

IRRIGATION AUTHORITY



BIDDING DOCUMENT FOR

Supply, Installation, Testing and Commissioning of Auto-transformer Control Panels

Procurement Reference No:

OMD/AUTOTRANSFORMERCONTROLPANELS/46/25

Irrigation Authority

5th Floor, Fon Sing Building
12 Edith Cavell Street
Port-Louis
Tel: 210 6596
Fax: 212 7652
Email: irrig@irrig.org

January 26

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Section 1: Section 1 - Instructions to Bidders

A. GENERAL

1. Introduction

The Irrigation Authority also referred as the Employer, invites eligible local contractors to submit their bid for the works described in detail hereunder. Any resulting contract shall be subject to the terms and conditions referred to in this document.

The Works consist mainly of the supply, installation, testing and commissioning of Auto-Transformer Control Panels at our Riviere du Rempart and Plaisance Pumping Station respectively.

Participation is limited to citizens of Mauritius or entities incorporated in Mauritius. Joint Ventures should be among entities incorporated in Mauritius.

1.1 Clarifications, if any, should be addressed to:

***The General Manager
5th Floor, Fon Sing Building
12 Edith Cavell Street,
Port Louis
Tel: +230 210 6596
Fax: +230 212 7652
Email : irrig@irrig.org***

1.2 The Employer will respond in writing to any request for clarification, provided that such request is received 14 days prior to the deadline for submission of bids. The Employer shall respond to such request at latest 7 days prior to the deadline set for submission of bids

1.3 Bidders are advised to carefully read the complete Bidding document, including the Particular Conditions of Contract in Section IV, before preparing their bids. The standard forms in this document may be retyped for completion but the Bidder is responsible for their accurate reproduction.

2. Validity of Bids

The bid validity period shall be **90 days** from the date of bid submission deadline.

3. Work Completion Period

The Intended Completion period is 150 calendar days from the start date of works.

4. Site Visit

Bidders or their designated representatives are invited to attend a pre-bid meeting/site visit scheduled for Friday 09 January 2025 at the Irrigation Authority Pumping Stations at Plaisance and Riviere du Rempart respectively. Site visits will be done at Plaisance Pumping station first followed by that at Riviere du Rempart.

The meeting point shall be on the Parking of King Savers Hyper Market at Beau-Vallon at **10.hr00**.
(Contact Number – 5776 7855)

The purpose of the pre-bid meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage by the Bidders.

5. Sealing and Marking of Bids

Bids should be sealed in a single envelope, clearly marked with the Procurement Reference Number, addressed to the Irrigation Authority with the Bidder's name at the back of the envelope.

6. Submission of Bids

Bids should be deposited in the Bid Box located at the Office of the Irrigation Authority, 5th Floor, Fon Sing Building, 12, Edith Cavell Street, Port Louis, Tel: +230- 2106596, Fax: +230- 212 7652 not later than **15hrs00 on Tuesday 03 March 2026**.

Bids by post or hand delivered should reach the above-mentioned address by the same date and time at latest. Late bids will be rejected. Bids received by e-mail will not be considered.

7. Bid Opening

Bids will be opened at the Office of the Irrigation Authority, 5th Floor, Fon Sing Building, 12, Edith Cavell Street, Port Louis on **on Tuesday 03 March 2026 at 15hr30**. Bidders or their representatives may attend the Bid Opening if they choose to do so.

8. Evaluation of Bids

The Irrigation Authority shall have the right to request for clarification during evaluation. Offers that are substantially responsive shall be compared on the basis of evaluated cost to determine the lowest evaluated bid.

9. Eligibility Criteria

To be eligible to participate in this bidding exercise, Bidder should:

- (a) have the legal capacity to enter into a contract to execute the works;
- (b) be duly registered with the CIA under the grades that would allow him to perform the value of works for which he is submitting his bid. (Note 1)

- (c) not be insolvent, in receivership, bankrupt, subject to legal proceedings for any of these circumstances or in the process of being wound up;
- (d) not have had your business activities suspended;
- (e) not be under a declaration of ineligibility by the Government of Mauritius in accordance with applicable laws at the date of the deadline for bid submission or appearing on the ineligibility lists of African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Inter-American Development Bank Group and World Bank Group;
- (f) not have a conflict of interest in relation to this procurement requirement; and
- (g) have a Business Registration Card.
- (h) For contract above Rs 1 Million, the enterprise should have an annual turnover of Construction, Mechanical or Electrical Works not less than 75% of the bid price in any one year of the last 3 years.
- (i) Where applicable, be duly registered with SME Mauritius under Micro or Small Enterprise.

Note 1 Sub-contractors undertaking works are also subject to registration with CIA as applicable to Contractors.

10. Qualification and Experience Criteria

Bidders should have the following minimum qualifications and experience:

- (a) valid registration certificates with the CIA under the grade that will enable the contractor to perform the works quoted for, under the following class(es): Civil Engineering Construction works or Building Construction works or Mechanical, Electrical and Plumbing Works (MEP Works).
- (b) experience in one work for the supply and installation of auto-transformer electrical control panel in a Pumping Station for the last 10 years, of value not less than **MUR 0.4 Million**;
- (c) Qualification and experience of Key personnel required for the Contract shall be:
 - (i) One Contract Manager (part time), holding at least a Degree in Electrical or Electromechanical Engineering or Building Services Engineering works from a recognised institution. He shall have at least 5 years experience in Electrical or Electromechanical engineering works or Building Services Engineering works and shall be registered with the Council of Registered Professional Engineer of Mauritius
 - (ii) Site agent (full-time) holding at least a Diploma in Electrical or Electromechanical engineering works or Building Services Engineering works from a recognized institution. He shall have at least 3 years experience in Electrical or Electromechanical engineering works or Building Services Engineering works.
 - (iii) One foreman having at least 3 years of experience in electrical installation works.
 - (iv) At least one qualified and experienced electrician having a minimum 3 years of experience related to installation of electrical control panel.

- (d) minimum amount of liquid assets and/or credit facilities net of other contractual commitments of the Bidder of **MUR 1.5 Million**.

11. Content of Bid

The Bid shall comprise the following:

- (a) duly filled Bid Submission Form;
- (b) duly filled Priced Bill of Quantities/Activity Schedule;
- (c) duly filled Qualification Information Form and attachments required
- (d) duly filled Key Financial Information Form along with certified copies of Financial Statements or Audited Accounts as filed at the Registrar of Companies before the deadline set for submission of bids
- (e) Valid Registration certificates with the CIA, as applicable
- (f) Signed C.V of Contract Manager;
- (g) Documentary evidence of liquid assets and/or credit facilities (Note 1);
- (h) Any other documents deemed necessary as per the requirements of this bidding document

Note 1

Bidders to demonstrate access to, or availability of, financial resources such as liquid assets, lines of credit, and other financial means, other than any contractual advance payments to meet the overall cash flow requirements for the contract and its current commitments. Documentary evidence may comprise but not limited to Bank certificate, Certificate from Auditors, Certificate from a Professional Accountant registered with MIPA, Certificate from Insurance companies.

12. Joint Venture

Bids submitted by a joint venture of two or more firms as partners shall comply with the following requirements:

- i. the Bid shall include all the information required as per the Qualification Information form for each joint venture partner;
- ii. the Bid shall be signed so as to be legally binding on all partners;
- iii. the Bid shall include a copy of the agreement entered into by the joint venture partners defining the division of assignments to each partner and establishing that all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms; **alternatively**, a Letter of Intent to execute a joint venture agreement in the event of a successful bid shall be signed by all partners and submitted with the bid, together with a copy of the proposed agreement;

- iv. one of the partners shall be nominated as being in charge, authorized to incur liabilities, and receive instructions for and on behalf of any and all partners of the joint venture; and
- v. the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.

13. Prices and Currency of Payment

Bidders should quote for the whole works. Prices for the execution of works shall be quoted and fixed in Mauritian Rupees. Items for which no rate or price is entered by Bidders, shall not be paid for by the Irrigation Authority when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities.

Bids shall cover all costs of labour, materials, equipment, overheads, profits and all associated costs for performing the works, and shall include all duties. The whole cost of performing the works shall be included in the items stated, and the cost of any incidental works shall be deemed to be included in the prices quoted.

Bidders are required to submit their bid prices **exclusive of VAT**.

14. Bid Securing Declaration

Bidders are required to subscribe to a Bid Securing Declaration in the Bid Submission Form.

15. Margin of Preference

Not applicable

15 A. Evaluation of Bids

If the lowest evaluated bid is seriously unbalanced or front loaded or if any item in the Bill of Quantities or Price Activity Schedule is front loaded or contains an erroneous amount in the opinion of the *Employer*, the *Employer* may require the Bidder to produce detailed price analysis for any or all items of the bid *to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After analysis of the prices the Employer may reject the bid or require that the amount of the performance security be increased at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.*

16. Award of Contract

The Employer shall award the Contract to the lowest evaluated substantially responsive bidder.

The contract may be awarded at a negotiated price following negotiation in the following circumstances:

- (i) there is a tie in the lowest evaluated price by 2 or more bidders;
- (ii) the lowest evaluated price substantially exceeds the estimated cost.

Invitation for negotiation, where the lowest evaluated price substantially exceeds of the estimated cost, shall be limited to bidders whose evaluated prices are not more that 25% above the estimated cost.

Where there is a tie in the lowest evaluated price by 2 or more bidders, on completion of negotiations, the bidders shall be invited to submit their best and final offer.

Prior to award, the selected bidder will be required to submit a Certificate of Credit Worthiness from the Mauritius Credit Information Bureau (MCIB) in case the bid amount exceeds Rs 10 Million.

Award of contract shall be by issue of a Letter of Acceptance in accordance with terms and conditions contained in Section IV: General Conditions of Contract and Particular Conditions of Contract.

17. Performance Security and signing of contract

Within twenty-eight (28) days of the receipt of the Letter of Acceptance from the Employer, the successful Bidder shall furnish a Performance Security, in the amount equal to 10% of the Bid price (exclusive of VAT), in accordance with the conditions of contract, using for that purpose the Performance Security Form included in Section V Contract Forms.

The Contract Agreement shall be signed within 28 days after the successful bidder receives the Letter of Acceptance unless the parties agree otherwise.

Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the contract within the required time may constitute sufficient grounds for the annulment of the award.

18. Notification of Award and Debriefing

Prior to the expiration of the period of bid validity, the Employer shall, for contract amount above Rs 15 million, notify the selected bidder of the proposed award and accordingly notify unsuccessful bidders. Subject to Challenge and Appeal, the Employer shall notify the selected Bidder, in writing, by a Letter of Acceptance for award of contract. Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.

The Irrigation Authority shall after award of contract, exceeding Rs 1 million and up to Rs 15 million, promptly inform all unsuccessful bidders in writing of the name and address of the successful bidder and the contract amount.

Furthermore, the Irrigation Authority shall attend to all requests for debriefing for contract exceeding Rs 1 million, made in writing within 30 days the unsuccessful bidders are informed of the award.

19. Advance Payment

The Irrigation Authority shall provide an Advance Payment on the Contract Price as stipulated in the General Conditions of Contract. The Advance Payment shall be guaranteed by an Advance Payment Security as per the format contained in Section V.

The Advance Payment shall be limited to **10%** percent of the Contract Price, less any provisional and contingencies sums.

20. Integrity Clause

The Irrigation Authority commits itself to take all measures necessary to prevent corruption and ensures that none of its staff, personally or through his/her close relatives or through a third party, will in connection with the bid for, or the execution of a contract, demand, take a promise for or accept, for him/herself or third person, any material or immaterial benefit which he/she is not legally entitled to.

21. Rights of Public Body

The Irrigation Authority reserves the right to accept or reject any bid or to cancel the bidding process and reject all bids at any time prior to contract award without incurring any liability to the Irrigation Authority.

22. Challenge and Appeal

Unsatisfied bidders shall follow procedures prescribed in Regulations 48, 49 and 50 of the Public Procurement Regulations 2008 to challenge procurement proceedings and award of procurement contracts or to file application for review at the Independent Review Panel.

