

# **TENDER DOCUMENT**

**MR 52/2015**

## **Installation of 33kV Underground Power Cables**

**Vatuwaqa Substation – Kinoya Substation  
Vatuwaqa Substation – Cunningham Substation  
Cunningham Substation – Kinoya Substation**

### **TRENCHING, DUCTING AND CABLE LAYING WORKS FOR 33KV CABLE**

**Notes :**

1. Safety Plan to be included in tender bid, and will be part of evaluation.
2. Cable Jointer Certificate to be included in tender bid.
3. Safety Report for 2013 & 2014 to be submitted with tender.
4. Contractor shall provide photo ID of all key employees who will be working on the project, clearly indicating their Employment/FNPF number and Job Description.
5. Tender validity should be for six (6) months from date of submission.

## **HSE REQUIREMENTS**

The following documents are to be submitted with the Tender :

- 1). **Contractor HSE Specification** – it contains 10 clauses which contains the overall HSE requirements and the contractor needs to agree to this.
- 2). **Contractor HSE Plan** (Document HSE41C04)– The contractor shall fill in each part of the Plan.
- 3). The Contractor will list down all the plants and equipment to be used in the **Plant & Equipment Register** as well as chemicals in the **Chemical register**.
- 4). The **JSA & Risk Assessment** form will require the contractor to identify hazards which may not have been adequately addressed in FEA's existing procedures and outline proposed controls.

**FIRST SCHEDULE**

**A. SPECIAL CONDITIONS OF CONTRACT**

1. The works shall comprise the trenching, installation of ducts and cable (including reinstatement of footpaths, sealed roads and grass verge) as per drawings and specifications provided during the tender briefing and site visits.
2. Location of Works: Works shall be carried out in the greater Suva Area as per route drawings provided during the tender briefing and site visits.

Notes:

- (i) All Materials to be installed shall be provided by FEA
- (ii) Contractor shall provide all necessary tools, equipment, manpower with adequate Personnel Protective Equipment (PPE), for the execution of works.
- (iii) Route comprises sealed road, footpath, bridge and grass verge.
- (iv) Sub-seal comprises soapstone and existing utility services.

3. The Contract sum for the works shall be quoted in lump sum \$\_\_\_\_\_VIP and shall be payable at the completion of each 500m interval as follows:

<b>Phase</b>	<b>Description</b>	<b>Percentage payment</b>
1	Completion of 500m Route of Trenching and Installation of Ducts	30%
2	Completion of 500m route of Cable Pulling and upon positive cable test results	30%
3	Completion of Site reinstatement (footpaths, grass verge, road crossings, etc)	30%
4	Retention	10% to be released 6 months after the final completion of project pending zero defects.

4. Project Execution Timeframe:
  - a. Date of Commencement: next day within issuing of FEA Purchase Order
  - b. Rate of Practical Completion of Works: 500m route in 21 Calendar Days

4. For the purpose of supervising the contract on behalf of the Authority, references in the General Conditions to the Authority shall include the Unit Leader Transmission or his designated officer. The Project Manager shall be the Unit Leader Transmission, the Project Engineers and supervisions shall be any persons designated by the Unit Leader Transmission.
  
5. Insurance
  - (a) Contractor's risk \$500,000.
  - (b) Public Liability \$500,000.
  - (c) Worker's Compensation \$250,000.
  - (d) Or any additions as deemed necessary by FEA
  
6. Defects Liability period: 6 months
  
7. Liquidated damages of upto 10% applied at 1% per day shall be applicable on the project, any stage, or part thereof.
  
8. Retention Fund (refer Section E)
  - (a) Limit of retention fund : 10% of contract sum
  - (b) Nature of retention fund : cash
  - (c) Release of retention fund : Subject to no pending defect, and as per FEA Finance Policy.

## **SECOND SCHEDULE**

### **B. Specification for Transmission Power Cable Installation**

#### **1.0 General**

This specification covers the installation of 33kV Power Cable as per drawings and specifications provided during the site visit and under conditions of Contract attached herein.

