3:** Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the *Project Manager*, the *Supervisor*, 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.
- Z1.2 Add the following as a new core clause 12.5:**
- Z1.2.1** In this contract:
- Z1.2.1.1** references to any Party to the Contract include its successors or permitted assigns;
- Z1.2.1.2** references to the Contractor include the obligations of its personnel;
- Z1.2.1.3** the references to the provisions of any law include such provisions as amended, re-enacted or consolidated from time to time in so far as such amendment, re-enactment or consolidation applies or is capable of applying to any works under this Contract;
- Z1.2.1.4** references to this Contract and any deed, Contract or instrument are deemed to include references to this Contract or such other deed, agreement or instrument as amended, novated, supplemented, varied or replaced from time to time;
- Z1.2.1.5** references to a "person" include a natural person, company or any other artificial person or other corporate entity, a charity, trust, partnership, joint venture, syndicate, or any other association of persons;
- Z1.2.1.6** references to "month" means a calendar month;
- Z1.2.1.7** headings are for convenience only and are not taken into consideration in the interpretation of the Contract;
- Z1.2.1.8** where any number of days is prescribed, those days are reckoned exclusively of the first and inclusively of the last day unless the last day falls on a day that is not a working day, in which event the last day is the next succeeding working day;
- Z1.2.1.9** any provision in Contract that is or may become illegal, invalid or unenforceable in any jurisdiction is ineffective to the extent of such prohibition or unenforceability in such jurisdiction and is treated as severed from the balance of Contract in such jurisdiction, without invalidating the remaining provisions of Contract in such jurisdiction or affecting it in any other jurisdiction;
- Z1.2.1.10** references to any amount means that amount exclusive of VAT, unless the amount expressly includes VAT;
- Z1.2.1.11** the rule of construction that if general words or terms are used in association with specific words or terms that are a species of a particular genus or class, the meaning of the general words or terms shall be restricted to that same class shall not apply, and whenever the word "including" is used followed by specific examples, such examples shall not be interpreted so as to limit the meaning of any word or term to the same genus or class as the examples given;
- Z1.2.1.12** the rule of construction that the Contract is interpreted against or to the disadvantage of the party responsible for the drafting or preparation of Contract does not apply;
- Z1.2.1.13** words and abbreviations that have well known technical or trade meanings are used in the Contract in accordance with such recognized meanings;
- Z1.2.1.14** references to a "*subsidiary*" or a "*holding company*" is references to a direct or indirect subsidiary or holding company as defined in the law of the jurisdiction of the place of incorporation of the company that has a subsidiary or holding company and "*affiliate*" is any company that is under common control with such subsidiary or holding company;
- Z1.2.1.15** time is of the essence in the performance of the parties' respective obligations.

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Z2 The Project Manager and Supervisor: add the following at the end of core clause 14.2:

Z2.1 The Project Manager and the Supervisor may take an action which they have delegated.

Z3 Early Warning: add the following at the end of core clause 16.2:

Z3.1 The Contractor ensures that a subcontractor attends risk reduction meeting if its attendance would assist in deciding the actions to be taken.

Z4 Providing the Works: Delete core clause 20.1 and replace with the following:

Z4.1 The *Contractor* provides the works in accordance with the Works Information and warrants that the results of the Works, when complete, shall be fit for their intended purpose as stated in the Works Information, and if no such purposes is stated, the ordinary purpose of the Works.

Z5 Subcontracting:

Z5.1 The following clause is added as a new core clause 26.4: "Within 5 days of request by the *Project Manager*, the Contractor provides proof to the *Project Manager* that the Contractor's payment obligations towards its Subcontractors have been discharged. Failure by the Contractor to provide such proof to the satisfaction of the *Project Manager* entitles the *Employer* to instruct the *Project Manager* to certify payment directly to any such Subcontractor and the *Contractor* shall have no recourse to recover such amounts from the *Employer*. Such direct payment do not create privity of contract between the *Employer* and such Subcontractor. The *Employer* may recover such direct payment from the *Contractor*."

Z6 Other responsibilities: add the following at the end of core clause 27:

Z6.1 The *Contractor* has satisfied himself, prior to the Contract Date, as to the completeness, sufficiency and accuracy of all information and drawings provided to him as at the Contract Date.

Z6.2 The *Contractor* is responsible for the correct setting out of the *Works* in accordance with the original points, lines and levels stated in the *Works* Information or notified by the *Project Manager*, *Supervisor* or the *Employer*. Any errors in the positioning of the *Works* are rectified by the *Contractor* at the *Contractor's* own costs.

Z7 Acceleration: add the following new provisions at the end of core clause 36:

Z7.1 The Project Manager's reply is either:

Z7.1.1 A notification that the quotation is accepted, in which case, the *Project Manager* changes the Prices, Completion Date and Key Dates and accepts the revised programme; or

Z7.1.2 A notification that the quotation is not accepted and that the Prices, Completion Date and Key Dates are not changed.

Z8 Extending the defects date: add the following as a new core clause 46:

Z8.1 If the *Employer* cannot use the *works* due to a Defect, which arises after Completion and before the *defects date*, the *defects date* is delayed by a period equal to that during which the *Employer*, due to a Defect, is unable to use the *works*.

Z8.2 If part of the *works* is replaced due to a Defect arising after Completion and before the *defects date*, the *defects date* for the part of the *works* which is replaced is delayed by a period equal to that between Completion and the date by when the part has been replaced.

Z8.3 The *Project Manager* notifies the *Contractor* of the change to a *defect date* when the delay occurs. The period between Completion and an extended *defects date* does not exceed twice the period between Completion and the *defects date* stated in the Contract Data.

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Z9 Quality Management System: add the following as a new core clause 47:

- Z9.1** The *Contractor* implements and maintains a quality management system with the requirements stated in the Works Information.
- Z9.2** Within the period stated in the Contract Data, the *Contractor* provides the *Project Manager* with a quality plan for acceptance. A reason for not accepting the quality plan is that it does not allow for the *Contractor* to Provide the Works.
- Z9.3** If any changes are made to the quality plan, the *Contractor* provides the *Project Manager* with the changes quality plan for acceptance.
- Z9.4** The *Project Manager* may instruct the *Contractor* to correct a failure to comply with the quality plan. This instruction is not a compensation event.

Z10 Assessing the amount due:

- Z10.1** Delete the second bullet point of core clause 50.1 and replace with the following: "within thirteen weeks of termination of this Contract"

Z11 Final assessment: add the following as a new core clause 53:

- Z11.1** The *Project Manager* makes a final assessment and certifies final payment in accordance with the Contract. The final payment is made within four weeks of the assessment.
- Z11.2** An assessment of the final amount due is conclusive evidence of the final amount due under or in connection with the Contract, unless a Party raises a dispute in relation to the assessment of the final amount due.
- Z11.3** The assessment of the final amount due is changed to include any agreement the Parties reached and/or a decision of the Adjudicator which has not been referred to the tribunal within four weeks of that decision. The changed assessment becomes conclusive evidence of the final amount due under or in connection with the Contract.

Z12 Notifying compensation events:

- Z12.1** Delete the last sentence in core clause 61.3 and replace with the following: "If the *Contractor* does not notify a compensation event within four weeks of becoming aware of the event, he is not entitled to a change in the Prices, the Completion date or a Key Date and the *Employer* is absolved from all liability in relation to such event."

Z13 Assessing compensation events:

- Z13.1** The following is added at the end of core clause 63.4: "the *Contractor* shall only be entitled to changes to the Prices, the Completion Date and/or the Key Date if the compensation event affects the critical path."

Z14 Termination

- Z14.1** Add the following to core clause 91.1, at the second main bullet, fifth sub-bullet point, after the words "assets or": "business rescue proceedings are initiated or steps are taken to initiate business rescue proceedings".

AMENDMENTS TO THE SECONDARY OPTION CLAUSES

Z15 Changes in Law: Add the following clause to secondary option X2 as X2.2:

- Z15.1** A change in law is defined as:
- Z15.1.1** the adoption, enactment, promulgation, coming into effect, repeal, amendment, reinterpretation, change in application or other modification after the Contract Date of any law, excluding (i) the enactment of any bill inside the country, but only if such bill is enacted without any material changes being made to the contents of such bill from the form published in the Gazette (as defined in the

SUPPLY, INSTALLATION, AND COMMISSIONING OF AN SF6 FREE 5-WAY MOTORIZED RING MAIN UNIT (RMU) FOR TERMINAL 1 SUBSTATION AT CAPE TOWN INTERNATIONAL AIRPORT FOR THE PERIOD OF 12 MONTHS

Interpretation Act, 1957) as at the Contract Date, and (ii) any such modification in law relating to any taxes, charges, imposts, duties, levies or deductions that are assessed in relation to a person's income

Z15.1.2 any permit being terminated, withdrawn, amended, modified or replaced, other than (i) in accordance with the terms upon which it was originally granted, (ii) as a result of the failure by the *Contractor* to comply with any condition set out therein, or (iii) as a result of any act or omission of the *Contractor*, any Subcontractor or any affiliate to the *Contractor*.

