

# **NEPAL ELECTRICITY AUTHORITY**

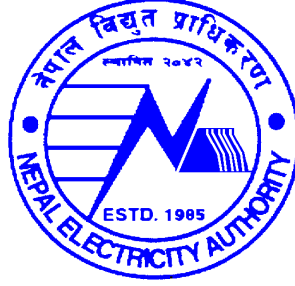
(An Undertaking of Government of Nepal)

Distribution and Consumer Services Directorate

Pokhara Regional Office

Tanahun Distribution Center

Chapaghat, Damauli



## **SEALED QUOTATION (SQ)**

CONTRACT ID NO: NEA-TDC-073/74-15(SQ)

## **SEALED QUOTATION DOCUMENT**

**FOR**

**EXTENSION/REHABILITATION OF LT/HT LINE AT DIFFERENT  
PLACES OF AABU MUNICIPALITY AND CHHIMKESHWORI V.D.C  
OF TANAHUN DCS**

**July, 2017**

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## Section II. Instructions to Bidders

<p><b>1. Scope of Works</b></p>	<p>The Purchaser stated in the Invitation for Quotation invites bids for the supply and delivery of the goods and related services as detailed in attached specifications, drawings and the bill of quantities provided herein. .</p>
<p><b>2. Eligible Bidder</b></p>	<p>This Invitation for Bids is open to all registered Contractors with qualifications as described below:</p> <ul style="list-style-type: none"> <li>a) Up to date Firm/Company Registration Certificate</li> <li>b) VAT and PAN Registration Certificates</li> <li>c) Tax Clearance Certificate</li> <li>d) Power of Attorney</li> <li>e) Other documents as needed</li> </ul>
<p><b>3. ONE BID PER BIDDER</b></p>	<ul style="list-style-type: none"> <li>f) Each Bidder shall submit only one quotation, A Bidder who submits more than one quotation shall cause all the quotations with the Bidder's participation to be disqualified.</li> </ul>
<p><b>4. Content of Quotation Form</b></p>	<p>The Quotation Form comprise the documents listed below:</p> <ul style="list-style-type: none"> <li>Invitation for Sealed Quotations</li> <li>Instructions to Bidders</li> <li>Sample Forms / Form of Agreement</li> <li>General Conditions of Contract (GCC)</li> <li>Schedule of Requirements</li> <li>Technical Specifications</li> <li>Drawings</li> </ul>
<p><b>5. Clarification</b></p>	<p>A prospective Contractor/Bidder may obtain clarification on the Quotation Form from the Purchaser.</p>
<p><b>6. Language of Quotation</b></p>	<p>All documents relating to the Quotation shall be in English or in Nepali.</p>
<p><b>7. Documents Comprising Quotation</b></p>	<p>The Quotation by the Bidder shall comprise the following:</p> <ul style="list-style-type: none"> <li>a. Quotation and Price Schedules</li> <li>b. Bid Security</li> <li>c. Schedule of Requirements</li> </ul>
<p><b>8. Quotation Prices</b></p>	<p>The Bidder shall indicate on the appropriate Price Schedule the unit prices (where applicable) and total price of the goods to be supplied under the contract.</p>