#### **2.0 Scope of Work**

Work involved in this contract is broadly classified into three phases:

- i) Trenching, ducting and laying bedding sand
- ii) Laying of power cable with cable cover and Hep tape
- iii) Backfilling of trench including re-instatement

#### **2.1 Phase One – Trenching, ducting and laying bedding sand**

The first phase comprises of the following works:

- Excavation and Installation of ducts across roads and drive ways
- Trench excavation for the power cable.
- Laying bedding sand

Note – all ducting works is to be completed BEFORE excavation of grass verge. This is to ensure that trenches are kept open for a minimum duration. No use of heavy machinery such as diggers shall be permitted for excavations.

#### **2.2 Phase Two – Installation of power cable, cable cover and Hep Tape**

The second phase will involve the installation of power cables. This involves manually pulling the cable along the trench using rollers, and through ducts.

FEA will not allow mechanized pulling of cables to prevent unnecessary strain on the cables.

FEA will test each cable after installation to ensure cables are in good condition. While cables are stored on site, it will be the Contractor's

responsibility to ensure safekeeping of FEA assets.

The phase also involves coiling of cables in substation boundaries. All the work of phase two must be as per the specifications given in the drawings and it shall conform to all aspects of the standards outlined in the project documents.

Installation of Cable Location Markers at locations decided by the Project Engineer shall also be undertaken by the Contractor.

Contractor will also install 80mm HD PVC ducts throughout the cable route. This duct will house the Optic Fiber cable. At every 500m a Fiber-pit box will be installed as per the project drawings. All materials will be provided by FEA

Joint pits for power cable will be at locations marked on the project drawings, however this may change slightly during cable installation. The trench shall be 1.0m wide to 3m long in the jointing locations.

This work shall be carried out under direct supervision of FEA's designated officers, and is to be done during normal working hours and afterhours, as per the needs of the project. Work which will be carried outside normal working time will require obtaining FEA's approval and may be approved based on FEA's operations and availability of supervisors.

This phase shall be deemed complete once the cable has been tested healthy by FEA Technicians. In the event that the cable fails to pass the test, the Contractor shall be required to pay all costs associated with the location and repair of the damage/fault or replacement if necessary.

### 2.3 Phase Three – Backfilling of trenches & Re-instatement

This phase of the contract involves the backfilling of trenches.

Various works for this phase will be:

- i) apply suitable layer of sand bedding (to be supervised by FEA).
- ii) Backfill sand on top of cable to height as per drawing.

All materials (cable, sand and slab) are to be transported from FEA's Kinoya Depot to work site by the contractor.

The contractor is responsible for clearing the site of all unused excavated soil. The Contractor shall deliver all left over materials to FEA's Kinoya Depot

including un-utilized fine-sand.

All the works of phase three must be as per the specifications, and it shall conform with all aspects of the standards outlined in the "Standard Overhead Line Design and Construction Manual", guideline set up by FEA.

The contractor shall make good any ground that is excavated. Grass verge shall be neatly backfilled up to the ground level with no spill of excess backfill material to verges.

Concrete disturbed across driveways, bus-stops, footpaths etc shall be backfilled to 150mm from top, where concrete mix will need to be poured and levelled to match with existing surface.

Driveway crossing will need to be ducted. FEA will supply 150mm dia PVC HD pipes which will be laid across driveways. One ducts will be used for each single core power cables. Spare ducts provided by FEA at strategic places which will also be laid in the trenches. This trench will also be backfilled with suitable backfill material to level with road surface.

Trenching on sealed roads will require road seal cutter before digging to ensure nearby road surface does not get damaged. This portion will also require ducting as in driveway crossing.

Cabling across bridges is in the Contractor's scope. FEA will provide to the contractor suitable means to lay cables across bridge.

FEA will obtain FRA, WAF, TFL and other stakeholders approval prior to giving the go ahead to the Contractor for trenching works.