(a) The address, Tel. & Fax No. & Email address to file Challenges in respect of this procurement is:

**The General Manager
5th Floor, Fon Sing Building
12 Edith Cavell Street,
Port Louis
Tel: +230 2106596
Fax: +230 212 7652
Email : irrig@irrig.org**

(b) The address to file Application for Review is:

**The Chairperson
Independent Review Panel,
5th Floor,
Belmont House**

Intendence Street
Port Louis
Tel : +230 2602228
Email: irp@govmu.org

Section 2: Section 2 - Bidding Forms

Note: Bidders are required to fill all the forms in this section and submit as part of their bid. Non-submission of any form may lead to rejection of the bid

Bid Submission Form

Date: _____

Bid's Reference No.: _____

Procurement Reference No.:.....

To: The Officer-In-Charge (Projects)
Irrigation Authority
5th, Floor, Fon Sing Building
12, Edith Cavell Street
Port Louis

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued;
- (b) We offer to execute in conformity with the Bidding Documents the following Works:
_____;
- (c) The total price of our Bid excluding VAT is: _____(MUR):
- (d) Our bid shall be valid for a period of 90 days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (e) We hereby confirm that we have read and understood the content of the Bid Securing Declaration attached hereto and subscribe fully to the terms and conditions contained therein, if required. We understand that non-compliance to the conditions mentioned may lead to disqualification.
- (f) If our bid is accepted, we commit to obtain a Performance Security in accordance with the Bidding Document;
- (g) We, including any subcontractors or suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB 8;
- (h) We are not participating, as a Bidder in more than one bid in this bidding process;
- (i) Our firm, its affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the contract, has not been declared ineligible under the laws of Mauritius;

- (j) We have taken steps to ensure that no person acting for us or on our behalf will engage in any type of fraud and corruption as per the principles described hereunder, during the bidding process and contract execution:
- i. We shall not, directly or through any other person or firm, offer, promise or give to any of the Public Body's employees involved in the bidding process or the execution of the contract or to any third person any material or immaterial benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
 - ii. We shall not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelisation in the bidding process.
 - iii. We shall not use falsified documents, erroneous data or deliberately not disclose requested facts to obtain a benefit in a procurement proceeding.

We understand that transgression of the above is a serious offence and appropriate actions will be taken against such bidders.

- (k) We understand that this bid, together with your written acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- (l) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive; and
- (m) If awarded the contract, the person named below shall act as Contractor's Representative:

Name:

.....

In the capacity of:

.....

Signed:

.....

Duly authorized to sign
the Bid for and on
behalf of:

.....

Date:

.....

Seal of Company

.....

Bid Securing Declaration

By subscribing to the undertaking in the Bid Submission Form:

I/We* accept that I/we* may be disqualified from bidding for any contract with any public body for the period of time that may be determined by the Procurement Policy Office under section 35 of the Public Procurement Act, if I am/we are* in breach of any obligation under the bid conditions, because I/we*:

- (a) have modified or withdrawn my/our* Bid after the deadline for submission of bids during the period of bid validity specified by the Bidder in the Letter of Bid; or
- (b) have refused to accept a correction of an error appearing on the face of the Bid; or
- (c) having been notified of the acceptance of our Bid during the period of bid validity, (i) have failed or refused to execute the Contract, if required, or (ii) have failed or refused to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/We* understand this Bid Securing Declaration shall cease to be valid

- (a) in case I/we am/are the successful bidder, upon our receipt of copies of the contract signed by you and the Performance Security issued to you by me/us; or
- (b) if I am/we are* not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our* Bid.

In case of a Joint Venture, all the partners of the Joint Venture shall be jointly and severally liable.

Qualification Information

[The information to be filled in by bidders in the following pages shall be used for purposes of post-qualification or for verification of prequalification as provided for in ITB Clause 6. This information shall not be incorporated in the Contract. Attach additional pages as necessary. Pertinent sections of attached documents should be translated into English. If used for prequalification verification, the Bidder should fill in updated information only.]

Individual Bidders or Individual Members of Joint Ventures

1.1 Constitution or legal status of Bidder: *[attach copy]*

Place of registration: *[insert]*

Principal place of business: *[insert]*

1.2 Bidder shall provide *[insert number]* of works of a nature and amount similar to the Works performed as Contractor over the last 5 years.

Project/Contract name and country	Name of client and contact person	Type of work performed and year of completion	Value of contract (national currency)
(a)			
(b)			

1.3 Proposed subcontracts and firms involved. Refer to General Conditions of Contract Clause 7.

Sections of the Works	Value of subcontract	Subcontractor (name and address)	Experience in similar work
(a)			
(b)			

[Bidders have to ascertain that sub-contractors executing works are duly registered with the CIA in accordance with CIDB Act 2008.]

- 1.4 Name, address, and telephone, telex, and facsimile numbers of banks that may provide references if contacted by the Public Body.

2. Additional Requirements

- 2.1 Bidders should provide any additional information Requirements requested in the Bidding Document.

Financial Resources

Form FIN 3.3

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as indicated in Section III (Evaluation and Qualification Criteria).

Source of financing	Amount (MUR equivalent)
1.	
2.	
3.	
4.	

BID CHECKLIST**Procurement Reference No: OMD/AUTOTRANSFORMERCONTROLPANELS/46/25**

S.N	Description	Attached (please tick if submitted)
1	Bid Submission form	
2	Priced Bill of quantities	
3	Specifications and Compliance sheet	
4	Bid Securing declaration	
5	Qualification Information	
6	Key Financial Information Form	
7	Financial Resources	
8	Programme of Works and weekly input of labour, plant and resources	
9	Origin of goods	
10	Proposed Methodology for effecting the works	

Bill of Quantities¹

Abbreviations:

B/F	:	brought forward
C/F	:	carried forward
Galv.	:	galvanised
c/w	:	complete with
prov.	:	provisional
PCV	:	pressure control valve
PRV	:	pressure relief valve
NRV	:	non-return valve
IA	:	Irrigation Authority
DN	:	Nominal Diameter
PN	:	Nominal Pressure
m	:	metre
mm	:	millimetre
Kg	:	kilogram
F/PE	:	flanged and plain end
D/F	:	double flanged
G. S	:	galvanised steel
E/O	:	Extra over

¹ In lump sum contracts, the "Bill of Quantities" is prepared for information; it is not contractual. The contractual document prepared by the Bidder shall be a "Schedule of Activities."

Preamble

1. General

- 1.1 The Conditions of Contract together with the Specifications and Drawings are to be read in conjunction with the Bill of Quantities and in so far as they have any bearing must be referred to for details of the description, quality, test and strength of materials to be used and the workmanship, conditions, obligations, liabilities and instructions generally which have to be complied with in carrying out the Contract.

The cost of complying with all the conditions, obligations and liabilities described in the Conditions of Contract and Specifications and carrying out the work as shown on the Drawings will be deemed to be spread over and included in the prices stated in the Bill of Quantities unless expressly the subject of a specific item.

- 1.2 Each item shall be priced and extended to the "Amount" column by the Contractor with the exception of the items for which a rate only is required or which already have Provisional Sums affixed thereto. Unless otherwise stated, all items shall be fully inclusive of all that is necessary to fulfil the liabilities, obligations and risks either expressly stated or implied arising out of the Contract and shall be deemed to include all of the following:

- i. Labour and all associated costs.
- ii. Materials, goods, plant and all associated costs.
- iii. Contractor's Equipment.
- iv. Temporary Works.
- v. Superintendence of the Works.
- vi. Establishment charges, overheads and profit.

If any item in the Bill of Quantities is not priced, the cost of the work for such item shall be deemed to be spread over and included in the rates and prices for other items of work. The Bill of Quantities has been divided into sections for convenience of measurement and pricing.

- 1.3 The rates and prices inserted by the Contractor are to be the full and inclusive value of the work described. They must include all plant, tools, materials, transport of men and materials, insurance and labour of every description. They must also take into account the conditions referred to in the General Conditions of Contract and other documents on which the tender is based, and include the time lost due to weather, payment of guaranteed minimum and holidays with pay. The cost of any travelling time, subsistence and incentives such as overtime, etc. must be included in the rates and prices. Where any special risks, liabilities and obligations mentioned above or otherwise, cannot be dealt with in the rates, then the price thereof is to be separately stated in an item or items provided for the purpose or added by the Contractor.
- 1.4 The cost of all temporary works required for the construction of the Works shall be deemed to be included in the Contractor's rates and prices listed in the BOQ. Other than the items

provided in the BOQ, no additional payment or any claims for the cost of temporary works shall be allowed.

- 1.5 The rates and prices in the Bill of Quantities shall be deemed to include all obligations for the location, procurement and maintenance of adequate water and power supplies and shall be deemed to include for all costs in association therewith, unless expressly the subject of specific items.
- 1.6 The quantities of work and material in the Bill of Quantities are not to be considered as limiting or extending the amount of work to be done and material to be supplied by the Contractor. The quantities of the Bill of Quantities are an estimate of the amount of work, but the work will be measured on completion and the Contractor will be paid on the actual measurement of work agreed by the Engineer.
- 1.7 Descriptions given are brief references only and the Contractor is referred to the respective Clauses of the Conditions of Contract and the Specifications and to the Drawings for the full descriptions and instructions. The Clauses of the Conditions of Contract and of the Specifications will be equally binding as if they had been fully repeated in the Bill of Quantities and the Contractor must allow for this in his prices. Furthermore, the Clause numbers quoted herein are for reference only and are not guaranteed as comprising the whole of the relevant descriptions or instructions.
- 1.8 Where alternatives are proposed for materials, plant or methods of construction, the original items scheduled in the Bill of Quantities shall be priced as described and the alternatives shall be priced separately.
- 1.9 Where Specifications clauses or drawings are expressly stated in item descriptions, these items shall be deemed to include for all relevant items referred to in such clauses or on such drawings as well as all other relevant items specified in or reasonably implied in the Contract.
- 1.10 "Ditto" shall mean the whole of the preceding description except as qualified in the description in which it occurs. Where it occurs in descriptions of succeeding items it shall mean the same as in the first description of the series in which it occurs except as qualified in the description concerned. Where it occurs in brackets it shall mean the whole of the preceding description which is contained within the appropriate brackets.
- 1.11 The units of measurement described in the Bill of Quantities are metric units.
- 1.12 All rates and sums of money quoted in the Bill of Quantities shall be in Mauritian Rupees.
- 1.13 Arithmetic errors (if any) will be corrected by the Bid Evaluation Committee and such corrections shall be final and binding. Where a discrepancy exists between the unit rates in the "Rate" column and the extended total price in the "Amount" column, the unit rate shall be taken as correct and the amount adjusted accordingly.
- 1.14 The Contractor shall be deemed to have visited the Site before preparing his Tender and to have examined for himself the conditions under which the work will proceed and all other matters affecting the carrying out of the Works and the costs thereof.

- 1.15 "Instructed", "directed" or "approved" shall mean the instruction, direction or approval of the Engineer in writing.
- 1.16 The Contractor shall not be automatically entitled to receive payment for any item for work that has not been carried out or on any items that are not used. Payment will be made only on the basis of re-measurement of work actually done.
- 1.17 The rate for the construction of temporary access roads through and around the site shall include for all costs incurred by the Contractor for providing and maintaining such access and for reinstatement of the area to its original condition.

2. Dayworks

- 2.1 The rates and the valuation of works ordered by the Engineer to be executed on a daywork basis shall be made in accordance with the following: -

Plant

- 2.2 Rates shall be inserted against all items of plant listed and the amount extended to the 'Amount' column.
- 2.3 Plant Daywork hire rates shall include all operating and maintenance costs including fuel, oil, grease, spare parts, repairs, insurance and all other costs whatsoever together with operators, superintendence, any extra costs of overtime, overhead charges, P&G and profit. The rates shall also include for travelling time and costs for the plant operators, etc., to and from and about the site.
- 2.4 Idle time where due solely to the nature of dayworks or authorised methods of procedure will be paid for at one half of the rates entered herein.
- 2.5 Hire rates shall be paid only for the time during which the plant is actually working on daywork as authorised by the Engineer. Plant hire rates shall not be paid for periods of breakdown, inefficiency or unsuitability of the plant.