	<p>All duties, taxes and other levies payable by the Bidder under the contract shall be included in the rates, prices and total Bid Price submitted by the Bidder.</p> <p>Price quoted by the Bidder shall remain fixed and valid until completion of the Contract Performance and will not be subject to variation in any account.</p> <p><b>Price quoted by the bidder in BOQ shall be exclusive of VAT in both Labour as well as material cost.</b></p>
<b>9. Quotation Validity</b>	The Quotation shall remain valid for the period of 45 days after opening of the quotation.
<b>10. Quotation Security</b>	<p>The Bidder shall furnish a Security of NRs. 22,000 (Twenty two Thousand only). The Bid Security shall remain valid for a period of 75 days after opening of the quotation.</p> <p>The Security shall be in the form of cash voucher deposited in A/C Kumari Bank, Damauli A/C No. 1401524402182014 in the name of NEA, Tanahun Distribution Centre or a bank guarantee from any commercial bank in Nepal approved by Nepal Rastra Bank.</p>
<b>11. Format and Signing of Quotations</b>	The Quotation shall be typed or written in indelible ink and shall be signed by an authorized person. Any entries or amendments including alternations, additions or corrections made shall be initialled by the same authorized person.
<b>12. Sealing and Marking of Quotations</b>	The Bidder shall submit his Quotation in sealed envelopes. The envelope shall be addressed to the Purchaser specified in the Invitation for Quotation and shall bear the name and identification number of the quotation.
<b>13. Deadline for Submission of Quotations</b>	Quotations shall be delivered to the Purchaser at the address no later than the time and date specified in the Invitation for Quotation.
<b>14. Late Quotation</b>	Any Quotation received by the Purchaser after the deadline shall not be accepted and shall be returned unopened to the Bidder upon request.
<b>15. Modification And Withdrawal</b>	Quotations once submitted shall not be withdrawn or modified.
<b>16. Bid Opening</b>	<p>The Purchaser shall open the Quotations in the presence of the Bidders' representatives who choose to attend at the time and in the place as specified in the Invitation for Quotation..</p> <p>The Purchaser shall prepare and provide minutes of the opening including the information disclosed to those present.</p>

<p><b>17. Process to be Confidential</b></p>	<p>Information relating to the examination, evaluation and comparison of Quotations and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any efforts by the Bidder to influence the Purchaser in the Quotation evaluation, comparison or contract award decisions may result in rejection of Bidder's quotation.</p>
<p><b>18. EXAMINATION OF QUOTATIONS</b></p>	<p>Prior to the detailed evaluation of Quotations, the Purchaser shall determine whether each Quotation</p> <ul style="list-style-type: none"> <li>(a) meets the eligibility criteria defined in Clause 2;</li> <li>(b) has been properly signed;</li> <li>(c) is accompanied by the required securities; and</li> <li>(d) is substantially responsive to the requirements of the Bidding documents.</li> </ul>
<p><b>19. Evaluation and Comparison of Quotations</b></p>	<p>19.1 In evaluating the Quotations, the Purchaser shall determine for each Quotation the evaluated Bid Price by adjusting any corrections for errors. Quotations shall be checked by the Purchaser for any arithmetic errors. Errors shall be corrected by the Purchaser as follows:</p> <ul style="list-style-type: none"> <li>a. where there is a discrepancy between the amounts in figures and in words, the amount in words shall govern; and</li> <li>b. where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted shall govern</li> </ul> <p>19.2 If the Bidder does not accept the corrected amount, the Quotation shall be rejected and the Security pursuant to Clause 10 may be forfeited.</p>
<p><b>19. Award of Contract</b></p>	<p>The Purchaser shall decide the award of the contract, within 15 days of the opening of the quotation, to the Bidder whose Quotation is within the approved estimate and who has offered the lowest evaluated Bid Price, provided that such Bidder has been determined to be eligible in accordance with the provisions of Clauses 2.</p>
<p><b>20. Purchaser's Right to Accept or Reject</b></p>	<p>The Purchaser reserves the right to accept or reject any Quotation or to cancel the bidding process and reject all Quotations, at any time prior to the award of the contract, without assigning any reasons whatsoever and without thereby incurring any liability to the affected Bidder or Bidders.</p>
<p><b>22. Notification of Award and Signing of Agreement</b></p>	<p>22.1 The Bidder whose Quotation is accepted and all other participating bidders shall be notified of the award by the Purchaser. Within 7 days of receipt of the notification, the successful Bidder shall deliver</p>

	<p>the Performance Security pursuant to Clause 23 and sign the Agreement.</p> <p>22.3 Inability of the Bidder to make an Agreement within the above stated period shall result in cancellation of the Contract Award and forfeiture of the Bidder's Security, upon which the Contract shall then be awarded to the next successive successful Bidder.</p>
<b>23. Performance Security</b>	<p>The successful Bidder shall deliver to the Purchaser a Performance Security in cash or Bank Guarantee acceptable to the Purchaser equivalent to 5% of the Quotation amount. In case the quoted amount is less than 15% ,the successful bidder shall deliver additional performance Security amount equivalent to 50% of the amount below 15%.</p>

### Section III. Sample Forms of Bid, Eligibility Information, Letter of Acceptance and Agreement

#### Bid

We have examined the documents listed in Instruction to Bidders, Clause 4 and offer to execute the Works in conformity with the Contract for the sum of .....  
..... (in ..... words)  
..... (in figures) or such other sum as may be ascertained under the contract.