The Contractor shall submit a Traffic Management Plan (to suit each road condition) to FEA which FEA will submit to FRA for approval. Any changes to the TMP by FRA will need to be incorporated by the Contractor.

## C : CONTRACTOR REQUIREMENTS

1. **Tender Bid** – Contractor shall submit a firm lump sum bid.
2. **Site Visit** – Contractor shall participate in a site visit which is compulsory. Bids from tenderers who do not participate in the site visit shall be disqualified, at FEA’s sole discretion.
3. **Standards** – All construction work shall be in compliance with FEA Standards and Guidelines.
4. **HSE Compliance** – The tender bid shall include all requirements from the FEA HSE Contractor Safety Management System. These will be evaluated by the FEA’s HSE Unit. Tender bids with incomplete, unacceptable, or without the HSE requirements will not be considered for award.
5. **Safety Record** – Tender bid shall include a brief report on Safety performance over the last two years. The report shall include all incidents and accidents.
6. **Sub-contracting** – Subcontracting **shall not be permitted**, except where this is specifically presented in the tender bid, and only upon approval by FEA. Subcontractors shall be required to fulfil all requirements as if they were the contractor.
7. **Scope of works** - Work involved in this contract is broadly classified into three phases.
  - i) Trenching, ducting and laying bedding sand
  - ii) Laying of power cable with cable cover and Hep tape
  - iii) Backfilling of trench
  - iv) Site Restoration
8. **Contact** - Contractor shall have a valid postal address, Office phone/fax/e-mail contact. The Principal shall be available by mobile phone at any time.
9. **Work Program** - Contractor shall submit a work programme before starting of project. This shall be part of the contract. Work shall commence at least within seven (7) days after receiving an official FEA Local Purchase Order.
10. **Training** – Contractor shall ensure his employees have attended FEA Safety Manual Training at least once in the past 6 months, and records of this shall be submitted with the tender bid. In the event that the training has not been carried out, the Contractor shall ensure these training are carried **PRIOR** to induction for new project.
11. **Ground condition** – Contractors are to note that sub-soil comprises soapstone and could contain other services like Telecom Fiji Ltd, Water & Sewerage, etc. It will be the Contractors responsibility to liaise with relevant authorities to ensure damages to these services are avoided..
12. **Invoicing** – Contractor shall submit details of work completed to allow prompt approval



of invoice. The Contractor is to submit a progress report showing percentage completion of the project and obtain Project Engineers vetting of the same.

- 13. **Safety Induction** - A Safety induction must be conducted before start of power line construction work.
- 14. **Instruction to Commence Work** - Contractor shall NOT commence work on site unless an "Instruction to Commence Work" has been received from the Project Manager.
- 15. **Signboards** - One signboard (6'X 4') must be erected at the start of the works and one at the end of the works clearly stating :

**DANGER**

**PROJECT: POWERLINE CONSTRUCTION – [Description of project]**

**CONTRACTOR: .....**

**POWER LINE CONSTRUCTION WORK.**

**Driver please reduces speed.**  
**Pedestrians please use other footpath/side of road**

**THANKS**

This sign board shall not be hand written. Fonts should be appropriate size and utilise the full area of the signboard. Fonts shall be in black on a yellow-orange background. All signage shall be to FEA and FRA specifications and satisfaction.

- 16. **Accident Reporting** – All accidents and incidents shall be reported immediately to FEA using approved forms available in the FEA Safety Plan Template, or equivalent.
- 17. **Project Updates** - Contractor shall meet with FEA Project Manager, Project Engineer and Project Supervisor on a weekly basis to discuss project progress and bottlenecks. These meetings shall be minuted for records, and circulated to the appropriate stakeholders.
- 18. **Tidiness** – The Contractor shall maintain the worksite in a neat and tidy condition.
- 19. **Transportation of material** – The Contractor shall transport all materials from Kinoya Depot to work site except valve marker post which shall be picked directly from suppliers.
- 20. **Security** - Contractor shall be responsible for the safekeeping of all materials at work site, and will be required to pay for damage and/or loss.
- 21. **Damage to property** – The Contractor shall ensure that there is no damage to roadways, footpaths, drains, water-courses, properties and other services. The Contractor shall make good to the satisfaction to the owner any damage caused by the contractor.