Labour

- 2.6 Rates shall be inserted against all categories of labour listed and the amount extended to the 'Amount' column.
- 2.7 The Labour Daywork rates shall include the net hourly rate paid to the worker plus special allowances to such labour in respect of subsistence, bonuses, overtime, feeding, housing, gratuity, holidays, transport to or from the Site or any cost of overhead charges in respect of recruitment, camp administration, welfare, medical treatment, supervision, insurances, profit and any other costs or allowances.
- 2.8 The cost of supervisors, foremen and working gangers employed in a supervisory capacity only shall be included in the daywork rates and shall not be paid for separately. The rates shall cover for the supply, transport about the Site, use, maintenance and renewal of all hand tools and equipment available on site and used on Dayworks, such as wheelbarrows, spades, picks,

crowbars, hammers, ropes, chains, hooks, blocks, pulleys, scaffolding, timber putlogs, running planks, ladders, hand operated jacks, handpumps, lamps, timber runways or platforms, tarpaulins and all other like hand tools and general equipment not specifically referred to under the listed plant hire for Dayworks.

- 2.9 Where the Engineer orders work to be carried out on a Daywork basis outside the Site, necessary travelling time between site and such places of work shall be allowed as hours worked.
- 2.10 The cost of plant operators is included in the daywork plant hire rates and are not paid separately under labour dayworks.
- 2.11 The total amount from the extension of all labour items is a Provisional Sum.

Materials

- 2.12 Rates shall be inserted against all items for materials listed and the amount extended to the 'Amount' column.
- 2.13 The rates inserted are to include all loading, transport, unloading, storage, double handling, insurance, superintendence, overheads and profit.
- 2.14 The materials shall in all instances conform to the qualities and descriptions stated in the Specifications.

3. Provisional Sums

- 3.1 No item for which a Provisional Sum is inserted shall be purchased by the Contractor until the Project Manager has given written instructions to this effect and it shall be the duty of the Contractor to make an application to the Project Manager sufficiently in advance of the progress of the work for instructions with regard to each such items. The Contractor shall obtain competitive quotations and samples if required and shall submit these to the Project Manager for approval.
- 3.2 The Contractor shall produce to the Project Manager the receipted accounts for all articles purchased under Provisional. No payment to the Contractor shall be made in respect of the items until the said receipts have been presented to the Project Manager.
- 3.3 The Contractor shall enter the percentage mark up of corresponding items described as Provisional Sum.
- 3.4 Provisional sums inserted in the Bill of Quantities in respect of materials to be specially imported for the Contract by the Contractor shall be deemed to include insurance, freight, dock and all other charges. In the case of imported materials obtained through a manufacturer's agent in Mauritius the sum shall be deemed to include the agent's fees and charges.
- 3.5 The Bill of Quantities include items in respect of the Provisional Sums for materials and sub-contracts given in the form of a percentage of the sums to be expended to cover the

Contractor's profit and overheads, including but not limited to the costs of obtaining quotations for, and the placing of orders or awarding sub-contracts, and all expenses in connection with administering such orders or sub-contract and financing cost for payment of these sums until recovery from Interim Certificates.

- 3.6 Items described as Provisional Sum or Prov. Sum or Provisional in the column of Description or Unit of the Bill of Quantities shall be subject for approval from the Project Manager prior of executing the items of work. Such items may be used in whole or in part, or not at all as instructed by the Project Manager

4. Method Related Charges

- 4.1 In order that the Contractor may cover his costs in executing the whole of the Works in conformity with the contract documents, where those costs are not properly attributable to the quantity of permanent works to be executed, he may cover such costs in the Bills of Quantities as method related charges.

A Bidder may insert in the Bills of Quantities and in the space provided, such items for Method Related Charges as he may decide to cover items of work relating to his intended method of executing the works, the costs of which are not to be considered as proportional to the quantities, rates and prices for the other items.

Each item for a Method Related Charge inserted by the Tenderer shall be fully described so as to define precisely the extent of work covered and to identify the constructional resources (plant, equipment etc.) to be used and the particular items of permanent or temporary works to which the items relate.

Bill No. 1: General and Preliminary

Item No.	Description	Unit of Measure	Quantity	Rate (MUR)	Total Price (MUR)
1.1	<i>Method Related Charges</i> Mobilisation and demobilisation of plant and equipment for the whole duration of the work on site.	Sum	1		
1.2	Insurance.	Sum	1		
1.3	Guarantees.	Sum	1		
1.4	Supply of Operation and Maintenance manual.	Sum	1		
1.5	On-site training on operation and maintenance of Auto-transformer control panels to the Engineers, Divisional Irrigation Officer, Irrigation Officers and all the technical workers prior to commissioning.	Sum	1		
	Sub Total to be transferred to Bill No. 1 of Summary of Price				

Bill No. 2: Auto-Transformer Control Panel at Riviere du Rempart Pumping Station

Item No.	Description	Unit of Measure	Quantity	Rate (MUR)	Total Price (MUR)
2.0	<u>AUTO-TRANSFORMER CONTROL PANEL AT RIVIERE DU REMPART PUMPING STATION</u>				
2.1	Dismantle and remove the old existing electrical control panel and accessories from the pumping station and transport same to IA's store yard at Plaines de Papayes. (Include for the electrical disconnection of each pumpset to the existing control panel and reconnection to the new electrical control panel)	Sum	1		
2.2	Supply, install and test a set of new control panels consisting of 3 Nos individual auto-transformer control panels of ratings appropriate to operate 3 different pumpset of ratings 200kW, 160kW and 75kW independently complete with associated electrical wiring works, RCD, circuit breakers, contactors, thermal overload relay, capacitor bank, control relays, surge/lightning arrestors, switches etc... as morefully specified. Bidder to mention the capacity of the auto-transformer panel proposed (Include for all the liaison with CEB for disconnection and reconnection of power during installation)	Sum	1		
2.3	Supply, install and test one main isolator switch of appropriate capacity in replacement to the existing old one.	No.	1		
2.4	Check, carry-out electrical test and report on the working conditions of the existing electrical earthing protection system, cables and accessories.	Sum	1		
2.5	Provide for suitable labelling of all the components inside the control panel.	Sum	1		
2.6	Supply, install and test new electrical earthing protection system and bonding cables complete with accessories.	Prov sum	1	100,000	
	Total C/F				

Item No.	Description	Unit of Measure	Quantity	Rate (MUR)	Total Price (MUR)
	Total B/F				
2.7	Supply and delivery of manufacturer's recommended spare parts for 2 years operation for all the control panels as detailed below:				
	1. A full set of cartridges for the surge arresters installed in the panel - (2 Nos. per panel).	No.	6		
	2. A full set of fuses for each set of fuse holder - (2 Nos. per panel).	No.	6		
	3. Fuse holders - (2 Nos. per panel).	No.	6		
	4. 'On delay start' electronic timer - (1 No. per panel).	No.	3		
	5. Auxiliary relay (KA#) - (1 No. per panel).	No.	3		
	6. 'On Delay' pneumatic add-on block (for auxiliary relay) - (1 No. per panel).	No.	3		
	7. Power contactor coil (for KM#)- (2 Nos. per panel).	No.	6		
	8. Over/Under Voltage Monitoring Relay - (1 No. per panel).	No.	3		
	9. Pressure switches for dry running protection - (1 No. per panel).	No.	3		
	Sub Total to be transferred to Bill No. 2 of Summary of Price				

Bill No. 3: Auto-Transformer Control Panel at Plaisance Pumping Station

Item No.	Description	Unit of Measure	Quantity	Rate (MUR)	Total Price (MUR)
3.0	<u>AUTO-TRANSFORMER CONTROL PANEL AT PLAISANCE PUMPING STATION</u>				
3.1	Dismantle and remove the old existing electrical control panel and accessories from pumping station and transport same to IA's store yard at Plaines de Papayes. (Include for the electrical disconnection of each pumpset to the existing control panel and re-connection to the new electrical control panel)	Sum	1		
3.2	Supply, install and test an auto-transformer control panel of rating appropriate to operate 2 Nos. different pumpset of rating 180kW and 160kW independently, complete with associated electrical wiring works, RCD, circuit breakers, contactors, thermal overload relay, capacitor bank, control relays, surge/lightning arrestors, switches etc... as morefully specified. Bidder to mention the capacity of the auto-transformer panel proposed (Include for all the liaison with CEB for disconnection and reconnection of power during installation)	Sum	1		
3.3	Supply, install and test one main isolator switch of appropriate capacity.	No.	1		
3.4	Check, carry-out electrical test and report on the working conditions of the existing electrical earthing protection system, cables and accessories.	Sum	1		
3.5	Provide for suitable labelling of all the components inside the control panel.	Sum	1		
3.6	Supply, install and test new electrical earthing protection system and bonding cables complete with accessories.	Prov sum	1	50,000	
	Total C/F				

Item No.	Description	Unit of Measure	Quantity	Rate (MUR)	Total Price (MUR)
	Total B/F				
3.7	Supply and delivery of manufacturer's recommended spare parts for 2 years operation for the control panel as detailed below:				
	1. A full set of cartridges for the surge arresters installed in the panel	No.	21		
	2. A full set of fuses for each set of fuse holder.	No.	2		
	3. Fuse holders	No.	2		
	4. 'On delay start' electronic timer	No.	1		
	5. Auxiliary relay (KA#)	No.	1		
	6. 'On Delay' pneumatic add-on block (for auxiliary relay)	No.	1		
	7. Power contactor coil (for KM#)	No.	2		
	8. Over/Under Voltage Monitoring Relay	No.	1		
	9. Pressure switches for dry running protection	No.	1		
	Sub Total to be transferred to Bill No. 3 of Summary of Price				

Supply, Installation, Testing and Commissioning of Auto-transformer Control Panels

**PROCUREMENT REFERENCE NO:
OMD/AUTOTRANSFORMERCONTROLPANELS/46/25**

SUMMARY OF PRICE

BILL No.	DESCRIPTION	AMOUNT (MUR)
1	GENERAL AND PRELIMINARY	
2	AUTO-TRANSFORMER CONTROL PANEL AT RIVIERE DU REMPART PUMPING STATION	
3	AUTO-TRANSFORMER CONTROL PANEL AT PLAISANCE PUMPING STATION	
SUB- TOTAL		
ADD 15% VAT		
ADD CONTINGENCY		200,000.00
GRAND TOTAL, MUR (INCLUDING VAT AND CONTINGENCY)		

Priced Activity Schedule Authorised By:

NAME:

POSITION:

SIGNATURE:

DATE:

NAME OF COMPANY:

ADDRESS OF COMPANY:

.....

COMPANY SEAL:

Section 3: Section 3 - Employer's Requirements

A. SCOPE OF WORKS, SPECIFICATIONS AND PERFORMANCE REQUIREMENTS

3.1 General description

3.1.1 Riviere du Rempart Small Scale Irrigation Project

The Riviere du Rempart Small Scale Irrigation Project (SSIP) was implemented to cater for irrigation facilities for small planters. The project is located in the North of Mauritius along the right-hand side of the road B15 of Haute Rive going towards Riviere du Rempart.

The Riviere du Rempart SSIP constitutes a total area of about 65 ha of private land belonging to 158 planters. The actual method of irrigation used is the low pressure semi-solid set sprinkler system whereby the planters have to shift only the sprinkler stand. The distribution laterals are laid in the fields of planters at regular intervals and are connected to the hydrant unit. The project is in operation since 1995 and is irrigated with river water which is pumped by three Centrifugal pumps, housed inside the Pumping Station located on one bank of the river at Haute Rive, Riviere du Rempart.

The three pumps are of the horizontal type and the make and duty points are as stated below:

- (i) Pump No.1 - Make: SEP, Duty Point: 399 m³/hr @ 94m head, 160 kW - (installed in 2024)
- (ii) Pump No.2 - Make: SEP, Duty Point: 201 m³/hr @ 91m head, 75 kW - (installed in 2024)
- (iii) Pump No.3 - Make: Armstrong, Duty Point : 419 m³/hr @ 116m head, 200 kW (installed in 2016)

3.1.2 Plaisance Small Scale Irrigation Project

The Plaisance (N) SSIP was implemented in the year 1982 and is situated on state lands found in the north of Plaisance Airport. The project area is 65 ha whereby irrigation facility is being provided to some 130 planters over an area of 56.5 ha and the rest is being occupied by FAREI (1.3ha) and MOAIFS (7.2ha).

The 130 planters are regrouped under the Plaisance (N) Water Users Multipurpose Cooperative Society, which is responsible for the day to day running of the project.