This bid shall remain binding until \_\_\_\_\_ [date]. This bid and your written acceptance of it shall constitute a binding contract between us.

We understand that the Employer is not bound to accept the lowest or any offer received for the Works.

Signature \_\_\_\_\_ Date: \_\_\_\_\_

Name : \_\_\_\_\_ Authorised to sign on behalf of  
(organisation name): \_\_\_\_\_

- 1.
2. Designation: \_\_\_\_\_
- 3.
- 4.
5. Office Stamp of the Organisation: \_\_\_\_\_

## **Eligibility Information**

### **1. Eligibility Requirements:**

All Bidders shall submit following documents as pre- requisites for eligibility:

- a. Up to date Registration Certificate:
- b. Pan Registration Certificate:
- c. Up to date Tax Returns/ Clearance:
- d. Power of Attorney:
- e. Place of registration:
- f. A written declaration made by the Bidder stating that the Bidder is not ineligible to participate in the bid; has no conflict of interest in the bid procurement proceedings and has not been punished for the profession or business related offence.

### **2. Evaluation and Qualification Criteria**

#### **a. Work Experience:**

- The Bidder shall include certificates from the end users validating that the Bidder has successfully completed construction of electrical works of similar size in last five years.

**Letter of Acceptance**

*[Letterhead of the Employer]*

Date: \_\_\_\_\_

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

This is to notify you that your Quotation (Bid) dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Invitation for Quotation]* for the Contract Price of *[insert the amount in Nepalese Rupees in numbers and words]* as corrected and modified<sup>1</sup> in accordance with the Instructions to *Bidders* is hereby accepted by our Agency.

You are hereby instructed to contact our office *[Office address]* to sign the formal agreement on *[date]* at *[time]*. As per the Instructions to *Bidders* you are also required to submit Performance Security, as specified in the Section VIII Sample Forms of Securities,, consisting of a Bank Guarantee in an approved format or cash deposit voucher in favour of the Employer in the Employer's Bank account *[enter account details]*.

*The Employer shall forfeit the bid security, in case you fail to furnish the Performance Security and to sign the contract.*

*Please convey our unconditional acceptance by signing on the original of this letter and submit the required Performance Security at the time of formal agreement.*

Authorized Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

\_\_\_\_\_

**Agreement**

This Agreement, made the [day] day of [month], [year] between [name and address of Employer] (hereinafter called "the Employer") and [name and address of contractor] (hereinafter called "the contractor") of the other part.

Whereas the Employer is desirous that the contractor execute [name and identification number of contract] (hereinafter called "the Works") and the Employer has accepted the bid for \_\_\_\_\_ [insert the amount in Nepalese Rupees in numbers and words] by the contractor for the execution and completion of such Works and the remedying of any defects therein.

Now this Agreement witnesseth as follows:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.

2. In consideration of the payments to be made by the Employer to the contractor as hereinafter mentioned, the contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.

3. The Employer hereby covenants to pay the contractor in consideration of the execution and completion of the Works and the remedying of defects wherein, 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 thereto have caused this Agreement to be executed the day and year first before written.

The Common Seal of \_\_\_\_\_  
was hereunto affixed in the presence of: \_\_\_\_\_

Signed, Sealed, and Delivered by the said \_\_\_\_\_  
in the presence of: \_\_\_\_\_