Z16. Delay damages: add the following to secondary Option X7 (if applicable in this contract)

Z16.1 If the amount due for the *Contractor's* payment of delay damages reaches the limits stated in this Contract Data for Option X7, the *Employer* may, at its sole discretion, terminate the *Contractor's* obligation to Provide the Works.

Z16.2 If the *Employer* terminates in terms of this clause, the procedures and payment on termination as those applied for reasons R1 to R15 or R18 stated in the Termination Table

Z17 Performance Bond

Z17.1 **Amend the first sentence of clause X13.1 to read as follows:** The *Contractor* gives the *Employer* an unconditional, on-demand performance bond, provided by a bank or insurer which the *Project Manager* and the *Employer* have accepted, for the amount stated in the Contract Data and in the form set out in Annexure B of this Contract Data.

Z17.2 **Add the following new clause as Option X13.2:** The *Contractor ensures* that the performance bond is valid and enforceable until the end of the *contract period*. If the terms of the performance bond specify its expiry date and the end of the *contract period* does not coincide with such expiry date, four weeks prior to the said expiry date, the *Contractor* extends the validity of the performance bond until the end of the *contract period*. If the *Contractor* fails to so extend the validity of the performance bond, the *Employer* may claim the full amount of the performance bond and retain the proceeds as cash security

Z18 Limitation of liability: Insert the following new clause as Option X18.6:

Z18.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00.

Z18.2 Notwithstanding any other clause in this contract, any proceeds received from the security bonds and guarantees provided by the *Contractor* in terms of this Contract and any insurances or any proceeds which would have been received from any insurances but for the conduct of the *Contractor* shall be excluded from the calculation of the limitations of liability listed in the contract.

ADDITIONAL Z CLAUSES

Z19 Cession, delegation and assignment

Z19.1 The *Contractor* shall not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer*, which consent shall not be unreasonably withheld. This clause shall be binding on the liquidator/business rescue practitioner /trustee (whether provisional or not) of the *Contractor*.

Z19.2 The *Employer* may, on written notice to the *Contractor*, cede and delegate its rights and obligations under this contract to any person or entity.

Z20 Joint and several liability

Z20.1 If the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons, these persons are deemed to be jointly and severally liable to the *Employer* for the performance of the Contract.

Z20.2 The *Contractor* shall, within 1 week of the Contract Date, notify the *Project Manager* and the *Employer* of the key person who has the authority to bind the *Contractor* on their behalf.

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Z20.3 The *Contractor* does not materially alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without prior written consent of the *Employer*.

Z21 Ethics

Z21.1 The *Contractor* undertakes:

Z21.1.1 not to give any offer, payment, consideration, or benefit of any kind, which constitutes or could be construed as an illegal or corrupt practice, either directly or indirectly, as an inducement or reward for the award or in execution of this contract;

Z21.1.2 to comply with all laws, regulations or policies relating to the prevention and combating of bribery, corruption and money laundering to which it or the *Employer* is subject, including but not limited to the Prevention and Combating of Corrupt Activities Act, 12 of 2004.

Z21.2 The *Contractor's* breach of this clause 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). However, lawful inducements and rewards shall not constitute grounds for termination.

Z21.3 If the *Contractor* is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices, including but not limited to the making of offers (directly or indirectly), payments, gifts, gratuity, commission or benefits of any kind, which are in any way whatsoever in connection with the contract with the *Employer*, the *Employer* shall be entitled to terminate the contract in accordance with the procedures stated in core clause 92.2. The amount due on termination is A1.

Z22 Confidentiality

Z22.1 All information obtained in terms of this contract or arising from the implementation of this contract shall be treated as confidential by the *Contractor* and shall not be used or divulged or published to any person not being a party to this contract, without the prior written consent of the *Project Manager* or the *Employer*, which consent shall not be unreasonably withheld.

Z22.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until otherwise notified by the *Project Manager*.

Z22.3 This undertaking shall not apply to –

Z22.3.1 Information disclosed to the employees of the *Contractor* for the purposes of the implementation of this agreement. The *Contractor* undertakes to procure that its employees are aware of the confidential nature of the information so disclosed and that they comply with the provisions of this clause;

Z22.3.2 Information which the *Contractor* is required by law to disclose, provided that the *Contractor* notifies the *Employer* prior to disclosure so as to enable the *Employer* to take the appropriate action to protect such information. The *Contractor* may disclose such information only to the extent required by law and shall use reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed;

Z22.3.3 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);

Z22.4 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 *Project Manager*. All rights in and to all such images vests exclusively in the *Employer*.

Z22.5 The *Contractor* ensures that all his Subcontractors abide by the undertakings in this clause.

Z23 Liens and Encumbrances

Z23.1 The *Contractor* keeps the Equipment used to Provide the Services free of all liens and other encumbrances at all times. The *Contractor*, vis-a-vis the *Employer*, waives all and any liens which he may from time to time have, or become entitled to over such Equipment and any part thereof and procures

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that his Subcontractors similarly, vis-a-vis the *Employer*, waive all liens they may have or become entitled to over such Equipment from time to time

Z24 Intellectual Property

Z24.1 Intellectual Property ("IP") rights means all rights in and to any patent, design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works.

Z24.2 IP rights remain vested in the originator and shall not be used for any reason whatsoever other than carrying out the *works*.

Z24.3 The *Contractor* gives the *Employer* an irrevocable, transferrable, non-exclusive, royalty free licence to use and copy all IP related to the *works* for the purposes of constructing, repairing, demolishing, operating and maintaining the works.

Z24.4 The written approval of the *Contractor* is to be obtained before the *Contractor's* IP made available to any third party which approval will not be unreasonably withheld or delayed. Prior to making any *Contractor's* IP available to any third party the *Employer* shall obtain a written confidentiality undertaking from any such third party on terms no less onerous than the terms the *Employer* would use to protect its IP.

Z24.5 The *Contractor* shall indemnify and hold the *Employer* harmless against and from any claim alleging an infringement of IP rights ("**the claim**"), which arises out of or in relation to:

Z24.5.1 the *Contractor's* design, manufacture, construction or execution of the Works;

Z24.5.2 the use of the *Contractor's* Equipment, or

Z24.5.3 the proper use of the Works.

Z24.6 The *Employer* shall, at the request and cost of the *Contractor*, assist in contesting the claim and the *Contractor* may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it.

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Annexure B: Pro forma Security Bonds and Guarantee

Pro forma Retention Money Guarantee (may be used when Option X16 applies)

[To be reproduced exactly as shown below on the letterhead of the Bank providing the Guarantee]

For use with the NEC3 Engineering and Construction Contract (April 2013)

The Airports Company South Africa SOC Limited
Riverwoods Office Park, The Maples, 24 Johnson Road,
Bedfordview 2008.

Date:

Dear Sirs

Reference No. [●] **[Drafting Note: Guarantor's reference number to be inserted]**

Retention Money Guarantee: **[Drafting Note: Name of Contractor to be inserted]**

Project [●]

1. In this Guarantee the following words and phrases shall have the meaning stated:-

- 1.1 **"Contract"** means the construction contract entered into between the Employer and the Contractor (Contract Reference No. _____ and such amendments or additions to the Contract as may be agreed in writing between the parties.
- 1.2 **"Contractor"** means **[insert]**
- 1.3 **"Employer"** means Airports Company South Africa SOC Limited, a company registered in accordance with the laws of the South Africa
- 1.4 **"Expiry Date"** means **[insert]**
- 1.5 **"Guarantee"** means this on-demand, unconditional, irrevocable advance payment guarantee, which is independent and/or separate from the underlying Contract.
- 1.6 **"Guaranteed Amount"** means the sum of **[insert]**, being the total value of the advance payment made in terms of the Contract.
- 1.7 **"Guarantor"** means **[insert]**
- 1.8 **"Guarantor's Address"** mean **[insert]**