The project is served with irrigation via two electric pumpset, operating on a duty and standby mode, installed in a pumping station located on the bank of River La Chaux.

The irrigation system is a low pressure sprinkler and three hours of irrigation are being provided to the beneficiaries on a daily basis from Monday to Saturday.

The two pumpset are of the vertical type and the make and duty points are as stated below:

- (i) Pump No.1 - Make: Kirloskar, Duty Point: 324 m³/hr @ 112m head, 180 kW - (installed in 2014)
- (ii) Pump No.2 - Make: Kirloskar, Duty Point: 324 m³/hr @ 107 head, 160 kW - (installed in 2005)

3.2 Scope of Works

The works under this procurement exercise shall consist of, inter alia:

- (i) Disconnection of the electrical cables from main and dismantling of the existing old electrical Control Panels at the Riviere du Rempart and Plaisance pumping stations respectively complete with all the unserviceable electrical components, electrical cables, main isolator switch and accessories, and deliver same to our store yard at Plaine des Papayes.
- (ii) Disconnect the existing soft starter to pumpset No. 3 at Riviere du Rempart pumping station from the existing control panel, and provide for new electrical connection to the new auto-transformer control panel. (the existing soft starter to be kept in place and to be used as a secondary starter back-up in case of any electrical fault with the auto-transformer control panel)
- (iii) Supply, install, test and commissioning of a new set of control panel consisting of appropriately sized electrical auto-transformer control panels to operate the individual electric pumpset of ratings 200 kW, 160 kW and 75 kW independently at Riviere du Rempart Pumping Station, complete with electrical cables, selected circuit breakers, contactors, thermal overload protective relays, capacitor banks, control relays, surge/lightning arrestors and switches which will be capable to operate the pumpset efficiently and effectively, with full protection against voltage surges and dry running.
- (iv) Supply, install, test and commissioning of a new appropriately sized electrical auto-transformer control panel to operate 2 Nos. electric pumpset of ratings 180 kW and 160 kW independently and alternatively one at a time at Plaisance Pumping Station, complete with electrical cables, selected circuit breakers, contactors, thermal overload protective relays, capacitor banks, control relays, surge/lightning arrestors which will be capable to operate the pumpset efficiently and effectively, with full protection against voltage surges and dry running.
- (v) Supply, install, test and commissioning of a new appropriately sized main isolator switch to the new auto-transformer control panel at Riviere du Rempart Pumping Station.
- (vi) Supply, install, test and commissioning of a new appropriately sized main isolator switch to the new auto-transformer control panel at Plaisance Pumping Station

- (vii) To supply and deliver recommended spare parts as per the bill of quantities.
- (viii) Check and carry-out electrical test and report on the working conditions of the existing electrical earthing protection system, cables and accessories.
- (ix) To supply, connect and test electrical earthing and bonding cables as appropriate.
- (x) To provide for suitable labelling of all the components inside the control panel.
- (xi) To carry out overall commissioning of the control panel.
- (xii) Submit 2 set hard copies and 1 set soft copy of O&M manuals, electrical line diagram and As-Built drawings.
- (xiii) Training on operation and maintenance of the auto-transformer control Panel.

The intended completion period shall be **One Hundred and Fifty (150) calendar days** from the Start Date.

The whole of the works shall be carried out in strict accordance with the Drawings, Scope of Works, Statement of requirement; and Conditions of Contract.

3.3 Specifications

3.3.1 Specification for Starter Panel – Autotransformer

Bidder shall supply, install and commission the following:

1. A new control panel housing 3 independent auto-transformer stater panels of capacity appropriate to operate pumpsets of ratings 200 kW, 160 kW and 75 kW independently. (Note all three pumpset can be in operation simultaneously)
2. A new auto-transformer control panel appropriate to operate a pumpsets of ratings 180 kW and 160 kW independently and alternatively. (Note only one pumpset will be in operation at a time)

All electrical installations shall conform to BS 7671:2018/A1:2020 - Requirements for Electrical Installations - IET Wiring Regulations.

Isolating transformer shall not be accepted in the panel. The control and power electrical schematic are illustrated in Annex. If any deviation from the proposed schematics has been made, it shall be indicated in the, Specification and Compliance Sheet, accompanied with the modified schematic at the bidding stage.

In addition, the Bidder shall submit a complete original catalogue, descriptive literature, specifications and technical data to all components of the control panels proposed in their Bids to enable the Employer to assess their proposal. The Bidder shall be specific as to the country of origin and manufacturing firm of the items intended to supply and install under this Procurement.

a. Enclosure

An extractor fan and an air vent shall be fitted in starter panel. The fan shall be located at the side face at the top, while the air-vent shall be on the opposite face at the bottom. Fan & vent openings shall be equipped with appropriate grills and dust filters, such that a minimum protection class of IP54 is ensured for the panel.

The fan shall draw air from inside the panel to the outside. It shall have the appropriate air flow rating, such that air is drawn from the outside through the bottom vent into the panel, raised up and pushed outside the panel at the top. There shall be no large components (such auto-transformer and MCCBs) too close to the vent and fan that might obstruct the air flow.

- The surface treatment for the enclosure and door shall be electrophoresis with hot polymerized polyester epoxy powder. The outer structure shall be of steel sheet of a minimum thickness of 2 mm, with no sharp corners and edges.
- Detached gland plates shall be provided at the bottom and at the side, with compression type cable glands of appropriate sizes. Adequate space shall be provided for the safe bending and termination of cables.
- The starter panel shall be floor-standing of a maximum working height of 2 m

b. Panel Door:

- Door shall not be wider than 900 mm and should be of lift-off type.
- Doors up to a maximum of height 1000 mm shall be equipped with a minimum of two hinges whereas door exceeding 1000 mm shall be equipped with minimum three hinges. The minimum door swing shall be 115°.
- All doors shall be provided with fasteners and door locks with individual locking key, such that the doors are safely, securely and tightly closed around their whole perimeter.

- Door sealing materials and fixing adhesives shall be non-absorbent and resistant to petroleum-based lubricants and cleaning products (such as, oil, grease, etc.).
- A permanent data pocket shall be fitted inside the panel preferably on the door interior to accommodate drawings and manuals.
- Warning signs shall be placed on the front of the starter panel.

c. Panel Base:

- Panel shall be free standing (floor mounted) type and shall be fitted with a raised metal plinth (base) of 200 mm or higher above the floor. The base shall be of rigid (non-flexible) metallic construction to enable horizontal rolling movement of the starter panel along the floor, without damaging the panel base.

d. Lifting Facilities:

- Eye bolts shall be fitted at the top of the panel to facilitate panel handling/lifting.

e. Panel Dimension, Spacing, and Fixation of Equipment/Components

Equipment Fixation Base Plate/Grill:

Equipment shall be fixed preferably on a specialized prefabricated, non-corrosive metallic grid with pre-designed and displaceable fixation bolts and nuts. In the absence of such a grid, a steel plate of minimum thickness 2.5 mm shall be provided for the purpose; with reinforcement at the rear where necessary so as to be able to support the equipment/components and to have sufficient thickness to allow engagement of at least two full threads.

In this case, all electrical components and/or rails shall be mounted on the steel plate by means of fixing screws into threaded holes in the plate, whereby bolts and nuts fixing at the back of the plate shall then be avoided.

Panel and Equipment Clearances

- All components including terminals shall be located at least 175 mm above the panel's bottom metallic face.
- There shall be a minimum internal clearance of 50 mm or more between the door interior (including the back surface of door mounted components) and the components projecting from the base plate of metal grid.
- Adequate spacing between electrical components shall be maintained to ensure easy removal of elements (contactor coils, etc.) for replacement/repairs and for

operating reset buttons and potentiometer knobs (of overload thermal relay and other relays).

- Sufficient space shall be ensured for internal wiring as per BS 7671:2008 and provision shall be made for spare capacity in the raceway to cater for future alterations or additions as and when necessary. In addition, a minimum of 20% or more spare space shall be provided to cater for future addition of components/equipment.

Components/Equipment Positioning and Spacing

- All control devices (relays, fuses etc.) shall be mounted in numerical order corresponding to designation in the as-made electrical drawing, in a single or double row. These shall be at appropriate levels for accessibility to maintenance personnel.
- Power devices shall be grouped and separated from control devices.
- Only one layer of terminal blocks shall be allowed which may be mounted either vertically or horizontally. Rail-mounted type terminal shall be used. Terminals for power and control voltages shall be separately grouped. Spare terminals shall be provided as follows: at least six (6) for control circuit wires and four (4) for power circuit wires.
- Heat emitting device (e.g MCCB) shall be mounted in the upper part of the panel such that heat dissipation does not affect other components.
- Heavy electrical components/accessories (e.g autotransformer) shall be mounted at the bottom and appropriate additional panel thickness and/or supports shall cater for proper and secure fixation of such items, without causing distortion to the enclosure.
- No component shall be mounted on the door except operating, signaling and measured devices.
- All the components inside the enclosure and on the front door, shall be properly labelled internally/externally as per requirement based on the proposed schematic.
- All the exposed live parts or terminals that can be accidentally touched after the panel door has been opened shall have appropriate insulation covers of breakdown insulation voltage of 1000V minimum.

- Appropriately sized earth bars shall also be mounted in the panel to accommodate incoming and outgoing earthing cables.

f. Wiring

- All wiring shall be of single core, flexible type, PVC insulated and shall be done in close raceways.
- Tapping of supply for control cables from power supply cables connections shall be made through appropriate lugs and should be done after the main MCCB so as the panel can be appropriately disconnected for maintenance.
- Conductors shall be identified at ends by sleeve-type tags bearing numbers corresponding to the final submitted as-made drawing. Engraved identification ferrules, marked to correspond with the wiring diagrams shall be fitted to both ends of each wire. Ferrules shall be of yellow color with black lettering.
- All incoming and outgoing cables connected to terminal blocks shall be provided with numbers according to the final as-made drawing.
- Termination of more than two conductors at each terminal shall be avoided by using additional strip to accommodate the extra conductors.
- There shall be no crossing of the cables on terminals.

g. Power and Control Cables

- The power cables (single core) shall be generally of 1 kV grade conductor of high conductivity copper wires insulated with PVC.
- Color codes and specifications of the power cables shall conform to BS7671: 2008 as given below:

Three Phase	Single Phase
Phase 1 – Brown	Phase - Brown
Phase 2 – Black	Neutral - Blue
Phase 3 – Grey	Earth - Yellow/Green
Neutral – Blue	
Earth - Yellow/Green	

Color codes and specification of power cables

Lugs of appropriate size shall be used for termination of power cables. Heat shrink tubing with appropriate flame-retardant and insulation properties shall be used to

insulate the exposed part of the lugs. The colour of the shrink tubes shall be according to the above table.

- Single core, PVC insulated 600V grade copper conductors shall be used for the wiring of the control circuit. The control cables and components shall be protected with fuse holder complete with suitably sized fuse. The minimum conductor size for the control cable shall be 1.5 mm².
- Cables for connection between panel and pump shall be provided by the supplier and **appropriately sized**. The specifications shall meet the requirements as hereunder:

Three Core Flexible Copper Cable	
Description	CWA Requirement
Type	Flexible (non-armoured)
Conductor Material	Plain annealed copper
Sheath Material	PVC Compound
Insulation Material	XLPE Compound
Rated Voltage U ₀ /U	600/1000V
Colour Coding for each core	Brown, Black, Grey (As per BS7671:2008)
Colour of sheath	Black
Standards	Compliant to relevant parts of BS 6920, BS EN 60228:2005 and BS 7889:2012 or appropriate equivalent British Standard
Labelling	The Rated Voltage U ₀ /U shall be clearly printed on the sheath of the power cables at regular intervals along its whole length.

h. MCCB

- Moulded Case Circuit Breakers shall be **4 poles, rated 400V, 50 Hz** and shall be fixed type fitted with tripping device to monitor under/over voltage. MCCBs shall provide class II insulation, according to **BS EN 61140:2016, IEC 61140:2016** (Protection against electric shock. Common aspect for installation and equipment) between the

front and internal power circuits. The MCCB shall preferably have a rotary handle (ON/OFF) fixed on the front of the enclosure for isolating purposes.