Binding Signature of Employer \_\_\_\_\_

Binding Signature of Contractor \_\_\_\_\_

## Section IV. General Conditions of Contract (GCC)

<p><b>1. Definitions</b></p>	<p>1.1 In this contract, the following terms shall be interpreted as indicated:</p> <p>"The Contract" means the agreement entered into between the Purchaser and the Contractor, as recorded in the Contract Form Signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein;</p> <p>"The Contract Price" means the price payable to the Contractor under the contract for the full and proper performance of its contractual obligation;</p> <p>"The Goods" means Equipment and related Accessories and spare-parts or any other materials which the Contractor is required to supply to the Purchaser under the contract;</p> <p>"Services" means services ancillary to the supply of the goods such as transportation and insurance including the installation, commissioning and the operational and maintenance training of the supplied equipment.</p> <p>"The Purchaser" means the procuring entity purchasing the goods;</p> <p>"The Contractor" means the organization supplying the goods and services under this contract.</p>
<p><b>2. Technical Specification</b></p>	<p>2.1 The goods supplied under this contract shall conform to the standards mentioned in the Technical Specification.</p>
<p><b>3. Patent Right</b></p>	<p>3.1 The Contractor shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of goods or any part thereof in the Purchaser's country.</p>
<p><b>4. Performance Security</b></p>	<p>4.1 Within seven days (7) of receipt of award of contract from the Purchaser the successful Bidder shall furnish the performance security in accordance with the Sub - Clause 4.3 of the Conditions of Contract in the Performance Security Form provided in the Bidding Documents.</p> <p>4.2 Failure of the successful Contractor to comply with the requirement of Sub - clause 4.1 shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the Purchaser may make the award to the next lowest Contractor or call for new sealed quotations.</p>
	<p>4.3 The performance security will be as follows:</p>

	<p>The amount of performance security as a percentage of the contract price shall be five (5) percent of the Sealed Quotation Price in the currency of the Sealed Quotation price.</p> <p>4.4 The validity of Performance Security shall be one (1) year after the delivery of the Goods and the issue of final acceptance certificate to the Contractors. The Contractor shall promptly extend the validity suitably to cover agreed extension of the warranty period of the supplied goods.</p> <p>4.5 The performance security shall be released within 28 days of completion of warranty period and upon submission of claim by the Contractor.</p>
<b>5. Inspection and Tests</b>	<p>5.1 The Purchaser or its Representative shall have the right to inspect and/or test the goods to confirm their conformity to the Technical Specification and the quality of performance before/after the supply and delivery of good to the Purchaser's premises.</p>
<b>6. Packing</b>	<p>6.1 The Contractor shall provide such packing of the goods as is required to prevent their damage or deterioration during transmit to their final destination as indicated in the contract.</p> <p>6.2 The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage.</p> <p>6.3 The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided in accordance with international standard and practice.</p>
<b>7. Delivery of Goods</b>	<p>7.1 Delivery of the goods shall be made by the Contractor in accordance with the terms specified by the Purchaser in its Schedule of Requirements.</p> <p>7.2 The terms "EXW", "FOB", "CIF", "CIP" etc., shall be governed by the rules prescribed in the current edition of INCOTERMS published by the International Chamber of Commerce (ICC), Paris.</p>
<b>8. Insurance</b>	<p>8.1 The goods supplied under the contract shall be fully insured in the currency of the Sealed Quotation price against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified.</p>

	<p>8.2 Where delivery of the goods is required by the Purchaser on a CIF or CIP basis to a specified destination, the Contractor shall arrange and pay for insurance, naming the Purchaser as the beneficiary and the Contractor shall be required to meet all transport and storage expenses until delivery.</p>
<b>9. Warranty</b>	<p>9.1 The Contractor warrants that all the goods supplied under the contract shall fully comply with the specification laid down in the contract.</p> <p>9.2 The warranty shall remain valid for one year after the goods have been delivered to the final destination indicated in the contract, and accepted by the Purchaser after installation and commissioning of equipment by the Contractor.</p> <p>9.3 The Purchaser shall promptly notify the Contractor in writing of any claims arising under this warranty.</p> <p>9.4 Upon receipt of such notice, the Contractor shall, with all reasonable speed, replace the defective goods without cost to the Purchaser. The Contractor will be entitled to remove, at its own risk and cost, the defective goods.</p>
<b>10. Payment</b>	<p>10.1 Payment shall be made in the currency in which the contract price has been stated in the Contractor's Sealed Quotation.</p> <p>10.2 Payment of the goods supplied from within Nepal shall be made in Nepali Rupees after the delivery of goods.</p>
<b>11. Prices</b>	<p>11.1 Prices charged by the Contractor for goods delivered under the contract shall not vary from the prices quoted by the Contractor in its sealed quotation.</p>
<b>12. Changed Order</b>	<p>12.1 Where the Purchaser desires to make changes in <b>Schedule of Requirement</b>, it shall not exceed more than 15 percent.</p>
<b>13. Liquidated Damages</b>	<p>13.1 If the Contractor fails to deliver any or all of the goods within the time period specified in the contract, the Purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as liquidated damages, a sum equivalent to 0.05 percent of the contract price of delayed goods for each day of delay until actual delivery, up to a maximum deduction of 10 percent of the delayed goods' contract price. Once the maximum is reached, the Purchaser may consider termination of the contract.</p>
<b>14. Resolution of</b>	<p>14.1 If any dispute or difference of any kind whatsoever</p>