2. The Contractor is required to obtain a retention money guarantee under the Contract.

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3. The Guarantor hereby undertakes to pay the Employer any sum or sums not exceeding the Guarantee Amount in total (the “**Demand Amount**”), upon receipt of a written demand delivered to the Guarantor’s Address, stating that the Contractor has failed to carry out his obligation(s) to remedy certain defects for which he is responsible under the Contract and, the nature of such defects (without being required to prove the nature of the breach and the amount claimed). The written demand shall be signed by the Employer and be accompanied by the original Guarantee.
4. The Guarantee Amount shall be reduced by 50% at the earlier of Completion of the whole of the Works and the date on which the Employer takes over the whole of the Works(as defined in the Contract). After receiving the Certificate of Completion from the Contractor the Guarantor shall promptly notify the Employer of the revised Guarantee Amount.
5. This Guarantee automatically comes into full force and effect on the signature date by the Guarantor and shall automatically expire 14 days after the assessment made at the Completion of the whole of the Works or the assessment after the Employer takes over the whole of the Works if this is before Completion of the whole of the Works.
6. The obligations under this Guarantee constitute direct primary, irrevocable and unconditional obligations, do not require any previous notice to or claim against the Contractor, and shall not in any way be released or discharged or otherwise absolved of liability hereunder by reason of any arrangement or change in relationship made between the Contractor and the Employer and/or between the Guarantor and Contractor; nor any alteration in the obligations undertaken by the Contractor or in the terms of the Contract; nor any indulgence, failure, delay by the Employer as to any matter; nor any dissolution or liquidation or such other analogous event of the Contractor (whether or not the Guarantor has notice thereof).
7. The Employer shall be entitled to arrange its affairs with the Contractor in any manner which it sees fit, without advising us and without affecting our liability under this Guarantee. This includes, without limitation, any extensions, indulgences, release or compromise granted to the Contractor or any variation under or to the Contract.
8. All payments made by Guarantor shall be due and payable in the amount specified in any payment demand made in respect hereof by the Employer and shall be made free and clear of and without any deduction for or on account of any tax or future taxes, levies, imposts, duties, charges, fees, set off, counterclaims, deductions or withholdings of any nature whatsoever and by whomever imposed. All charges of the Guarantor related to the issuance or performance of this Guarantee (including, but not limited to, the negotiation, payment, extension or transfer hereof) shall be borne by the Contractor and under no circumstances shall be charged to the Employer by the Guarantor.

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

CONTRACT NO. _____

SUPPLY, INSTALLATION, AND COMMISSIONING OF AN SF6 FREE 5-WAY MOTORIZED RING MAIN UNIT (RMU) FOR TERMINAL 1 SUBSTATION AT CAPE TOWN INTERNATIONAL AIRPORT FOR THE PERIOD OF 12 MONTHS

9. This Guarantee shall be governed by and construed in accordance with the law of the Republic of South Africa and shall be subject to the jurisdiction of the High Court of the Republic of South Africa.
10. This Guarantee, with the required demand notice, shall be regarded as a liquid document for the purposes of obtaining a court order.
11. The Guarantor chooses as its *domicilium citandi et executandi* for all purposes in connection with this Guarantee at the Guarantor's Address.
12. If at any time any one or more of the provisions of this Guarantee is or becomes illegal, invalid or otherwise unenforceable in any respect neither the legality, validity or enforceability of the remaining provisions of this Guarantee, nor the legality, validity or enforceability of such provision, under the law shall in any way be affected or impaired as a result.

SIGNED at _____ on _____ Day of _____ 202__

For and on behalf of the **GUARANTOR**, duly authorised and warranting such authority

Full Name: _____

Capacity: _____

Witness: _____

[Insert Guarantor's stamp]

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Annexure C: ACSA Panel of Adjudicators

One of the following adjudicators shall be selected by the referring party as and when a dispute arises.

Potential Adjudicator	Email Address	Chamber
Adv. Mkhululi Duncan Stubbs	duncan.stubbs@gmail.com	Thulamela Chambers
Adv. Arzhar Bham SC	bhamae@law.co.za	Victoria Mxenge
Adv. Mohhamed Chohan SC	chohann@counsel.co.za	Group One
Adv. Benny Makola	benny.makola@gmail.com	Group 621
Adv. Vincent Maleka SC	ivmaleka@mweb.co.za	Thulamela Chambers
Adv. Chris Loxton SC	loxton@counsel.co.za	Group One

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

CONTRACT NO. _____

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Annexure D: ACSA Insurance Clauses

REFER APPENDIX 3 FOR INSURANCE INFORMATION/REQUIREMENTS

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C1.2 Contract Data

Part two - Data provided by the *Contractor*.

Clause	Statement	Data
10.1	The <i>Contractor</i> is (Name): Address Tel No. Fax No.	
11.2(18)	The <i>working areas</i> are the Site and	
24.1	The <i>Contractor's</i> key persons are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job: Responsibilities: Qualifications: Experience: 3 Name: Job: Responsibilities: Qualifications: Experience: 4 Name: Job: Responsibilities: Qualifications: Experience:	CV's (and further key persons data including CVs) are appended to Tender Schedule entitled.
11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

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A	Priced contract with activity schedule	
11.2(20)	The <i>activity schedule</i> is in	
11.2(30)	The tendered total of the Prices is	(in figures) (in words), excluding VAT

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PART 2: PRICING DATA

Document reference	Title	Page No.
C2.1	Pricing assumptions: Option A	25
C2.2	The <i>activity schedule</i>	27

SUPPLY, INSTALLATION, AND COMMISSIONING OF AN SF6 FREE 5-WAY MOTORIZED RING MAIN UNIT (RMU) FOR TERMINAL 1 SUBSTATION AT CAPE TOWN INTERNATIONAL AIRPORT FOR THE PERIOD OF 12 MONTHS

C2.1 Pricing assumptions: Option A

ALSO REFER TO PRICING INSTRUCTIONS IN TENDER DOCUMENT.

The *conditions of contract*

How work is priced and assessed for payment

Clause 11 in NEC3 Engineering and Construction Contract, April 2013 (ECC3) Option A states:

Identified and defined terms	11 11.2	(20) The Activity Schedule is the <i>activity schedule</i> unless later changed in accordance with this contract.
		(22) Defined Cost is the cost of the components in the Shorter Schedule of Cost Components whether work is subcontracted or not excluding the cost of preparing quotations for compensation events.
		(27) The Price for Work Done to Date is the total of the Prices for • each group of completed activities and • each completed activity which is not in a group. A completed activity is one which is without Defects which would either delay or be covered by immediately following work.
		(30) The Prices are the lump sum prices for each of the activities on the Activity Schedule unless later changed in accordance with this contract.

Option A is a lump sum form of contract where the work is broken down into activities, each of which is priced by the tendering contractor as a lump sum. Only completed activities are assessed for payment at each assessment date; no part payment is made if the activity is not completed by the assessment date. Function of the Activity Schedule

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

Link to the programme

Clause 31.4 states that "The *Contractor* provides information which shows how each activity on the Activity Schedule relates to the operations on each programme which he submits for acceptance". Hence when compiling the *activity schedule*, the tendering contractor needs to show each activity on the programme he submits with his tender.

Preparing the *activity schedule*

The tendering contractor prepares the *activity schedule* and should study the ECC3 Guidance Notes pages 19 and 20 before doing so. The *Employer* may have instructed the tendering contractor to include particular activities which he has specified and requires the *Contractor* to identify them in his *activity schedule*.

- 1 Generally it is the Contractor who prepares the Activity Schedule as part of his tender by breaking down the work described within the Works Information into suitable activities which can be well defined, priced as a lump sum and shown on the programme. The Employer, in his Conditions of Tender or in a Tender Schedule, may have listed some items that he requires the Contractor to include in his activity schedule

SUPPLY, INSTALLATION, AND COMMISSIONING OF AN SF6 FREE 5-WAY MOTORIZED RING MAIN UNIT (RMU) FOR TERMINAL 1 SUBSTATION AT CAPE TOWN INTERNATIONAL AIRPORT FOR THE PERIOD OF 12 MONTHS and be priced accordingly.

2 The Prices are defined in clause 11.2(20) as the lump sum for each activity in the activity schedule and the Price for Work Done to Date (PWDD) (the amount due to the contractor) is defined in clause 11.2(24) as the total of the Prices for each activity that has been completed. Hence activities in the activity schedule should be structured so as to provide an acceptable monthly cash flow as they are only assessed for payment on the assessment date if they have been completed.

3 As the Contractor has an obligation to correct Defects (core clause 43.1) and there is no compensation event for this unless the Defect was due to an Employer's risk, the lump sum Prices must also include for the correction of Defects.

4 If the Contractor has decided not to identify a particular activity, the cost to the *Contractor* of doing the work must be included in, or spread across, the other Prices in order to fulfil the obligation to complete the works for the tendered total of the Prices.

5 There is no adjustment to the lump sum activity schedule price if the amount, or quantity, of work within that activity later turns out to be different to that which the contractor estimated at time of tender. The only basis for a change to the Prices is as a result of a compensation event. See Clause 60.1.