22. **Portable signboards** - Portable signboards must be placed at 50m intervals.
23. **Traffic and Pedestrian Control** – The Contractor shall ensure that there is minimum disruption to the flow of traffic and pedestrian. FEA & FRA procedures on Traffic Control and Pedestrian Control shall be diligently exercised.
24. **Worksite protection** - Bollards/cone must be placed at 10m intervals.
25. **Barricades** - Open trench/pole-hole is to be barricaded on a full time basis by the Contractor.
26. **Jobsite Safety Assessment** - Contractor to carry out Jobsite Safety Assessment daily, and as and when required, and submit these to FEA on a weekly basis.
27. **Credit of surplus material** – The contractor shall transport and credit all unused materials to Kinoya Stores.
28. **Defects Rectification** – The contractor shall rectify all defects within seven (7) days as per contract.
29. **Project completion** – The contractor shall complete work on time as per contract.
30. **Project progress** – If the Contractor fails to proceed with the works with reasonable diligence or suspends the works or refuses to comply with the reasonable direction from FEA by reason of which the works are materially affected and any such default continues for a period of seven (7) days after the issue of written notice, FEA may itself call any other person to complete the works at the Contractor's risk and expense.
31. **Safe Work Procedure Training** - Contractor must have completed Distribution Safe Work Procedure training.



# **Fiji Electricity Authority**

## **Transmission Unit**

### **TENDER DOCUMENT**

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#### **D : FEA REQUIREMENT**

- FEA Project Supervisor shall obtain Road/footpath opening permits.
- FEA Project Engineer shall obtain clearance from Municipal Council, Fiji Roads Authority, Telecom Fiji Ltd, Water Supply Department, and Sewerage Department.
- FEA's HSE Unit shall vet Safety Plan submitted by Contractor and approve after queries clarified by Contractor.
- FEA Project Engineer shall ensure that any FEA underground mains on the jobsite is clearly located, marked and identified to the Contractor.
- FEA Project Engineer shall submit to the Project Manager all necessary approval documentation from Municipal Council, Telecom Fiji Ltd, Water Supply Department and Sewerage Department. Upon receipt of these approvals, and the approved Safety Plan, the Project Manager shall issue an "Instruction to Commence Work" to the Contractor.
- FEA Project Supervisor and Project Engineer shall carry out regular site inspections to ensure compliance with HSE requirements, and submit Safety Visit Reports of the visit.
- FEA Project Supervisor and Project Engineer shall issue Non-Conformance Report if required, and follow up for verification of implementation of Action Items arising out of the Non-Conformance Report.



**Fiji Electricity Authority**  
**Transmission Unit**  
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**GUIDELINES FOR EXECUTION OF WORKS**

To be provided during project briefing and site visit.

**Submission of Tenders**

**Two (2) hard copies** of the tender bids in sealed envelope shall be deposited in the tender box located at the Supply Chain Office at the FEA Head Office, 2 Marlow Street, Suva, Fiji.

**Courier charges for delivery of Tender Document must be paid by the bidders.**

**This tender closes at 4:00pm, on Wednesday 15<sup>th</sup> of April, 2015.**

Each tender shall be sealed in an envelope with:

The envelope bearing only the following marking:

**Tender- MR 52/2015 – Installation of 33kV Underground Cable Works between Vatuwaqa, Kinoya and Cunningham Substation**

The Secretary, Tender Committee  
Fiji Electricity Authority

Supply Chain Office

Private Mail Bag, Suva

**It must also indicate the name and address of the tenderer on the reverse of the envelope.**

**All late tenders, unmarked Envelopes and envelopes without bidder's name and address on the reverse of the envelope. (Bids via e-mail or fax will not be considered).**

For further information or clarification please contact our Supply Chain Office on phone **(+679) 3224360** or **(+679) 9991587**.