<b>Disputes</b>	<p>shall arise between the Purchaser and the Contractor in connection with or arising out of the Contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.</p> <p>14.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or Contractor may give notice to the other party of it's intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given.</p> <p>14.2.1 Any dispute or difference in respect of such a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract.</p> <p>14.2.2 Arbitration proceedings shall be conducted in accordance with in accordance with the rules of Nepal Council of Arbitration (NEPCA).</p> <p>14.3 Notwithstanding any reference to arbitration herein,  a. the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and  b. the Purchaser shall pay the Contractor any monies due the Contractor.</p>
<b>15. Governing Language</b>	15.1 The Governing Language shall be: Nepali or English
<b>16. Applicable Law</b>	16.1 The applicable law shall be Laws of Nepal.
<b>17. Notices</b>	<p>17.1 Purchaser's address for notice purposes: Nepal Electricity Authority, Tanahun Distribution Centre, Damauli</p> <p>17.2 Contractor's address for notice purposes:  .....</p>
<b>18. Taxes and Duties</b>	18.1 The Contractor shall be entirely responsible for all taxes, duties, licence fees and other such levies imposed by the GON.
<b>19. Operation, Maintenance and Spare-parts Manuals</b>	19.1 The successful Contractor shall supply 2 copies of manufacturer's operation, maintenance and spare-part manuals of the goods (Equipment).

<p><b>20. Conduct of Contractors</b></p>	<p>20.1 The Contractor shall be responsible to fulfil his obligations as per the requirement of the Contract Agreement, Bidding documents, GoN's Procurement Act and Regulations.</p> <p>20.2 The Contractor shall not carry out or cause to carryout the following acts with an intention to influence the implementation of the procurement process or the procurement agreement :</p> <ol style="list-style-type: none"> <li>a. give or propose improper inducement directly or indirectly,</li> <li>b. distortion or misrepresentation of facts</li> <li>c. engaging or being involved in corrupt or fraudulent practice</li> <li>d. interference in participation of other prospective bidders.</li> <li>e. coercion or threatening directly or indirectly to impair or harm, any party or the property of the party involved in the procurement proceedings,</li> <li>f. collusive practice among bidders before or after submission of bids for distribution of works among bidders or fixing artificial/uncompetitive bid price with an intention to deprive the Purchaser the benefit of open competitive bid price..</li> <li>g. contacting the Purchaser with an intention to influence the Purchaser with regards to the bid or interference of any kind in examination and evaluation of the bids during the period after opening of bids up to the notification of award of contract</li> </ol>
<p><b>21. Blacklisting Contractor</b></p>	<p>21.1 Without prejudice to any right of the Purchaser under this Contract, the GoN, Public Procurement and Monitoring Office(PPMO) may blacklist a Contractor for his conduct up to three years on the following grounds and seriousness of the act committed by the Contractor:</p> <ol style="list-style-type: none"> <li>a. if it is proved that the Contractor committed acts pursuant to the Sub - clause 20.2,</li> <li>b. if the Contractor fails to sign an agreement pursuant to ITB Clause 22,</li> <li>c. if it is proved later that the Contractor had committed substantial defect in implementation of the contract or had not substantially fulfilled his obligations under the contract or the completed work is not of the specified quality as per the contract ,</li> <li>d. if convicted by a court of law in a criminal offence which disqualifies the Contractor from participating in the contract.</li> </ol> <p>21.2 A Contractor declared blacklisted and ineligible by the GON shall be ineligible to bid for a contract.</p>