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

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

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An activity schedule could have the following format:

Item No.	Programme Reference	Activity description	Price

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C2.2 the *activity schedule*

PRICING/ACTIVITY SCHEDULE		
Part	Activity/Pricing Schedules	Price (ZAR)
1	Preliminary and General (Safety File, and Permits)	R 13,000.00
2	Decommissioning of a 3-Way RMU that is currently in service and remove together with a 4-Way RMU that is not in service to a storage facility within 5 km of Terminal 1 Substation	R 12,000.00
3	Review, vetting, acceptance, adoption and approval of the technical specification as your own. (By a professional Technician/Technologist/Engineer registered with ECSA in electrical category)	R 20,000.00
4	Supply, delivery, and installation of a SF6 free 5-Way motorized ring main unit (RMU) as per the specification	R
5	Supply and installation of the battery tripping unit (BTU) as per the specification	R
6	Supply and testing of the pendant switch/umbilical cord as per the specification	R
7	Supply and installation of 70 mm ² XLPE x 20 meters (From the new MV switch to each one of the two transformers in the Sub)	R
8	Supply and installation of 4 x screened cable terminations (MV switch incomers and transformer feeders)	R
9	Supply and installation of 2 x cable terminations for transformer connections using a 70 mm ² XLPE cable	R
10	Factory Acceptance Testing (FAT) of the SF6 free 5-Way motorized RMU at the service provider's or OEM's workshop before delivery to site.	R
11	Site Acceptance Testing (SAT) upon delivery of the SF6 free 5-Way motorized RMU on-site.	R
12	Commissioning, Certificate of Compliance (COC) and Professional Technician/Technologist/Engineer Signoff	R
SUB-TOTAL		R
13	Contingencies @ 5%	R
Grand Total Excl. VAT (Carry over to form of offer)		R
VAT @ 15% (Carry over to form of offer)		R
Grand Total Incl. VAT (Carry over to Form of Offer)		R

PART 3: SCOPE OF WORK

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SUPPLY, INSTALLATION, AND COMMISSIONING OF AN SF6 FREE 5-WAY MOTORIZED RING MAIN UNIT (RMU) FOR TERMINAL 1 SUBSTATION AT CAPE TOWN INTERNATIONAL AIRPORT FOR THE PERIOD OF 12 MONTHS

DESCRIPTION OF THE WORKS

Executive overview

The scope of works includes: (1) the supply, delivery, installation, and commissioning of a new SF6 free 5-Way motorized ring main unit (RMU) as per the specification, (2) Supply and installation of a battery tripping unit (BTU) as per the specification, and (3) Supply of a 15-meter standoff pendant switch as per the specification.

Employer's objectives and purpose of the works

The main objective of this contract is to replace the current 3-way RMU with a new SF6 free 5-Way motorized RMU to ensure continuity of supply to the international terminal building and to comply with the SANS 10142-2 electrical medium voltage (MV) installations code. Additionally, this will further reduce/minimize the safety risk to authorized MV operators while conducting switching on the MV electrical network, since this switch will be operated at a safe distance through a pendant switch. Installing a 5-way RMU switch will allow for redundancy and ease of maintenance as one section of the MV switch can be switched off and isolated while the substation supply is maintained through the other section by using the bus-coupler. An SF6 free RMU will eliminate the risk of environmental impact should there be a leak or failure on the switch since SF6 gas has 23,500 times more global warming potential (GWP) to the atmosphere than that of CO₂.

Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
A	Amperes
AC	Alternating Current
ACSA	Airports Company South Africa
AIS	Air Insulated Switchgear
BI	Binary Input
BO	Binary Output
BTU	Battery Tripping Unit
CB	Circuit Breaker
CO ₂	Carbon Dioxide
COC	Certificate of Conformance
CTIA	Cape Town International Airport
DC	Direct Current

SUPPLY, INSTALLATION, AND COMMISSIONING OF AN SF6 FREE 5-WAY MOTORIZED RING MAIN UNIT (RMU) FOR TERMINAL 1 SUBSTATION AT CAPE TOWN INTERNATIONAL AIRPORT FOR THE PERIOD OF 12 MONTHS

ES	Earth Switch
GHG	Greenhouse Gas
GIS	Gas Insulated Switchgear
GWP	Global Warming Potential
HV	High Voltage
Hz	Hertz
IDMT	Inverse Definite Minimum Time
IEC	International Electrotechnical Commission
IED	Intelligent Electronic Device
kA	Kiloamperes
kV	Kilovolts
LED	Light Emitting Diode
LHS	Left Hand Side
LV	Low Voltage
MV	Medium Voltage
NC	Normally Closed
NEC	National Engineering Contract
NO	Normally Open
PILC	Paper Insulated Lead Cable
RHS	Right Hand Side
RMS	Root Mean Square
RMU	Ring Main Unit
SABS	South African Bureau of Standards
SANS	South African National Standards
SCADA	Supervisory Control and Data Acquisition
SCM	Supply Chain Management
SD	Switch Disconnector
SF6	Sulphur Hexafluoride
SF6 free	Free of Sulphur Hexafluoride
SOB	Southern Office Block

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TRF	Transformer
TX	Transformer
V	Volts
VPIS	Voltage Presence Indication System
XLPE	Cross Linked Polyethylene

WORKING HOURS

Working hours for this contract is afterhours from 23h30 to 04h30.

Works on this contract shall be planned such that operations of the airport are not impacted negatively.

Airport is operational 24 hours.

All works for this tender to be completed within a period of 1 year.

Works includes procurement and sourcing, delivery to site, installation, commissioning, and signoffs.

Scope Overview

The scope of works includes: (1) the supply, delivery, installation, and commissioning of a new SF6 free 5-Way motorized RMU as per the specification, (2) Supply and installation of a battery tripping unit (BTU) as per the specification, and (3) Supply of a 15-meter standoff pendant switch.

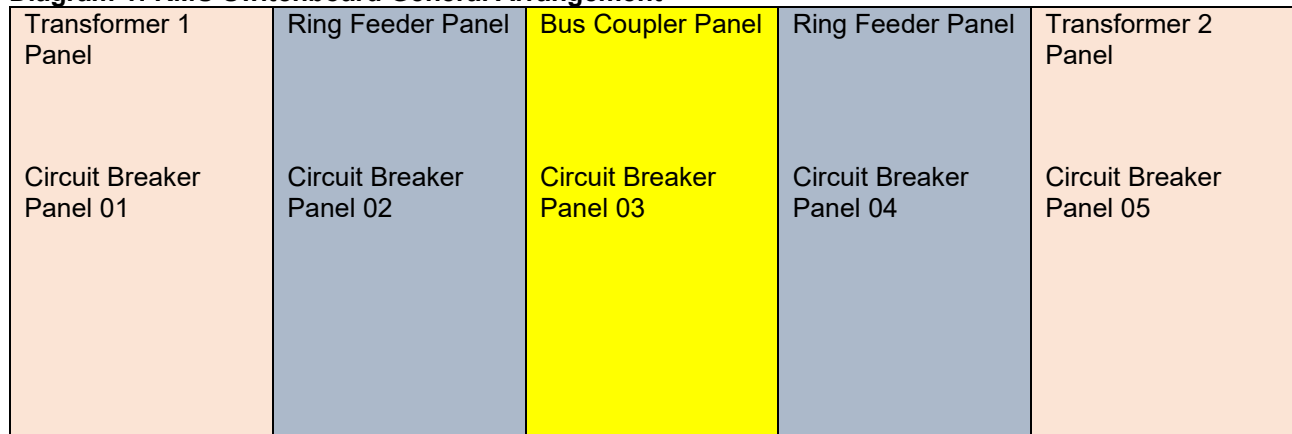
Design Technical Requirements

The designs and equipment shall conform in all respects with the requirements of the latest editions of the IEC standards, except where specified otherwise.

Table 1: General Technical Requirements

General Switchgear Specifications	
Switchgear type	Ring Main Unit (RMU)
Quantity of switchboards required	5 x motorized circuit breakers panel RMU
Rated voltage	12 kV
Rated short-duration power-frequency withstand voltage	28kV RMS – 1min
Rated frequency	50 Hz
Power frequency withstand voltage	As per IEC 62271-1
Impulse withstand voltage	As per IEC 62271-1
Rated normal current (for Ring Main Feeders, Busbar & CB feeder)	630 A
Rated short time withstand current (1sec and 3sec)	21 kA for 1sec and or 20 kA for 3sec
Partition class (SANS 62271-200)	Class PM
Service continuity category (SANS 62271-200)	Category LSC2
Switchgear extension	Extensible both on the LHS and the RHS
Auxiliary supplies	230V AC & 120/60/48/24 VDC
Internal insulation medium (ALL HV PARTS)	Air Insulated Switchgear (AIS) or Gas Insulated Switchgear (GIS) {SF6 free if GIS, & alternative gas to be an environmentally friendly gas with 0 GWP and 0 GHG emissions}

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Diagram 1: RMU Switchboard General Arrangement**Table 2: Individual Panel Specific Technical Specification (Transformer Feeder Panels)**