- The MCCB shall be appropriately rated for overload protection, short circuit protection and motor application. These shall be designed for use with contactors of **AC-3 utilization** category. It shall conform to the following standard: **BS EN 60947-2:2017+A1:2020** (low-voltage switchgear and control gear circuit breakers) and have a minimum breaking capacity of 25 kA. The MCCB shall have a normally open (NO) auxiliary contact (Q1 as indicated in the schematic diagram) for the motor control.
- They shall be designed and tested to standard **BS EN IEC 60947-1:2021** (low-voltage switchgear and control gear general rules) and shall be provided with an inverse time delay, adjustable thermal release and adjustable magnetic release as well as other necessary features.
- They shall also be fitted with an adjustable earth leakage module which shall be in the range of 30mA to 10A with adjustable trip time-delay setting.
- In case the MCCB cannot accommodate an integrated adjustable earth leakage module, a separate earth leakage protection relay (with adjustable range 30mA to 5A, and adjustable trip time-delay setting) along with appropriate current transformers (toroids), shall be included in the panel and control circuit.

i. Three Phase Auto Transformer

- The auto-transformer shall be three phase type suitable for 400V, 50 Hz AC supply. It shall be air-cooled, copper wound with tapping to provide 65% of the full line voltage. The auto-transformer shall have its nameplate fixed with appropriate data, such as, rating, number of starts per hour, etc. and same shall be clearly visible at all time.
- Each auto-transformer shall be of appropriate rating to cater for the minimum specified kW of the starter. The auto-transformer shall be capable of a minimum of ten starts per hour in an ambient temperature of 45°C and shall contain an embedded thermal protection for each winding. It shall be fixed at the bottom of the panel and shall be easily accessible for maintenance and repair. The bidder shall submit the manufacturer's technical documents/standard catalogue product

showing the standard of the auto-transformer and electrical/mechanical specifications of same.

j. Contactors

- The power contactors for starting and operating the motor shall be rated 400V, 3 poles, 50 Hz and the utilization category shall be AC-3. **All contactors shall be rated accordingly.** The contactor coil shall operate on 230V, 50 Hz power supply. The contactor shall comprise of a minimum of 2 normally close (NC) and 2 normally open (NO) auxiliaries contacts. Provision for additional component, as add-ons clipped on the contactor, shall be made if additional auxiliary contacts are required. The operating rate shall be of a minimum of 120 cycles per hour at $\leq 55^{\circ}\text{C}$. The mechanical durability shall be at least of 1,200,000 cycles.
- The panel shall be equipped with three appropriately sized power contactors (KM1, KM2 and KM3) of the same make, model and rating. A mechanical interlock device shall also be provided between KM1 and KM3.

k. Control and Protective Devices

The entire control and signal circuit voltage shall have a single source and shall be of **230Vac, 50 Hz**. The starter shall comprise of appropriate components against the following protections as indicated in the schematic diagram.

Over/Under Voltage, Loss of Individual Phase & Phase Sequence Monitoring Relay (RL1):

- Phase monitoring relay shall be of 'plug-in' type and the base socket shall be DIN rail mounted so as to be unaffected by mechanical vibration. If any of the phases goes outside the acceptable range, the relay shall trip and disconnect the control circuit.

Over Current Monitoring Relay (RL3):

- The over-current monitoring relay shall be coupled with a dedicated CT, independent and not looped to any one of the ammeters CTs.

Pressures switches for dry running protection:

- Appropriate pressure switches complete with relays for protecting the pump against dry running shall be provided and installed.

Thermal Overload Relay (F1):

- Thermal overload relay shall be of non-differential type and of class 10.

Relays:

- All auxiliary and monitoring relays shall be of 'plug-in' type continuous duty with an 11-pin base socket. The base socket shall be DIN rail mounted and the entire unit shall be robust and unaffected by mechanical vibration. The relay contact shall have a minimum contact rating of 10A at 250V. The coil shall be suited for 230Vac, 50 Hz supply

On-Delay Pneumatic Timer:

- On-delay pneumatic timers KA1, KA2, KA3 and KA5 shall be of pneumatic type, i.e., mounted on the corresponding auxiliary contactors.

Real time 24 hours Programmable Time Switch:

- The real time 24 hours Programmable Time Switch shall be of cam-type. The contact rating shall be a minimum of 10A at 250V.

Surge Arresters:

- Four pole surge arrester (400V, modular type with replaceable cartridge) shall also be installed as indicated in the Schematic diagram. The surge arrester shall be of Type 2 with a minimum rated current (I_{nominal}) of 10 KA and complete with corresponding circuit disconnection device (circuit breaker).

I. Indicator lights

- The indicator light shall be equipped with high luminosity LED lamps. Proper labels for the indicator lights shall be fixed on the front door. The visual indications shall be as given below:

S.N.	Description	Colour
1	Power Supply	L1: White/ L2: White/ L3: White
2	Motor in ON condition/ operating	Green
3	Motor tripped due to overload	Red
4	Fault in Phase monitoring relay	Red

Color of indicator lights and labels

- A lamp test push button shall also be installed on the front of the enclosure to enable verification of the status of all the pilot lamps. The testing circuit for the purpose shall not affect the control circuit when energized.

m. Hour Counter

- An hour counter of mechanical type supplied by 230Vac, 50 Hz shall be flush mounted on the front panel for the number of running hours of the pump. It shall also be non-resettable type and registering up to 99,999.9 hours.

n. Digital Panel Meter

- The digital meter shall have an integrated display and shall be installed on the door of the starter panel. The digital meter shall measure and display three phases instantaneous rms values of current, voltage, frequency, real power, reactive power, apparent power, power factor, active, reactive and apparent energy.

o. Analogue Panel Meter

- The panel shall also include an analogue ammeter and voltmeter with associated appropriate selector switches (as shown in schematic at ANNEX 1).
- The voltmeter shall indicate line-to-line and line-to-neutral voltages.
- The ammeter shall be of appropriate range and scaling, and shall be coupled with CTs of appropriate ratings, to monitor any one of the three selected line currents during motor starting and normal running periods.

p. Visit and Inspection of Panel

The successful bidder shall inform the Engineer or representatives to visit the contractor's workshop to inspect the installation in progress at the mounting stage of panel being made in house; and/or to inspect imported (pre-mounted) prior to delivery.

3.3.2 Spare parts

The Contractor shall supply all the necessary manufacturer's recommended spare parts for two years normal duty and shall quote for such items as listed in the Bill of Quantities:

The spare parts to be supplied shall include the following as listed below:-

(i) Panel

The successful bidder shall supply the following spare parts per panel:

Item No.	Description	Quantity (Unit)
1	A full set of cartridges for the surge arresters installed in the panel	2
2	A full set of fuses for each set of fuse holder.	2
3	Fuse holders	2
4	'On delay start' electronic timer	1
5	Auxiliary relay (KA#)	1
6	'On Delay' pneumatic add-on block (for auxiliary relay)	1
7	Power contactor coil (for KM#)	2
8	Over/Under Voltage Monitoring Relay	1
9	Pressure switches for dry running protection	1

Technical details and documents to be submitted at Bidding Stage**(i) Panel**

The bidder shall submit detailed (to scale) layouts (front, side and top view) of the proposed panel **at bidding stage** and the layout shall consist of the following:

- Dimension of the panel (length, width and depth).
- Proposed positioning of all components.
- Proposed positioning of the cable runway.
- Proposed positioning of components on the front and back of door including warning sign on the front door.
- Proposed routing of power cables.

The layout shall also show the dimensions of the bulky components and the space available between the components, such as, contactors and autotransformer so that the available spare space is determined at the appraisal stage.

The easiness in troubleshooting and maintaining the panel shall be considered during the appraisal. However, the proposed layout may be subjected to modifications during the implementation stage. The technical documents/standard product catalogues of the panel and for each electrical/electronic/mechanical component shall also be submitted at bidding stage.

3.3.3 Testing and Commissioning

The Contractor shall provide the methodology for testing of the electrical panel.

Upon approval of the methodology, testing of the panel shall be performed and same approved by the Project Manager. All test results shall be included in the Operation and Maintenance Manual.

The following inspections and test shall be performed upon installation of the panel.

- Inspection of all supplied and installed goods for physical damage or anomalies (which includes missing parts, detached parts, scratches, deformities, cracks, discoloration, peeling and/or spalling of surface coating, corrosion... etc.).
- Visual check of the panel and components to verify that there is no damage to the panel components, and that the panel, components/cables and workmanship are up to the standards, as specified in the bidding document.
- A test report for the auto-transformer from the manufacturer shall be submitted to the IA upon delivery of the panel.
- Insulation resistance and continuity tests shall be performed on the auto-transformer windings on delivery and the results shall be compared with manufacturer's test report.
- An off-load test shall be performed on the panel for the verification of the following:
 - a. Starting sequence of autotransformer starter and
 - b. Proper functioning of equipment (simulation of faults).

Commissioning of the whole works shall be done prior to issue of Taking Over Certificate.

3.3.4 Maintenance During Guarantee Period

The bidder shall carry out all necessary maintenance on the installations during the guarantee period. This shall include regular visits to ascertain the proper operation of the pumping station, attendance to breakdowns and replacement of parts as necessary.

3.3.5 Operations and Maintenance Manuals

(i) Panel

The successful bidder shall supply together with the starter panels **two (2) hard copies and one (1) soft copy** of legible as-made schematic drawings among which one shall be plastic coated (or plastic binder-cover, in case of multi-sheets drawings). The plastic protected schematics shall be placed inside the panel with an appropriate holder.

The drawing shall have the cable numbering which shall reflect accurately the wiring numbering in the panel. Any deviation made from the proposed schematic diagram (**ANNEX 1**) shall not alter the control philosophy.

Moreover, all user manuals (technical and operation) of components shall be submitted for the starter panel in appropriate cover file. **Two (2) hard copies and one (1) soft copy of the layout of each panel**, showing the positioning of the components on the door (internal & external) and inside the panel shall be provided. The dimensions of the panel shall also be clearly indicated on the panel.

3.3.6 Warranty

The Bidder shall warrant that the equipment and accessories supplied under the Contract are brand new, unused, of the most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Bidder shall further warrant that the Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except insofar as the design or material is required by the Public Body's Specifications) or from any act or omission of the Bidder, that may develop under normal use of the supplied Goods in the conditions obtaining in the country of final destination.

This warranty shall remain valid for **twelve (12) months** after the equipment and accessories have been commissioned by the Successful Bidder and accepted by the Public Body.

The Public Body shall promptly notify the Successful Bidder in writing of any claims arising under this warranty period.

Upon receipt of such notice, the successful Bidder shall, within a maximum delay of two weeks, repair or replace the defective equipment and accessories or parts thereof, without costs to the Public Body other than, where applicable, the cost of inland delivery of the repaired or replaced equipment and accessories or parts from the port of entry to the final destination.

If the successful Bidder, having been notified, fails to remedy the defect(s) within a maximum delay of two weeks, the Public Body may proceed to take such remedial action as may be necessary, at the Successful Bidder's risk and expense and without prejudice to any other rights which the Public Body may have against the successful Bidder under the Contract.

3.3.7 Drawings of the works

All the Drawings of the Works are attached herewith in the Bidding Documents. It shall be the responsibility of the Bidder to check any information therein prior to submitting his bid and to start of works. Any modifications or assumptions made on these drawings shall be notified by the Bidder in the separate memorandum.

The Bidder shall submit with his bid any additional drawings which he has used for pricing his bid.

As-built drawings shall be supplied as specified hereinafter.

3.3.8 Details of existing pipelines, CEB lines and other infrastructures

The Contractor shall verify the presence of pipelines, electric cables, underground structures and other infrastructures prior to execution of works within immediate surroundings to the site, and execute works without disturbing and damaging any of these features. Any disturbance caused to such infrastructures shall be immediately notified to the Project Manager.

Prior to excavations, the Contractor shall dig out the number of trial pits he judges necessary for exact identification of location and depth of the existing buried pipes. He shall submit to the Project Manager for approval of a methodology for excavation so as not to disturb or damage the existing components, prior to execute work.

3.3.9 Programme of the works

- a. The whole of the works shall be completed within 180 calendar days from start date.
- b. The Contractor shall submit a programme of works to the Project Manager for approval within fourteen (14) days from the date of issue of the Letter of Acceptance.
- c. The Contractor shall during execution of the contract, revise the programme of works every fortnight and in addition as and when requested and directed by the Project Manager.