## Section V. Schedule of Requirements

**NEPAL ELECTRICITY AUTHORITY**  
**Distribution and Consumer Services Directorate**  
**Tanahun Distribution Center**  
**Damauli**

Sealed Quotation No.: NEA-TDC-2073/074-15 (SQ)

Job: Extension/Rehabilitation of LT/HT line at Different Places of Aabu Municipality and Chhimkeshwori V.D.C of Tanahun DCS.

**Delivery Schedule Required By NEA:** The complete work including supply and delivery shall be completed within the calendar days specified below from the date of signing the contract agreement.

**Work Completion Period:** 180 Days

**Name of the Bidder:**  
Authorized Signature of the Bidder

**Company Seal:**  
Date:

## Section VI. Technical Specification

### A. Electrical Works

#### 1. General

- 1.1 These specifications together with the Construction Standards shall govern the performance of the Works and shall be the basis for inspection and acceptance of the Works by the NEA.
- 1.2 These specifications and the Construction Standards shall be considered as mutually inclusive, and the conditions stated in each shall supplement the other as appropriate.
- 1.1 All these specifications shall be followed at all times by the Contractor unless specifically accepted in writing by the NEA, or unless some aspects of the work covered by these specifications are not required by the scope of work.

#### 2. Route of Circuits

- 2.1 The line routes shown on line route drawings are provisional and subject to finalization by the Contractor. To the greatest extent practicable, all overhead circuits should be located along streets or traveled ways ordained by the Village Development Committee or required authority as public property, except as required for service drops and circuits to individual consumers.
- 2.2 To the greatest extent practicable, all facilities should be located on public property, and in no case shall private property be occupied unless specifically authorized by the NEA.

#### 3. Surveys and Staking

- 3.1 All structures should be located at the outer limits of public property along streets or travelled ways. Structures should also be located along streets at property lines of adjacent private property. Structures and stays running parallel or perpendicular to the line route shall not block portions of streets, travelled ways, drives, passages, or gates.
- 3.2 All structures shall be so located as to reduce, to the greatest extent practicable, obstacles to pedestrian and vehicular traffic.
- 3.3 Where underground facilities are indicated by surface conditions, or where such facilities can be located, structures and stays shall be so located as to avoid conflict with such facilities during construction.
- 3.4 All structure and stay lead locations shall be staked. At points of intersection (PI) of tangent line sections, steel rebar stakes shall be used to locate the PI. A minimum of two (2) side sightings will be made at each PI to permit re-location of PI in the event of stake removal. All structure locations in tangent line sections shall be staked.
- 3.5 All distances between structures, and other necessary measurements of length, shall be measured to accuracy of 0.1 meter and all angles shall be determined by transit to an accuracy of 0.1 decimal degree. All elevations shall be measured to an accuracy of 0.1 meter by means acceptable to the NEA.
- 3.6 All measuring and staking activity shall be accomplished by personnel with experience in survey procedures; and standard survey equipment acceptable to the NEA, shall be used to perform the survey work. Field survey notes covering all survey work shall be produced and maintained and shall be returned to the NEA at the time of submission of final PCS report. The format of proposed survey notes shall be submitted to the NEA for approval.

- 3.7 Survey work shall include centerline and structure location and staking; determination of overhead and side clearings of other structures, wires, and obstacles; area surveys and plotting; and centerline profiles of terrain; as directed by the NEA.

#### **4. Material Storage**

- 4.1 The Contractor shall be responsible for storage of all materials and equipment delivered by him for the work; and security of materials. The Contractor shall manage all labor, equipment, and vehicles to load and transport said materials and equipment to the worksites.