1. Transformer Feeder Panels			
Item	Item Description	Required Specification	Offered Specification (Bidder to Complete)
1.1	Type	Vacuum circuit breaker (with Disconnect and Earth Switch)	
1.2	Number of Panels	2 x TFR Panels (Panels 01 & 05)	
1.3	Panel current rating	630 A	
1.4	Internal insulation medium (ALL HV PARTS)	AIS or GIS (SF6 free if GIS, & alternative gas to be an environmentally friendly gas with 0 GWP and 0 GHG emissions)	
1.5	Internal insulation monitor	Required if GIS and linked to IED	
1.6	Breaker status indication	3 x LED's indicating breaker status as either "OPEN", "CLOSED" or "TRIPPED"	
1.7	Protection device Test Blocks	Required	
1.8	Metering device Test Blocks	Required	
1.9	Selector switches for operation mode	Local/Remote	
1.10	Panel heaters & switch	As per OEM Recommendation	
1.11	Circuit Breaker Details (SANS 62271-100)		
1.11.1	Circuit breaker insulating medium	Vacuum	
1.11.2	Mechanical endurance	M2 - 10000 operating cycles	
1.11.3	Electrical endurance	E2	
1.11.4	Rated capacitive breaking capacity	C2	
1.11.5	Circuit Breaker Class	S1	
1.11.6	Rated operating sequence	O - 0.3s - CO - 3min - CO	
1.11.7	Spare auxiliary contacts	4 x NO contacts and 4 x NC contacts	
1.11.8	Operating coils (1) Open coil (2) Close Coil (3) Trip Coil	Required, 120/60/48/24Vdc (separate from trip coil) Required, 120/60/48/24Vdc Required, 120/60/48/24Vdc	

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1.12	Circuit Breaker (CB) Operation (Normal Close and Open)		
1.12.1	(1) CB Motor operation	Required	
1.12.2	(2) CB operated by push buttons	Required	
1.12.3	(3) CB operated by SCADA / REMOTE control	Required	
1.12.4	(4) CB operated by IED / Relay	Required	
1.12.5	(5) CB operated by mechanical / manual tool	Required	
1.12.6	(6) CB Operated by Pendant switch	Required, Cannon type, with 15m lead and open/close	
1.13	Switch Disconnecter Details (SANS 62271-102)		
1.13.1	Mechanical endurance (disconnecter)	M1	
1.13.2	Spare auxiliary contacts	2 x NO contacts and 2 x NC contacts	
1.13.3	Disconnecter Operation a) Motor Operation b) Operated by Mechanical / Manual tool	Not Required Required	
1.14	Earth Switch Details (SANS 62271-102)		
1.14.1	Electrical endurance (earth switch)	E2	
1.14.2	Spare auxiliary contacts	2 x NO contacts and 2 x NC contacts	
1.14.3	Earth Switch Operation a) Motor Operation b) Operated by Mechanical / Manual tool	Not Required Required	
1.15	Cable and Cable Compartment Details		
1.15.1	Cable termination type	Dry, screened	
1.15.2	Bushing Type / rating	630 A	
1.15.3	Cable test facility	Front of panel, interlocked	
1.15.4	Cable live indication	Type VPIS with phasing	
1.15.5	Cable support	Non-magnetic and adjustable	
1.15.6	Cable support size	Suitable for XLPE/PILC 70mm ² to 240mm ² x 3-core	
1.15.7	Cable cover panel contacts	1 x NO contacts and 1 x NC contacts	
1.15.8	MV surge protection	Not required	
1.15.9	Earth Bar (pre-drilled)	Required	
1.16	Protection Device Details		
1.16.1	Protection Relay type	Intelligent Electronic Device (IED)	
1.16.2	Protection relay display	large display with single line diagram	
1.16.3	Communication protocol	Ethernet (Modbus TCP/IP) / IEC 61850	
1.16.4	Communication Connection Type	RJ45 (Cat 6)	
1.16.5	Standard	IEC	
1.16.6	Spare binary inputs and outputs	min. 3BI + 6BO (unused)	
1.16.7	Trip circuit supervision	required (main and back-up)	
1.16.8	Circuit Breaker condition monitoring	Not required	
1.16.9	Protection curve types	IEC / IDMT curves	
1.16.10	Protection Functions (1) Non direction OC	Required	
1.16.11	(2) Non directional EF	Required	

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1.16.12	(3) directional OC	Not required	
1.16.13	(4) directional EF	Not required	
1.16.14	(5) Differential protection	Not required	
1.16.15	(6) Restricted EF protection	Not required	
1.16.16	(7) TX Buchholz alarm and trip (Wired to annunciation or monitoring relay and IED)	Required	
1.16.17	(8) TX Overtemperature alarm and trip (Wired to annunciation or monitoring relay and IED)	Required	
1.16.18	TX Buchholz and Overtemperature annunciation or monitoring relay (Wired to IED)	Required	
1.16.19	(9) Arc flash protection	Required (wired to IED)	
1.16.20	(10) Auto Reclosing	Not required	
1.16.21	(11) Frequency based protection	Not required	
1.16.22	(12) Synchro-Check	Not required	
1.16.23	(13) External trip	Required	
1.16.24	Protection Relay measurement functions (1) Voltage (2) Current (3) Power (4) Power Quality	Required Required Not required Not required	
1.17	Metering Device/Power Meter Details		
1.17.1	Power meter type	PM8240	
1.17.2	Power meter measurements (1) Voltage (2) Current (3) Power (4) Power Quality	Required Required Required Required	
1.17.3	Communication protocol	Ethernet (Modbus TCP/IP)	
1.17.4	Communication Connection Type	RJ45 (Cat 6)	
1.18	Current / Voltage Transformers / Sensors Details		
1.18.1	Protection System CT's (1) CT 1 (2) CT 2	3 x 100-200/ 5A class 10P10 - ring type Not required	
1.18.2	Metering System CT's (1) CT 1 (2) CT 2	3 x 100-200/ 5A class 0,5 - ring type Not required	
1.18.3	Voltage Transformer (1) VT application (2) Measure Point (3) VT ratio	Required (Voltage Sensors) Cable Compartment Bushings Information by supplier	
1.19	Interlocks Details		
1.19.1	Opening Circuit Breaker (CB)	condition - circuit breaker spring charged	
1.19.2	Closing Circuit Breaker (CB)	condition - circuit breaker spring charged	
1.19.3	Opening Switch Disconnecter (SD)	condition - CB must be open, ES must be open, and cable cover on	
1.19.4	Closing Switch Disconnecter (SD)	condition - CB must be open, ES must be	

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		open, and cable cover on	
1.19.5	Closing Earth Switch (ES)	condition - SD must be open	
1.19.6	Closing Earth Switch (ES)	Incoming cable not live - Not required	
1.19.7	Opening Earth Switch (ES)	condition – none	
1.19.8	Cable cover	condition - ES must be closed	
1.20	Padlock Details		
1.20.1	Lock on earth switch	Required, branded ACSA, and coded/numbered with 2 set of keys	
1.20.2	Lock on operational push buttons	Required, branded ACSA, and coded/numbered with 2 set of keys	
1.20.3	Lock on cable cover	Not required	
1.20.4	Lock on circuit breaker	Required, branded ACSA, and coded/numbered with 2 set of keys	
1.20.5	Lock on switch disconnecter	Required, branded ACSA, and coded/numbered with 2 set of keys	
1.21	Special Requirements		
1.21.1	All relay spare inputs / outputs to be wired to terminal blocks	Required	
1.21.2	All NO / NC contacts for breaker, disconnecter, earth switch and cable door to be wired to terminal blocks	Required	
1.21.3	All terminal blocks to be located in LV cubicle	Required	
1.21.4	CB spring charge mechanism to have NO / NC contacts	Required	
1.21.5	LV compartment box to be provided, and shall not be more than 1.6 m high	Required	
1.22	Pendant Switch Details		
1.22.1	Installation / lead length	Mobile / 15m	
1.22.2	Connection type	Cannon type	
1.22.3	Controls	Open/Close	

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Table 3: Individual Panel Specific Technical Specification (Ring Feeder Panels)