- d. The works shall be carried out according to the programme submitted by the Contractor and approved by the Project Manager. The Contractor shall take the following into consideration while preparing the Programme of Works:
- Pipeline will be closed for a maximum of 2 days on a particular site to allow for connection works.
 - The Contractor shall ensure that track roads are not obstructed and shall remain accessible to planters and irrigation workers
 - The Programme of works shall show all resources (labour, plant and equipment and cash flow) necessary to plan the weekly and monthly progress between the commencement and completion dates. Additionally, it shall show the timing, order of procedure and general method for carrying out the works, with timing for mobilisation of plant and equipment and for the purchase/ordering of goods for different stages of works.
 - The critical path with all activities involved therein shall clearly be shown.
 - The Programme of Works shall also take due regards of the time required for drawings approval, testing and inspection at the works, freight and delivery to the storage area.

3.3.10 Regulations, Standards and Workmanship

Except where otherwise specified, all materials to be supplied under the contract shall conform to the requirements of the relevant and latest standards issued by the International Standard Organisation and the workmanship shall conform to the requirements of the relevant and latest British Standard Codes of Practice issued by the British Standard Institution. Other equivalent national standard specifications may be used in the absence, or in the place of a relevant ISO or BSCP standard, at the sole discretion of the Project Manager and with his approval. The standards of workmanship and finish shall be uniform throughout the whole contract and shall be approved by the Project Manager. The standards mentioned herein are issued by the Organisations listed in table 1 where the abbreviations used are defined.

All materials and workmanship not fully specified herein or covered by the standards mentioned before shall be of such kind as is used in first class work. The Project Manager shall determine whether all or any of the materials offered for use in the works are suitable for the purpose for which they are intended and the Project Manager's decision in that respect shall be final.

The Contractor shall supply at his own cost and shall permanently keep on sites all the standard specifications and Codes of Practice. These documents shall be available at all times for inspection

and use by the Project Manager's Representative and shall revert to the Contractor at the end of the Contract.

A list of these standards shall be supplied in the Separate Memorandum of the Bidder.

Table 1: List of standards

Name and Address	Abbreviation
International Standard Organisation Code Postale 56 1211 GENEVA 20, Switzerland	ISO
Mauritius Standard Bureau MOKA, Mauritius	MS
British Standard Institution 389 Chiswick High Road GB- London W4 4 AL	BS BSCP
Association Française de Normalisation 23, Rue Notre Dame des Victoires 75002 - PARIS, France	AFNOR
DeutschesInstitutfürNormung BenthVertrichStrasse 1 BERLIN 30, West Germany	DIN
American Water Works Association 6666 West Quincy Avenue DENVER CO 80197, USA	AWWA
American Society for Testing Materials 1916, Race Street PHILADELPHIAPA19103, USA	ASTM
International Electrotechnical Commission Boite Postale 56 1211 GENEVA 20, Switzerland	IEC

Name and Address	Abbreviation
Standard ComiteEuropeen de Normalisation Rue de Stassart, 36 B 1050 Bruxelles	CEN
Normes Francaise, AFNOR Tour Europe, F92049 Paris- La Defense FRANCE	NFC
Union Technique de L'Electricite 33, Ave. du General Leclerc BP 23-92262 Fontenay-aux-Roses – CEDEX	UTE
European Norm ON-CEN, PO Box 130, A-1021 Wien AUSTRIA	EN
Indian Standard Bureau of Indian Standards ManakBhavan, 9 Bahadur Shah Zafar Marg New Delhi-110002 INDIA	ISI
American Petroleum Institute American Society of Mechanical Project Managers American Welding Society American National Standards Institute 1819 L Street NW, WashingtonDC20036, USA	API, ASME AWS ANSI

The performance of the equipment supplied under the Contract shall be guaranteed in accordance with:

- (i) BS EN 60085:2008 – Electrical insulation. Thermal evaluation and designation.
- (ii) BS 7889:2012. Electric cables. Thermosetting insulated, non-armoured cables with a voltage of 600/1000v, for fixed installations.
- (iii) BS EN 10255:2004 – Non-alloy steel tubes suitable for welding and threading. Technical delivery conditions.
- (iv) BS 7671:2008+A1:2011- Requirements for electrical installations. IET wiring regulations. Seventeenth edition

3.3.11 Quality of materials

All goods to be supplied under this contract (pipes, control valves, filtration system, jointing materials, nuts, bolts, gaskets & other fittings) shall be suitable for irrigation water purposes. The quality of materials and goods shall be of first grade and best quality. All goods supply shall be new, unused, free from any defects and conforming to BS, EN, ISO or other equivalent standards and shall be approved by the Project Manager. Inferior or low-grade supplies shall be rejected by the Project Manager.

Bidder shall submit a complete catalogue information, descriptive literature, specifications and technical data for control panels, cables and all the different components and proposed in their Bids to enable the Employer to access their proposal. The Bidder shall be specific as to the country of origin and manufacturing firm of the items intended to supply under this Procurement.

3.3.12 Plant and equipment

Contractor shall provide and install all necessary plant and equipment (mechanical, electrical and otherwise) for all other trades and allow for altering, adapting and maintaining them as necessary for efficient and expeditious execution of the works and at or before completion clear same from the site and make all good, to the entire satisfaction of the Project Manager.

In addition to what has already been specified, all Plant and Equipment shall be designed to provide adequate protection against the entry of vermin and dust and to minimise fire risk and consequential fire damage.

All parts which can be worn or damaged by dust shall be totally enclosed in dust proof housings.

All equipment shall operate without excessive vibration and with minimum of noise.

All similar items of plant and equipment and their components together with spare parts shall be made from the same material and shall be fully interchangeable.

All manually operated plants and equipment not located inside a building shall be provided with facilities for making it tamperproof. This is in addition to any requirements of the specification for securing plant under operational conditions.

3.3.13 Patent Rights

The Bidder shall enclose in his bid a statement from the equipment manufacturer that the Bidder is authorised to supply and install the goods in Mauritius.

The successful Bidder shall indemnify the Public Body against any third party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof in the Public Body's country.

Moreover, the successful Bidder may be requested to submit a certificate of conformity for any material and equipment to be supplied which is equivalent to the existing ones. The Public Body shall not be held responsible for any failure by the successful Bidder with respect to non-suitability of quoted parts and the Bidder shall, in case of non-conformity of the parts, replace them with the conforming ones at no additional cost.

3.4 The Site

3.4.1 Site

The location of the sites are indicated in:

- (i) Drawing No. OMD/AUTOTRANSFORMERCONTROLPANELS//46/25/01 for Riviere du Rempart Pumping Station
- (ii) Drawing No. OMD/AUTOTRANSFORMERCONTROLPANELS//46/25/03 for Plaisance Pumping Station.

3.4.2 Inspection of site

The availability of data and drawings do not relieve the Contractor of his responsibility to inspect the Site for further investigations required for execution of the Works.

The Contractor is recommended to acquaint himself with the site locations. He shall assess the presence of all visible existing services, structures or obstacles, rock piles and ranges, trees, steep slopes, conditions of track roads, etc. The Contractor shall ascertain that the equipment he intends to propose is perfectly adapted to operate fully and satisfactorily under the topographical conditions of the site. He shall take into consideration all the above factors while pricing in the Bill of Quantities.

3.4.3 Access to site

- The Contractor shall give notice to the Employer prior to shipment and delivery of equipment and supplies to Site. The Employer shall grant possession of site or part of it to the Contractor as specified in Conditions of Contract and directed by the Project Manager taking into consideration the programme of work.

- The Contractor shall give notice to the Project manager prior to commence work.
- The Contractor shall be responsible for the reinstatement of existing roads if same were disturbed/damage at respective site and shall also be responsible for safe and easy passage of vehicles on the existing track roads.

3.4.4 Clearance of site

Site clearance shall be carried out over the areas to be occupied by the works and for working space and shall consist of removal and carting away of all unserviceable materials, debris, trees, sugar cane bushes and other vegetation and the grubbing out of all roots and also rocks and boulders. Topsoil so removed shall be kept aside for reinstatement.

3.4.5 Site to be tidy

The site shall be maintained in a neat, tidy and healthy condition, and the Contractor shall remove all waste, debris and unwanted materials and other litter from site upon completion of works.

3.4.6 Safety on site

The Contractor shall adhere to all rules and regulations regarding health and safety of personnel as directed by the OSHA 2005 & regulations and the Irrigation Authority's Health and safety officer. The successful bidder shall take all necessary steps to ensure that the works are done in an orderly manner and that safety precautions are enforced to avoid accidents to the personnel of the successful bidder and to other parties working on Site.

3.4.7 First aid outfit

The Contractor shall provide and maintain on Site in readily available positions near the sites of work, adequate first aid outfit and have experienced first aid man available for attending minor accidents. Fire extinguishers shall also be kept on site.

3.4.8 Reinstatement of sites, tracks and estate roads

Upon completion of Works the successful bidder shall reinstate the Sites, Tracks and Estate roads in a condition not less satisfactory than they were prior to commencement of work.

3.4.9 Maintenance of services and structures

The Contractor shall ascertain the location of all watercourses, sewers, drains, water pipes, electricity, telecommunication cables, other services and structures which may be encountered

during the construction of the Works. He shall temporarily support or divert and subsequently reinstate all such services and structures as necessary and to the satisfaction of the Project Manager.

As soon as any such service or structure is encountered on, over, under, in or through the Site during the performance of the Contract, the Contractor shall make a record of the location and detailed description of such service or structure and shall send the same forthwith to the Project Manager.

Where permanent diversion or support of such service or structure is rendered necessary as the unavoidable result of the construction of the Works in accordance with the Contract, the Project Manager - after consultation with the Employer will instruct the Contractor as to the diversion or support to be provided and the Contractor shall be paid the costs thereof in accordance with Clause 40 of the General Conditions of Contract.

3.4.10 Pipes, fittings, irrigation equipment and store yard

All pipes, fittings, equipment and other materials to be used in temporary or permanent works shall be delivered from ships or local suppliers to a store yard approved by the Project Manager. No equipment shall be stored directly on site of works without approval from the Project Manager. The programme of delivery of these pipes, fittings, control panels, control valves and equipment to site shall be supplied by the Contractor in his separate memorandum.

The Contractor shall make his own arrangements for all land, store yards, stores, workshops, offices, etc. and for all services in connection therewith. The storage of the fittings and irrigation equipment shall be to the satisfaction of the Project Manager. The Project shall have access to the store yard to inspect all control panels, pipes, control valves, fittings, pumps and equipment by the Project Manager prior to acceptance.

At time of delivery and acceptance, the equipment to be incorporated in the Works shall be inspected by the Contractor who shall thereafter be responsible for their storage, stock control and safe keeping. The Employer or the Project Manager shall be in no way responsible for breakages or losses of equipment and such items shall be replaced or repaired by the Contractor to the satisfaction of the Project Manager at no cost to the Employer.

The Contractor shall keep structured records on all items available in the store, i.e date of shipment, date of delivery, date of issue to be incorporated in Works, quantity used/left in stock, quantity damaged, etc. Such records shall be made available to the Project Manager on a regular basis.

3.4.11 Contractor's staff, communication, offices etc.

a. General

The Contractor shall advise the Project Manager at which of his offices any notices may be served.

b. Language of Correspondence and Records

All communications between the Contractor, the Project Manager and the Employer shall be in the English language. All books, time sheets, records, notes, drawings, documents, specifications and manufacturers' literature etc. shall be in the English language.

If any document is in a language other than English a certified translation to English by an approved translator shall be submitted to the Project Manager or his Representative.

c. Contractor's Duty Staff & Offices

The Site Agent of the Contractor shall be permanently on the Site during normal working hours and immediately available at all other times. He shall be delegated full authority to act upon instructions given by the Project Manager or his authorised staff and shall be fluent in the spoken and written English language.

The Contractor shall provide at its own cost and maintain at the site, offices for the use of his representative and to which written instructions by the Project Manager can be delivered. Any instructions delivered to such offices shall be deemed to have been delivered to the Contractor.

d. Public Relations

The Contractor shall designate within his site organisation competent staff whose responsibility shall be to ensure good public relations.