2. Ring Feeder Panels			
Item	Item Description	Required Specification	Offered Specification (Bidder to Complete)
2.1	Type	Vacuum circuit breaker (with Disconnect and Earth Switch)	
2.2	Number of Panels	2 x Ring Feeder Panels (Panels 02 & 04)	
2.3	Panel current rating	630 A	
2.4	Internal insulation medium (ALL HV PARTS)	AIS or GIS (SF6 free if GIS, & alternative gas to be an environmentally friendly gas with 0 GWP and 0 GHG emissions)	
2.5	Internal insulation monitor	Required if GIS and linked to IED	
2.6	Breaker status indication	3 x LED's indicating breaker status as either "OPEN", "CLOSED" or "TRIPPED"	
2.7	Protection device Test Blocks	Required	
2.8	Metering device Test Blocks	Required	
2.9	Selector switches for operation mode	Local/Remote	
2.10	Panel heaters & switch	As per OEM Recommendation	
2.11	Circuit Breaker Details (SANS 62271-100)		
2.11.1	Circuit breaker insulating medium	Vacuum	
2.11.2	Mechanical endurance	M2 - 10000 operating cycles	
2.11.3	Electrical endurance	E2	
2.11.4	Rated capacitive breaking capacity	C2	
2.11.5	Circuit Breaker Class	S1	
2.11.6	Rated operating sequence	O - 0.3s - CO - 3min - CO	
2.11.7	Spare auxiliary contacts	4 x NO contacts and 4 x NC contacts	
2.11.8	Operating coils (4) Open coil (5) Close Coil (6) Trip Coil	Required, 120/60/48/24Vdc (separate from trip coil) Required, 120/60/48/24Vdc Required, 120/60/48/24Vdc	
2.12	Circuit Breaker (CB) Operation (Normal Close and Open)		
2.12.1	(1) CB Motor operation	Required	
2.12.2	(2) CB operated by push buttons	Required	
2.12.3	(3) CB operated by SCADA / REMOTE control	Required	
2.12.4	(4) CB operated by IED / Relay	Required	
2.12.5	(5) CB operated by mechanical / manual tool	Required	
2.12.6	(6) CB Operated by Pendant switch	Required, Cannon type, with 15m lead and open/close	
2.13	Switch Disconnecter Details (SANS 62271-102)		
2.13.1	Mechanical endurance (disconnecter)	M1	
2.13.2	Spare auxiliary contacts	2 x NO contacts and 2 x NC contacts	
2.13.3	Disconnecter Operation a) Motor Operation	Not Required	

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	b) Operated by Mechanical / Manual tool	Required	
2.14	Earth Switch Details (SANS 62271-102)		
2.14.1	Electrical endurance (earth switch)	E2	
2.14.2	Spare auxiliary contacts	2 x NO contacts and 2 x NC contacts	
2.14.3	Earth Switch Operation a) Motor Operation b) Operated by Mechanical / Manual tool	Not Required Required	
2.15	Cable and Cable Compartment Details		
2.15.1	Cable termination type	Dry, screened	
2.15.2	Bushing Type / rating	630 A	
2.15.3	Cable test facility	Front of panel, interlocked	
2.15.4	Cable live indication	Type VPIS with phasing	
2.15.5	Cable support	Non-magnetic and adjustable	
2.15.6	Cable support size	Suitable for XLPE/PILC 120mm ² to 240mm ² x 3-core	
2.15.7	Cable cover panel contacts	1 x NO contacts and 1 x NC contacts	
2.15.8	MV surge protection	Not required	
2.15.9	Earth Bar (pre-drilled)	Required	
2.16	Protection Device Details		
2.16.1	Protection Relay type	Intelligent Electronic Device (IED)	
2.16.2	Protection relay display	large display with single line diagram	
2.16.3	Communication protocol	Ethernet (Modbus TCP/IP) / IEC 61850	
2.16.4	Communication Connection Type	RJ45 (Cat 6)	
2.16.5	Standard	IEC	
2.16.6	Spare binary inputs and outputs	min. 3BI + 6BO (unused)	
2.16.7	Trip circuit supervision	required (main and back-up)	
2.16.8	Circuit Breaker condition monitoring	Not required	
2.16.9	Protection curve types	IEC / IDMT curves	
2.16.10	Protection Functions (1) Non direction OC	Required	
2.16.11	(2) Non directional EF	Required	
2.16.12	(3) directional OC	Required	
2.16.13	(4) directional EF	Required	
2.16.14	(5) Differential protection	Required	
2.16.15	(6) Restricted EF protection	Not required	
2.16.16	(7) TX Buchholz alarm and trip	Not required	
2.16.17	(8) TX Overtemperature alarm and trip	Not required	
2.16.18	(9) Arc flash protection	Required (wired to IED)	
2.16.19	(10) Auto Reclosing	Not required	
2.16.20	(11) Frequency based protection	Not required	
2.16.21	(12) Synchro-Check	Not required	
2.16.22	(13) External trip	Required	
2.16.23	Protection Relay measurement functions (5) Voltage (6) Current (7) Power	Required Required Not required Not required	

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	(8) Power Quality		
2.17	Metering Device/Power Meter Details		
2.17.1	Power meter type	PM5760	
2.17.2	Power meter measurements (5) Voltage (6) Current (7) Power (8) Power Quality	Required Required Required Required	
2.17.3	Communication protocol	Ethernet (Modbus TCP/IP)	
2.17.4	Communication Connection Type	RJ45 (Cat 6)	
2.18	Current / Voltage Transformers / Sensors Details		
2.18.1	Protection System CT's (3) CT 1 (4) CT 2	3 x 400-800/ 5A class 10P10 - ring type Not required	
2.18.2	Metering System CT's (3) CT 1 (4) CT 2	3 x 400-800/ 5A class 0,5 - ring type Not required	
2.18.3	Voltage Transformer (4) VT application (5) Measure Point (6) VT ratio	Required (Voltage Sensors) Cable Compartment Bushings Information by supplier	
2.19	Interlocks Details		
2.19.1	Opening Circuit Breaker (CB)	condition - circuit breaker spring charged	
2.19.2	Closing Circuit Breaker (CB)	condition - circuit breaker spring charged	
2.19.3	Opening Switch Disconnecter (SD)	condition - CB must be open, ES must be open, and cable cover on	
2.19.4	Closing Switch Disconnecter (SD)	condition - CB must be open, ES must be open, and cable cover on	
2.19.5	Closing Earth Switch (ES)	condition - SD must be open	
2.19.6	Closing Earth Switch (ES)	Incoming cable not live - Not required	
2.19.7	Opening Earth Switch (ES)	condition - none	
2.19.8	Cable cover	condition - ES must be closed	
2.20	Padlock Details		
2.20.1	Lock on earth switch	Required, branded ACSA, and coded/numbered with 2 set of keys	
2.20.2	Lock on operational push buttons	Required, branded ACSA, and coded/numbered with 2 set of keys	
2.20.3	Lock on cable cover	Not required	
2.20.4	Lock on circuit breaker	Required, branded ACSA, and coded/numbered with 2 set of keys	
2.20.5	Lock on switch disconnecter	Required, branded ACSA, and coded/numbered with 2 set of keys	
2.21	Special Requirements		
2.21.1	All relay spare inputs / outputs to be wired to	Required	

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	terminal blocks		
2.21.2	All NO / NC contacts for breaker, disconnector, earth switch and cable door to be wired to terminal blocks	Required	
2.21.3	All terminal blocks to be located in LV cubicle	Required	
2.21.4	CB spring charge mechanism to have NO / NC contacts	Required	
2.21.5	LV compartment box to be provided, and shall not be more than 1.6 m high	Required	
2.22	Pendant Switch/Umbilical Cord Details		
2.22.1	Installation / lead length	Mobile / 15m	
2.22.2	Connection type	Cannon type	
2.22.3	Controls	Open/Close	

Table 4: Individual Panel Specific Technical Specification (Bus Coupler / Bus Section Panel)

3. Bus Coupler / Bus Section Panel			
Item	Item Description	Required Specification	Offered Specification (Bidder to Complete)
3.1	Type	Vacuum circuit breaker (with Disconnector and Earth Switch)	
3.2	Number of Panels	1 x Bus Coupler Panel (Panel 03)	
3.3	Panel current rating	630 A	
3.4	Internal insulation medium (ALL HV PARTS)	AIS or GIS (SF6 free if GIS, & alternative gas to be an environmentally friendly gas with 0 GWP and 0 GHG emissions)	
3.5	Internal insulation monitor	Required if GIS and linked to IED	
3.6	Breaker status indication	3 x LED's indicating breaker status as either "OPEN", "CLOSED" or "TRIPPED"	
3.7	Protection device Test Blocks	Required	
3.8	Metering device Test Blocks	Required	
3.9	Selector switches for operation mode	Local/Remote	
3.10	Panel heaters & switch	As per OEM Recommendation	
3.11	Circuit Breaker Details (SANS 62271-100)		
3.11.1	Circuit breaker insulating medium	Vacuum	
3.11.2	Mechanical endurance	M2 - 10000 operating cycles	
3.11.3	Electrical endurance	E2	
3.11.4	Rated capacitive breaking capacity	C2	
3.11.5	Circuit Breaker Class	S1	
3.11.6	Rated operating sequence	O - 0.3s - CO - 3min - CO	
3.11.7	Spare auxiliary contacts	2 x NO contacts and 2 x NC contacts	
3.11.8	Operating coils (7) Open coil (8) Close Coil	Required, 120/60/48/24Vdc (separate from trip coil) Required, 120/60/48/24Vdc	

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	(9) Trip Coil	Required, 120/60/48/24Vdc	
3.12	Circuit Breaker (CB) Operation (Normal Close and Open)		
3.12.1	(1) CB Motor operation	Required	
3.12.2	(2) CB operated by push buttons	Required	
3.12.3	(3) CB operated by SCADA / REMOTE control	Required	
3.12.4	(4) CB operated by IED / Relay	Required	
3.12.5	(5) CB operated by mechanical / manual tool	Required	
3.12.6	(6) CB Operated by Pendant switch	Required, Cannon type, with 15m lead and open/close	
3.13	Switch Disconnecter Details (SANS 62271-102)		
3.13.1	Mechanical endurance (disconnecter)	M1	
3.13.2	Spare auxiliary contacts	2 x NO contacts and 2 x NC contacts	
3.13.3	Disconnecter Operation a) Motor Operation b) Operated by Mechanical / Manual tool	Not Required Required	
3.14	Earth Switch Details (SANS 62271-102)		
3.14.1	Electrical endurance (earth switch)	E2	
3.14.2	Spare auxiliary contacts	2 x NO contacts and 2 x NC contacts	
3.14.3	Earth Switch Operation a) Motor Operation b) Operated by Mechanical / Manual tool	Not Required Required	
3.15	Cable and Cable Compartment Details		
3.15.1	Cable termination type	Dry, screened	
3.15.2	Bushing Type / rating	630 A	
3.15.3	Cable test facility	Front of panel, interlocked	
3.15.4	Cable live indication	Type VPIS with phasing	
3.15.5	Cable support	Non-magnetic and adjustable	
3.15.6	Cable support size	Suitable for XLPE/PILC 120mm ² to 240mm ² x 3-core	
3.15.7	Cable cover panel contacts	1 x NO contacts and 1 x NC contacts	
3.15.8	MV surge protection	Not required	
3.15.9	Earth Bar (pre-drilled)	Required	
3.16	Protection Device Details		
3.16.1	Protection Relay type	Intelligent Electronic Device (IED)	
3.16.2	Protection relay display	large display with single line diagram	
3.16.3	Communication protocol	Ethernet (Modbus TCP/IP) / IEC 61850	
3.16.4	Communication Connection Type	RJ45 (Cat 6)	
3.16.5	Standard	IEC	
3.16.6	Spare binary inputs and outputs	min. 3BI + 6BO (unused)	
3.16.7	Trip circuit supervision	required (main and back-up)	
3.16.8	Circuit Breaker condition monitoring	Not required	
3.16.9	Protection curve types	IEC / IDMT curves	
3.16.10	Protection Functions (1) Non direction OC	Required	

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3.16.11	(2) Non directional EF	Required	
3.16.12	(3) directional OC	Required	
3.16.13	(4) directional EF	Required	
3.16.14	(5) Differential protection	Not required	
3.16.15	(6) Restricted EF protection	Not required	
3.16.16	(7) TX Buchholz alarm and trip	Not required	
3.16.17	(8) TX Overtemperature alarm and trip	Not required	
3.16.18	(9) Arc flash protection	Required (wired to IED)	
3.16.19	(10) Auto Reclosing	Not required	
3.16.20	(11) Frequency based protection	Not required	
3.16.21	(12) Synchro-Check	Not required	
3.16.22	(13) External trip	Required	
3.16.23	Protection Relay measurement functions (9) Voltage (10) Current (11) Power (12) Power Quality	Required Required Not required Not required	
3.17	Current / Voltage Transformers / Sensors Details		
3.17.1	Protection System CT's (5) CT 1 (6) CT 2	3 x 200-400/ 5A class 10P10 - ring type Not required	
3.17.2	Metering System CT's (5) CT 1 (6) CT 2	Not Required Not required	
3.17.3	Voltage Transformer (7) VT application (8) Measure Point (9) VT ratio	Not required Not Applicable Not Applicable	
3.18	Interlocks Details		
3.18.1	Opening Circuit Breaker (CB)	condition - circuit breaker spring charged	
3.18.2	Closing Circuit Breaker (CB)	condition - circuit breaker spring charged	
3.18.3	Opening Switch Disconnecter (SD)	condition - CB must be open, ES must be open, and cable cover on	
3.18.4	Closing Switch Disconnecter (SD)	condition - CB must be open, ES must be open, and cable cover on	
3.18.5	Closing Earth Switch (ES)	condition - SD must be open	
3.18.6	Closing Earth Switch (ES)	Incoming cable not live - Not required	
3.18.7	Opening Earth Switch (ES)	condition - none	
3.18.8	Cable cover	condition - ES must be closed	
3.19	Padlock Details		
3.19.1	Lock on earth switch	Required, branded ACSA, and coded/numbered with 2 set of keys	
3.19.2	Lock on operational push buttons	Required, branded ACSA, and coded/numbered with 2 set of keys	
3.19.3	Lock on cable cover	Not required	

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3.19.4	Lock on circuit breaker	Required, branded ACSA, and coded/numbered with 2 set of keys	
3.19.5	Lock on switch disconnecter	Required, branded ACSA, and coded/numbered with 2 set of keys	
3.20	Special Requirements		
3.20.1	All relay spare inputs / outputs to be wired to terminal blocks	Required	
3.20.2	All NO / NC contacts for breaker, disconnecter, earth switch and cable door to be wired to terminal blocks	Required	
3.20.3	All terminal blocks to be located in LV cubicle	Required	
3.20.4	CB spring charge mechanism to have NO / NC contacts	Required	
3.20.5	LV compartment box to be provided, and shall not be more than 1.6 m high	Required	
3.21	Pendant Switch/Umbilical Cord Details		
3.21.1	Installation / lead length	Mobile / 15m	
3.21.2	Connection type	Cannon type	
3.21.3	Controls	Open/Close	

Table 5: Individual Panel Specific Technical Specification (Battery Tripping Unit)

4. Battery Tripping Unit (BTU) Specification			
Item	Item Description	Required Specification	Offered Specification (Bidder to Complete)
4.1	Input Voltage	230 VAC, Single Phase	
4.2	Output Voltage	120/60/48/24 VDC	
4.3	Battery capacity	Suitable for all relays on panels specified and operation of motors for circuit breakers. BTU to be rated for at least ten (10) times circuit breaker motor operations without mains supply available. A/h rating to be provided by supplier	
4.4	Battery Voltage	2 or more 12 V batteries to be connected in series or series and parallel combination whichever is applicable to make up 24/60/120 VDC and the required battery capacity as per (4.3) above. Batteries to be contained in an explosion proof container.	
4.5	Battery Type/Technology	Valve Regulated Lead Acid (VRLA) or equivalent or as recommended by switchgear OEM.	
4.6	Battery Charger Type	Intelligent Battery Charger (Normal Charge, Boost/Fast Charge, Trickle/Float Charge)	
4.7	BTU Alarms	Required (Mains Fail, Battery Fail, Battery Low, Charger fail, Boost charge, etc.)	

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4.8	BTU Status Indication	Required (Mains Fail, Battery Fail, Battery Low, Charger fail, Boost charge, etc.)	
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Site Conditions

The SF6 free 5-Way motorized RMU shall be designed to function correctly in the Cape Town metropolitan coastal area conditions. The equipment shall be installed into an existing Terminal 1 substation thus, the RMU shall be rated for indoor use. The RMU shall operate in an enclosed substation together with various other equipment such as a generator and 2 x transformers. The substation is currently equipped with 2 x ceiling mounted air-conditioning split unit(s) to regulate the internal room temperature.

General

The offered switchgear must have the following features:

- Suitable for indoor installation at a coastal environment
- Compact construction
- High staff safety and sure control
- Maximum reliability
- Maintenance free (active part of the circuit breaker - Contacts)
- Possibility of Various cable connections
- SCADA compatible and motorized.
- The switchgear shall be extensible on both the left-hand side (LHS) and the right-hand side (RHS).
- Local and remote operations compatible

Service conditions:

The switchgear shall be compact, modular in construction and suitable for indoor applications without any further covers or enclosures. The switchgear shall be tested for weather proofing tests as per IEC standards. The switchgear chamber shall be protected against high humidity, high temperature etc.

Standards

The Terminal 1 SF6 free 5-Way motorized RMU shall be designed, manufactured, delivered, installed, and commissioned in accordance with the following IEC standards.

- IEC 62271-1: Specifications High-voltage switchgear
- IEC 62271-100: Alternating-current circuit-breakers.
- IEC 62271-102: Alternating current disconnectors earthing switches
- IEC 62271-103: High-voltage switches
- IEC 62271-105: Switch-fuse co-operation
- IEC 62271-200: Arc fault and switchgear
- IEC 60529: Degrees of protection provided by enclosures.