The Contractor shall provide and maintain suitable and sufficient shelters and mess rooms for his workmen and supervisory staff.

The Contractor shall provide sufficient closets or latrines and washing facilities to the satisfaction of the relevant authority. They shall be properly screened and maintained in a clean and sanitary state at all times.

The mess rooms, closets and latrines shall be located in positions to be approved by the Project Manager. The Contractor shall be responsible for making all arrangements for the disposal of waste from mess rooms, closets and latrines.

The Contractor shall satisfy the Project Manager or his representative that all his personnel working on the site are medically fit.

3.4.12 Inspections by project manager during defects liability period

The Project Manager will give the Contractor due notice of his intention to carry out any inspections during the Defects Liability Period and the Contractor shall thereupon arrange for an authorised representative acceptable to the Employer to be present at the times and dates named by the Project

Manager. This representative shall render all necessary assistance and take note of all matters and things to which his attentions is directed by the Project Manager.

3.4.13 Progress photograph

The Contractor shall provide progress photographs, illustrating each stage of the work being effected to the Project Manager. Photos shall be colored and of minimum size A6 (105mm*148mm). Photos are to be supplied in hardcopy and soft copy in USB pen drive.

The location, date when taken and the direction in which the camera was facing shall be inscribed on the back of each photograph. The photographs shall be submitted to the Project Manager in an album.

3.4.14 Notice of operation

The Contractor shall give full and complete written notice of all important operations to the Project Manager to make such arrangements as the Project Manager may consider necessary for the inspection of works and for any other purpose. The Contractor shall not start any important operation without the written approval of the Project Manager.

3.4.15 Progress meetings

The Contractor's Contract Manager shall attend regular progress meetings on Site which will be convened by the Project Manager. The Contractor shall also attend any other meetings requested by the Project Manager.

3.4.16 As-built drawings

The Contractor shall supply copies of the as built drawings for the project for:

- The new control panel and allied equipment installed;
- Other drawings as requested by the Project Manager.

The number of copies and date by which "as built" drawings are to be submitted by the Contractor are as follows:

Three (3) hardcopies, duly approved by the Project Manager, upon completion of the project. One set of final as built drawings shall also be submitted on USB pen drive in AutoCAD drawing format.

3.4.17 Conditions of site and wayleave

Before carrying out work on site, the site shall be inspected by the Contractor in conjunction with the Project Manager to establish its general condition which shall be agreed and recorded in writing, and where in the opinion of the Project Manager it is deemed necessary, by means of photography.

Any damage caused as a result of the Contractor's operation to existing plant and equipment beyond the permitted working area mentioned above shall be made good (site reinstatement, crop compensation, and other damages) at the Contractor own expense within two weeks after receipt of the Project Manager's instruction.

B. SPECIFICATION AND COMPLIANCE SHEET

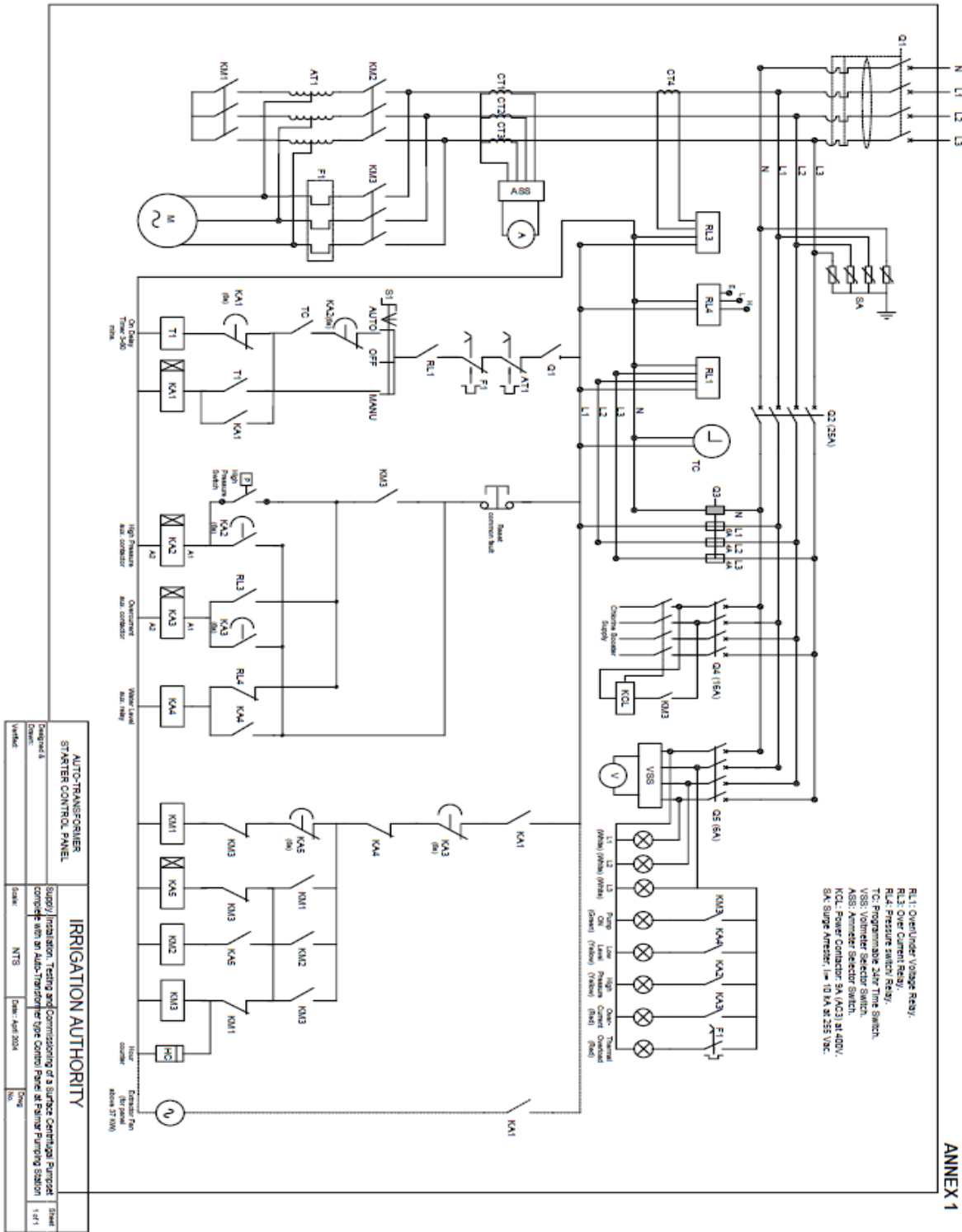
Procurement Reference Number: OMD/AUTOTRANSFORMERCONTROLPANELS/46/25

Item No.	Specifications and Performance Required	Compliance of specifications and Performance Offered	Details of Non-Compliance/Deviation (if applicable)
	A	B	C
1.	Supply, install and test a set of control panels at Riviere du Rempart Pumping, consisting of 3 Nos individual auto-transformer control panels of ratings appropriate to operate 3 different pumpset of rating 200 kW, 160 kW and 75 kW independently complete with associated electrical wiring works, RCD, circuit breakers, contactors, thermal overload relay, capacitor bank, control relays, surge/lightning arrestors and switches etc... as morefully specified		
2.	Supply, install and test an auto-transformer control panel at Plaisance Pumping Station of rating appropriate to operate 2 nos. different pumpset of rating 180 kW and 160 kW independently complete with associated electrical wiring works, RCD, circuit breakers, contactors, thermal overload relay, capacitor bank, control relays, surge/lightning arrestors and switches etc... as morefully specified.		

Specification and Compliance Sheet Authorized By:

Name:		Signature:	
Position:		Date:	
Authorized for and on behalf of:		Company:	

Schematic diagram of Control Panel



3.5 Drawings

The following drawings are annexed:

Drawing No.	Title
OMD/AUTOTRANSFORMERCONTROLPANELS//46/25/01	Context/ location plan of Riviere du Rempart pumping station
OMD/AUTOTRANSFORMERCONTROLPANELS/46/25/02	Existing Pumping Station Layout at Riviere du Rempart
OMD/AUTOTRANSFORMERCONTROLPANELS/46/25/03	Context/ location plan of Plaisance pumping station
SB 300/E002	Plaisance - Pumproom Electrical Layout

Section 4: Section 4 - General Conditions of Contract and Particular Conditions of Contract

Any resulting contract shall be placed by means of a Letter of Acceptance and shall be subject to the General Conditions of Contract (GCC), (**Ref:W/GCC10/04-24**), for the Procurement of Works (available on website ppo.govmu.org) except where modified by the Particular Conditions of Contract below.

Procurement Reference No: OMD/AUTOTRANSFORMERCONTROLPANELS/46/25

The clause numbers given in the first column correspond to the relevant clause number of the General Conditions of Contract.

Section 5: Particular Conditions of Contract

PROCUREMENT REFERENCE NO: OMD/AUTOTRANSFORMERCONTROLPANELS/46/25

These clauses should be read in conjunction with the General Conditions of Contract.

A. General	
GCC 1.1 (o)	The Defects Liability Period is 12 months from successful commissioning of the whole project.
GCC 1.1 (r)	The Employer is the Irrigation Authority The authorised representative is the General Manager
GCC 1.1 (v)	The Intended Completion Period for the whole of the Works shall be one hundred and fifty (150) calendar days calculated from start date.
GCC 1.1 (y)	The Project Manager is to be appointed by the Employer.
GCC 1.1 (aa)	The Sites are indicated as per drawings No. : (1) OMD/AUTOTRANSFORMERCONTROLPANELS/46/25/01 (2) OMD/AUTOTRANSFORMERCONTROLPANELS/46/25/03
GCC 1.1 (dd)	The Start Date shall be seven (7) days from the date of the Order to Commence works to be issued by the Project Manager.
GCC 1.1 (hh)	Refer to Section 3.2 - Scope of Works.
GCC 2.2	Sectional Completions are not allowed.
GCC 2.3(i)	The following documents also form part of the Contract: 1) Pre-award correspondences 2) Letter of Acceptance 3) Specifications 4) Bill of Quantities 5) Drawings 6) Post-award Submissions a) Performance Security b) Insurance Policies c) Joint Venture Agreement (if any) d) Programme of Works 7) Technical Proposal submitted by the Bidder including all catalogues and brochures 8) Any other document submitted by the Bidder which the Employer considered to be necessary for inclusion in the Contract.
GCC 3.1	The language of the contract is English The law that applies to the Contract is the law of the Republic of Mauritius.