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NOTES TO BIDDER

1. It is mandatory for bidders to completely fill the specification tables above, below is the reference to the specific tables to be filled:
 - Table 2: Individual Panel Specific Technical Specification (Transformer Feeder Panels), on page numbers (32-35)
 - Table 3: Individual Panel Specific Technical Specification (Ring Feeder Panels), on page numbers (36-39)
 - Table 4: Individual Panel Specific Technical Specification (Bus Coupler / Bus Section Panel), on page numbers (39-42)
 - Table 5: Individual Panel Specific Technical Specification (Battery Tripping Unit), on page numbers (42-43)
2. Bidders shall at tender stage allow for a Factory Acceptance Testing (FAT) to be conducted at service provider's or OEM's workshop before switchgear can be delivery to site and arrange for such upon appointment.
3. Bidders shall at tender stage allow for a Site Acceptance Testing (SAT) to be conducted on-site upon delivery of the of the SF6 free 5-Way motorized RMU.
4. Bidders to provide brochures/catalogues/data sheets and or manuals for the proposed switchgear, intelligent electronic devices/ protection relays, power meters, voltage sensors, CTs, arc flash sensors, etc. as supporting attachments to the bid.

POSSIBLE BIDDER QUESTIONS AND ANSWERS

ID	Bidder Question	ACSA's Response
1	What switchgear type are you looking for? Is it air insulated switchgear (AIS), or gas insulated switchgear (GIS)?	We are looking for either a GIS or AIS switchgear as per the specification. Sf6 free if GIS. If the switchgear meets the specification, it will be considered.
2	What switchgear brand or manufacturer are you looking for? From the previous tenders advertised by ACSA Cape Town International Airport, the specification was asking for ABB for MV switchgear and Schneider for LV switchgear. why is this bid not asking for a specific make or Manufacturer's switchgear? Since asking for a specific brand can help with standardisation and the ease of competence to employees while dealing with the same.	We are not looking for a specific brand or manufacturer's switchgear, proposals and offers that meet the specification will be considered. This is a different tender/RFQ to any other tenders advertised in the past, we are not looking for a specific brand or manufacturer's switchgear. If the proposed switchgear meets the specification, it will be considered. Even if a brand was specified, we cannot disqualify or not consider a proposal that meets the specification and is cost effective since this is an open bid or tender. As a State-Owned Company (SOC), ACSA subscribes to the requirements specified under section 217 of the Constitution of the Republic of South Africa which requires procurement by organs of state and statutory institutions to be fair, equitable, transparent, competitive, and cost-effective.
3	How many people should we allow for during the factory acceptance testing (FAT)	Allow for at least three personnel from ACSA, however attendance will depend on the availability of colleagues to attend. The commissioner appointed by the service provider shall also be present during the FAT.
4	Since this tender is for RMUs and the relays are self-powered relays, you have also specified a BTU. Does the Buchholz and Overtemperature alarms and trips need to be wired to the relay?	Yes, the specification does require that the transformer feeder panels have Buchholz and Overtemperature alarms and trips wired to the IED/Protection relay.

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	Wiring Buchholz and Overtemperature trips will trip the transformer feeder, however if there is no relay monitoring the Buchholz and Overtemperature trips it will not be known why the transformer feeder tripped. Can we allow for the relay to monitor the Buchholz and overtemperature alarms and trips and send trip signals to the IED/protection relay?	Please do allow for the relay to monitor the Buchholz and Overtemperature alarms and trips and send the same to the IED/Protection relay.
5	Do we have to quote for dual supplied IEDs/Protection relays or only through the BTU as the primary and the only supply for the IED? Having a dual supplied IEDs/Protection relays allows for the relay to be functional even when one of the supply sources is not available, especially on a fault condition when the IED is required to isolate the fault.	Allow for IEDs/Protection relays to be dual supplied, (1) self-powered through CT's and (2) powered through the BTU as specified. It is worthy to note that the BTU specified shall also power motors for the circuit breakers (CB) operation (for charging the motors and open/close functions of the CB).
6	Who will be responsible for the protection settings for the affected ring network? And will the protection settings be made available for the affected ring network?	The commissioner (professional technician, technologist, or engineer in the electrical category) appointed by the service provider is responsible for all protection settings in the affected ring network and commissioning of the RMU. Yes, protection settings will be made available to the commissioner and the commissioner will take responsibility for revising settings on the affected ring network.
7	Can you kindly share with us the following for the above RFQ: 1. MV Single line diagram 2. The MV Switchgear kA rating (fault current)	1. The MV single line diagram (SLD) indicating the affected ring network will be shared on email only with bidders who attended the site briefing and listed their email addresses on the attendance register. SLD will also form part of the documents attached on the bid advert after the briefing session and site visit. 2. The (fault current) kA rating for the switchgear is 21 kA for one (1) second and or 20 kA for three (3) seconds as per the specification. A higher kA rating may be offered; however, this may disadvantage a bidder on pricing higher than bidders who priced for the required minimum specification of 21 kA and or 20 kA for 1 second and 3 seconds respectively.
8	Should we allow for lengthening of the existing MV ring feeder cables should there be insufficient slack.	No, do not allow for extending ring feeder cable. This item can be receipted on the contingency amount, should there be a need to. However, this can only be done upon approval by the responsible ACSA project manager.

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KEY PERSONNEL:

Refer Functionality for information as to how points will be awarded for Key Personnel.

As a minimum ACSA requires the following Key Personnel:

	Key Personnel	Required Qualification and or Accreditation	Required Experience
Part of functionality/technical evaluation criteria	1. Site Supervisor	N6/Technical/National Diploma in electrical engineering or higher.	Minimum of two (02) successfully completed projects for MV switchgear installations
	2. Electricians x 2	Red Seal/Trade Electrician	Minimum of two (02) successfully completed MV switchgear installations projects
	3. Installation electrician (IE) or master installation electrician (MIE)	Registration as an IE or MIE with the Department of labour (DOL)	Relevant electrical installations
Not Part of functionality/technical evaluation criteria (Note# it is not mandatory that this resource is provided at tender stage, however, the successful bidder at appointment stage shall make this resource available)	3. Commissioner	Professional registration with ECSA as either a professional technician or a professional technologist or a professional engineer in the electrical category. Minimum of five successfully completed projects for MV switchgear installations commissioning.	

SITE SUPERVISOR MINIMUM RESPONSIBILITIES

As a minimum the site supervisor must: -

- Supervise the work.
- Safety Management
- Quality Control
- Communication with ACSA Representative
- Report on progress of project weekly
- Ensure certificate of compliance (COC) is issued for the installation

PROJECT FILES, AS A MINIMUM, MUST INCLUDE THE FOLLOWING:

- DRAWINGS
- SCHEMATICS
- LAYOUTS
- GENERAL ARRANGEMENTS OF EQUIPMENT
- CERTIFICATION AND SIGN-OFF (e.g., Design, Commissioning etc)
- **NOTE#** 2 x hardcover project files, and soft copy for the consolidated project file.

SUPPLY, INSTALLATION, AND COMMISSIONING OF AN SF6 FREE 5-WAY MOTORIZED RING MAIN UNIT (RMU) FOR TERMINAL
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PERMIT COSTS (Training Courses and Permit Issuing costs)

1. Training Courses

<u>ONLINE COURSES</u>	<u>COURSE COST EACH</u> <u>Excluding VAT</u>
SAFETY- Airside Induction (AIT INTIAL)	R2 103,60
SAFETY- Airside Induction Refresher (AIT Refresher)	R960,00
SAFETY- Airside Vehicle Operators Permit (AVOP)	R2 103,60
SAFETY- Airside Vehicle Operators Permit Refresher (AVOP)	R960,00
Aerodrome Emergency Preparedness	R5 240,40
Safety Management System (SMS)	R5 000,00
General Security Awareness (GSAT)	R960,00

2. Permit Issuing Costs

Personal Permit R 470/per person per year

Vehicle Permit R 700 / per vehicle per year

ALLOW PERMIT COSTS FOR 2 YEARS

SUPPLY, INSTALLATION, AND COMMISSIONING OF AN SF6 FREE 5-WAY MOTORIZED RING MAIN UNIT (RMU) FOR TERMINAL 1 SUBSTATION AT CAPE TOWN INTERNATIONAL AIRPORT FOR THE PERIOD OF 12 MONTHS

PART 4: SITE INFORMATION

Document reference	Supply, installation, and commissioning of an SF6 free 5-Way motorized ring main unit (RMU) for Terminal 1 Substation at Cape Town International Airport	Page No.
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Part 4: Site Information

Core clause 11.2(16) states

“Site Information is information which:

- describes the Site and its surroundings and
- is in the documents which the Contract Data states it is in.”

In Contract Data, reference has been made to this Part 4 of the contract for the location of Site Information.

Description of the Site and its surroundings

General description

The general site is Cape Town International Airport (CTIA) managed by the Airports Company South Africa (ACSA).

Project Specific Site(s): Terminal 1 substation housing a generator, 2 x transformers and the generator board and the room is cooled by 2 x air-conditioning split units.

Existing buildings, structures, and plant & machinery on the Site

An existing 3-Way RMU switch in service and a 4-Way RMU not in service will be removed before installing the new 5-Way RMU, a generator, 2 x transformers and the generator board and the room is cooled by 2 x ceiling mounted air-conditioning split units.