GCC 4.1	<p>The Project Manager shall obtain specific approval from the Employer before carrying out any of his duties under the Contract which in the Project Manager's opinion will cause the amount finally due under the Contract to exceed the Contract Price or will give entitlement to extension of time. This requirement shall be waived in an emergency affecting safety of personnel or the Works or adjacent property.</p>
GCC 5.1	<p>The Project Manager is not allowed to delegate any of his duties and responsibilities without the approval of the Employer.</p>
GCC 6	<p>Any notice shall be sent to the following addresses:</p> <p>The General Manager, Irrigation Authority, 5th Floor Fon Sing Building, 12 Edith Cavell Street Port Louis.</p> <p>For the Contractor, the address shall be as given on the first page of the Letter of Acceptance and the contact name shall be:</p> <p>_____.</p>
GCC 8.1	<p>Schedule of other contractors: Not applicable</p>
GCC 9.1	<p>To add under Key Personnel:</p> <p>(i) One Contract Manager (part time), holding at least a Degree in Electrical or Electromechanical Engineering or Building Services Engineering works from a recognised institution. He shall have at least 5 years experience in Electrical or Electromechanical engineering works or Building Services Engineering works and shall be registered with the Council of Registered Professional Engineer of Mauritius</p> <p>(ii) Site agent (full-time) holding at least a Diploma in Electrical or Electromechanical engineering works or Building Services Engineering works from a recognized institution. He shall have at least 3 years experience in Electrical or Electromechanical engineering works or Building Services Engineering works.</p> <p>(iii) One foreman having at least 3 years of experience in electrical installation works.</p> <p>(iv) At least one qualified and experienced electrician having a minimum 3 years of experience related to installation of electrical control panel.</p>

GCC 13.1	<p>Except for the cover mentioned in (d)(i) hereunder, the other insurance covers shall be in the joint names of the Contractor and the Employer and the minimum insurance amounts shall be:</p> <ul style="list-style-type: none"> a) for the Works, Plant and Materials: Contact Price + 15% b) for loss or damage to Equipment: Cost of equipment plus 15% of its value c) for loss or damage to property (except the Works, Plant, Materials, and Equipment) in connection with Contract: Rs 3 million d) for personal injury or death: <ul style="list-style-type: none"> i. of the Contractor's employees: As per laws of Mauritius ii. of other people: Rs 10 million - This cover shall be in the joint name of the two parties covering any third party and extended to the site representatives of the Irrigation Authority. e) for loss or damage to materials on-site and for which payment have been included in the Interim Payment Certificate, where applicable. <p>The Contractor shall choose to take the insurance covers indicated above as separate covers or a combination of the Contractor's All Risks coupled with the Employer's liability and First Loss Burglary, after approval of the Employer. All insurance covers shall be of nil or the minimum possible deductibles at sole expense of the contractor.</p> <p>All insurance covers shall be valid from the commencement of works until the end of the defects liability period and shall be approved by the Project Manager.</p>
GCC 14.1	<p>Site Data are:</p> <p>There are no site data available for consultation. Available information concerning the site are described in the specifications, bill of quantities and drawings.</p> <p>Bidders are however advised to visit and examine the site of works and surrounding prior to submission of bid. They should acquaint themselves with the nature of site, extent of work, limits of site, sizes and accessibility to existing chambers, means of access, general nature of the soil and all other matters which may influence preparation and execution of their bid. All costs incidental thereof shall be at the Bidder's own expense.</p> <p>No claim due to ignorance of these factors as mentioned in the preceding paragraph shall be entertained from the contractor.</p> <p>The costs of visiting the site shall be at the Bidder's own expense.</p>
GCC 16.1	<p>The intended completion date shall be One hundred and fifty (150) calendar days from the Start Date</p>
GCC 20.1	<p>The Site Possession Date shall be stated by the Project Manager in the Letter of Order to Commence and shall be based on the Program of works to be approved by the Project Manager as stated in GCC 25.1.</p>
GCC 23.1 & GCC 23.2	<p>Appointing Authority for the Adjudicator: No Adjudicator shall be appointed for this Contract.</p>

GCC 24.	<p>In case a dispute of any kind arises between the Employer and the Contractor in connection with, or arising out of, the contract or the execution of works or after completion of works and whether before or after repudiation or other termination of Contract, including any dispute as to any opinion, instruction, determination, certificate or valuation of the Employer's Representative, the matter in dispute shall, in the first place, be referred in writing to the employer's representative, with a copy to the other party.</p> <p>The Employer and the Contractor shall make every effort to resolve the dispute amicably by direct informal negotiation. If, after twenty-eight (28) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Irrigation Authority or the Contractor may give notice to the other party of its intention to refer the matter to the competent courts of Mauritius</p>
GCC 24.3	Hourly rate and types of reimbursable expenses to be paid to the Adjudicator: Not applicable.
GCC 24.4	Not applicable
B. Time Control	
GCC 25.1	The Contractor shall submit for approval a Program for the Works within <i>seven (7)</i> calendar days from the date of the Letter of Acceptance.
GCC 25.3	<p>Program update shall be required and the period between Program updates is ten (10) calendar days.</p> <p>The amount to be withheld for late submission of an updated Program is MUR 2,000.00 per day delayed.</p>
C. Quality Control	
GCC 33.1	The Defects Liability Period is: 365 days calculated from the date of completion of the works to be certified by the Project Manager.
GCC 34.1	<p>Delete sub-clause 34.1 and replace by the following:</p> <p>Should any defect arise during the contractual period and up to the end of the Defects Liability Period and the Contractor fails to correct the Defect within the time specified in the Project Manager's notice, this shall constitute a breach of the Contractor's obligations under the contract. The Project Manager shall assess the cost of having the defect corrected and recover the money from monies due to the contractor or from the Performance Security.</p>
GCC 37.1	<p>To add:</p> <p>Prior to issue of any Variation Order (VO) involving cost implication, the Project Manager shall assess the variation and seek the approval of the Employer.</p>
GCC 37.2	<p>To add:</p> <p>The Project Manager shall assess all quotations and submit recommendation to Employer for approval prior to issue of the VO.</p>

GCC 39.7	Interim Payment for Plant and Material on site is applicable.
D. Cost Control	
GCC 40.1	<p>The Employer shall pay the Contractor the amounts certified by the Project Manager within 14 days of the date of each certificate but not later than 56 days after the Project Manager has received a statement with supporting documents from the Contractor.</p> <p>Minimum amount of Interim Payment shall be MUR 500,000</p>
GCC 41.1 (I)	<p>The term “exceptionally adverse weather conditions” is hereby defined as any one of the following events:</p> <p>(i) 100 mm rainfall or above recorded in one day of the nearest rain station;</p> <p>(ii) An official declaration of ‘Torrential Rain’ by meteorological Department of Mauritius; and</p> <p>(iii) Cyclone warning Class II or above.</p>
GCC 43.1	The currency of the Employer’s country is: Mauritian Rupees.
GCC 44.1	The Contract is not subject to price adjustment. It shall be a fixed price which shall not be revised or adjusted for any fluctuations in the cost of inputs.
GCC 45.1	<p>10% of the amount shall be retained from any payment in respect of the value of work certified. Half of the retention money will be released after formal taking over of the Works and the remaining shall be released after the Defect Liability Period subject to the Contractor making good all defects.</p> <p>The limit of Retention Money shall be 5% of Contract Price.</p>
GCC 46.1	<p>The liquidated damages for the whole of the Works are MUR 5,000.00 per day.</p> <p>The maximum amount of liquidated damages for the whole of the Works is 10% of the awarded contract value.</p>
GCC 47.1	Not applicable.
GCC 48.1	The Advance Payments shall be: 10 % of the Contract Price excluding VAT, less any provisional and contingencies sums and shall be paid to the Contractor within 14 days after signature of the Contract and submission of the Advance Payment security by the contractor no later than 7 days from the signature of the Contract.
GCC 48.3	<p>Add in sub-clause 48.3 as follows:</p> <p>If the advance payment has not been repaid prior to the issue of the Completion Certificate for the Works or prior to Termination under Clause 57 of the GCC, the whole of the balance then outstanding shall immediately become due and payable by the Contractor to the Employer.</p>
GCC 49.1	The Performance Security amount is 10 % of the awarded Contract Price excluding VAT, inclusive of Provisional Sum and Contingencies Sum and shall be in the form of an unconditional Bank Guarantee as per the format provided at section 5, and shall be valid until the issue of the Defects Liability Certificate.

E. Finishing the Contract	
GCC 56	The date by which operating and maintenance manuals are required is two weeks before the intended completion date.
GCC 56.2	The amount to be withheld for failing to produce operating and maintenance manuals by the date required in GCC 56.1 is MUR 20,000.00 .
GCC 57.2 (g)	The maximum number of days shall be computed based on the maximum amount of liquidated damages for the whole of the Works.
GCC 59.1	The percentage to apply to the value of the work not completed, representing the Employer's additional cost for completing the Works, is 25%.

Section 6: Section 5 - Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

Performance Security

.....*Bank/Insurance Company's Name and Address of Issuing Branch or Office*.....

Beneficiary:*Name and Address of Public Body*.....

Date.....

PERFORMANCE GUARANTEE No.:

We have been informed that*[name of the Contractor]*
(hereinafter called "the Contractor") has entered into Contract No.....*[reference number of the Contract]* dated..... with you, for the execution of*[name of Contract and brief description of Works]*(hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance security is required.

At the request of the Contractor, we *[name of Bank/Insurance Company]*
.....hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[amount in figures (amount in words)]* such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire and returned to us not later than twenty- one days from the date of issuance of the Defects Liability Certificate, calculated based on a copy of such Certificate which shall be provided to us, or on the.....day of,, whichever occurs first. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

.....*Seal of bank/Insurance Guarantee and*

Signature(s).....

Advance Payment Security

The Guarantor..... *[insert bank/Financial Institution's name and address of place of issue, unless indicated in the letterhead]*

Advance Payment Guarantee No.:..... *[insert Guarantee Reference Number]* **Name of Contract/Contract No.:***[insert name or reference number of contract]*

The Beneficiary (the Employer):*[insert Name and Address of Employer]*

We have been informed that *[insert name and address of the Contractor]* (hereinafter called the "Applicant") is your Contractor under such Contract and wishes to receive an advance payment, for which the Contract requires him/her to obtain a guarantee.

At the request of the Applicant, we*[insert name of Guarantor]* hereby irrevocably undertake to pay you, the Beneficiary/Employer, any sum or sums not exceeding in total the amount of*[insert in figures and words the maximum amount payable and the currency in which it is payable]* (the "Guaranteed Amount") upon receipt by us of your demand in writing and your written statement that:

(a) the Applicant has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or

(b) the Applicant has failed to repay the advance payment in accordance with the Conditions of Contract, specifying the amount of the advance payment which the Applicant has failed to repay.

This guarantee shall become effective upon receipt (of the first instalment) of the advance payment by the Applicant. The Guaranteed Amount shall be reduced by the amounts of the advance payment repaid to you, as evidenced by interim payment certificates issued under Sub-Clause 40.1 of the Conditions of Contract. Following receipt of a copy of each interim payment certificate, we shall promptly notify you of the revised Guaranteed Amount accordingly.

Any demand for payment must contain your signature(s) which must be authenticated by your bankers or by a notary public. The authenticated demand and statement must be received by us at the following office *[insert address of office]* on or before.....*[insert the date 70 days after the expected expiry of the Time for Completion]* (the "Expiry Date"), when this guarantee shall expire.

The party liable for the payment of any charges:*[insert the name of the party]*.

This guarantee shall be governed by the laws of*[insert the law governing the guarantee]*, and shall be subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758.

..... *[Seal of Bank/Insurance Company and Signature(s)]*.

Letter of Acceptance

[on letterhead paper of the Employer]

..... ***[date]***

To: ***[name and address of the Contractor]***

Subject: ***[Notification of Award Contract No.]***

This is to notify you that your Bid dated ***[insert date]*** for execution of the ***[insert name of the contract and identification number, as given in the Appendix to Bid]*** for the Accepted Contract Amount of .Rs ***[insert amount in numbers and words and name of currency]***, exclusive of VAT, as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by *(insert name of Public Body)*.

You are requested to furnish the Performance Security in accordance with the General Conditions of Contract, using for that purpose of the Performance Security Form included in Section V (Contract Forms) of the Bidding Document.

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

Attachment: Contract Agreement

Contract Agreement

THIS AGREEMENT made the day of,, between **[name of the Employer]**. (hereinafter “the Employer”), of the one part, and **[name of the Contractor]**. (hereinafter “the Contractor”), of the other part:

WHEREAS the Employer desires that the Works known as **[name of the Contract]**. should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
 - (a) the Letter of Acceptance
 - (b) the Bid
 - (c) the Addenda Nos **[insert addenda numbers if any]**.
 - (d) the Appendix to the General Conditions of Contract
 - (e) the General Conditions of Contract;
 - (f) the Specification
 - (g) the Drawings; and
 - (h) the completed Schedules,
3. In consideration of the payments to be made by the Employer to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Mauritius on the day, month and year indicated above.

Signed by:

for and on behalf of the Employer

Signed by:

for and on behalf the Contractor

In the presence of:

in the presence of:

Witness, Name, Signature, Address, Date

Witness, Name, Signature, Address, Date

Section 7: Format for Bank Certificate

(Bank's Official Letterhead)

Bank Certificate

Procurement Reference No:

Name of Project: .

For: (Name of public body)

THE UNDERSIGNED

(Bank Name):

(Address):

Certifies that the firm:

..... (Name of firm and address)

for the purposes of submitting a bid for the above-mentioned project has, at the present time,

the financial means and resources for the proper execution of the Contract (if awarded) with a minimum of liquid assets and/or credit facilities of (MUR) net of other contractual commitments.

Drawn at.....

Date:.....

For:(Bank Name)

Represented by:(Name of Officer)

Status:.....

Signature:.....

[Bank Seal]

[Note: The bidder should ensure that the Bank Certificate submitted by a Bank shall be substantially similar to the above format]