#### **4.2 Worksite**

- (a) Extended storage of materials along the routes of lines will not be permitted.
- (b) Conductor reels may be spotted at the worksites for a short period prior to installation provided that crating and reel lagging are intact to protect the items. Poles may be spotted at structure locations for short periods prior to setting.
- (c) All poles, and conductor placed at the worksites shall be located so that the items are not subject to damage and do not impede pedestrian or vehicular traffic.
- (d) Any damage caused by imprudent placement of equipment and materials by the Contractor at the worksites shall be corrected by the Contractor, in a manner acceptable to the NEA, at the Contractor's cost.

#### **4.3 Contractor's Storage Facility**

The Contractor shall be financially responsible for the secure and proper storage of materials, prior to installation of the materials and equipment, to prevent loss or damage to any materials. However Contractor may use NEA sub-stations premises subject to approval of concern NEA/Substation Authorities.

### **5. Poles and Cross Arms**

#### **5.1 POLE NUMBERING**

Poles and structures shall be numbered in accordance with a numbering system provided by NEA. Each pole shall be marked permanently through template with the assigned number.

#### **5.2 Pole Framing**

Pole and structures shall generally be framed in accordance with Construction Standards and the construction SDS. Where special framing requirements are necessary, the Site Engineer or Engineer shall provide framing instructions for the specific structure.

Each cross-arm shall be attached to the pole by a pole clamp or by machined bolts of sufficient length to pass completely through the holes provided on the pole and cross-arms and receive their full complement of nuts.

Bolts of proper length shall be used. Excess nuts shall not be used to make use of a bolt, which would otherwise be too long. The end of a machined bolt projecting more than 3 centimeters beyond the nut shall be cut off to a length of 2 centimeters beyond the nut. Each bolt, when installed, shall have its full complement of nuts.

Washers shall be used where specified in these standards. For wooden pole, bolted connection through wood members should be drawn tight to allow for shrinkage of wood. Bolts should be pulled up so that the wood is compressed but not so tight to

break the wood fibers. Fiber breaks on the surface of the pole increases probability of decay.

During the erection work at the field there may be necessity to modify galvanized steel hardware and may have to be drilled, reamed, filed or cut. Under such a condition the area of the steel exposed, after these modifications, shall be coated with a zinc-rich paint to protect the steel from corrosion.

### **5.3 Excavation**

All excavations made for the installation, or demolition, of facilities shall be accomplished in a timely manner according to the scheduled installation. Required excavations shall be opened, material installed, and backfill placed, as specified, in a continuing operation to the greatest extent practicable.

Any excavation left open during discontinuous construction, which is accessible to the public or along public thoroughfare, shall be covered or barricaded, and marked by suitable visual means, to prevent a public hazard.

Excavations shall be properly located and sized for the intended use. Pole and stay plate/ anchor excavations shall be correctly sized to retain undisturbed soil to the greatest extent consistent with the means of excavation. Pole holes shall be made by power-driven auger or by manual methods; power-driven shovel equipment shall not be used. Pole holes shall be excavated to the specified depth with no tolerance shallow and tolerance of ten (10) centimeters deep. The bottom of pole holes shall be undisturbed soil, gravel or rock. Stay plate holes shall be excavated by manual methods to specified depth with no disturbed soil in the direction of the anchor rod.

All excavations shall be backfilled with excavated material, or as specified for the installation. Backfill shall be free of foreign materials and shall be well tamped with excess backfill graded over the excavated area to prevent depressions resulting from eventual natural compaction. The Contractor if so directed by NEA shall remove large amounts of excess backfill from the site. If so directed by NEA, the Contractor shall provide suitable backfill materials for excavations where existing removed materials is insufficient, or inappropriate, to provide suitable grading of the excavated area.

### **5.4 Pole Setting**

Poles shall be set in accordance with the appropriate Sections of the Construction Standards.

Each pole shall be assigned a unique construction number at the time of structure staking for preliminary identification and preparation of SDS.

Pole holes shall be dug large enough in diameter to admit a tamping bar all around the periphery of the pole and shall have a uniform dimension as per the type of pole used at the top and bottom. Poles shall be planted in the ground to the depth specified in construction. Drawings before planting a pole, the bottom of the hole made for planting the pole, shall be cleaned of free soil and firmly tamped, to prevent the hole from settling.

### **5.5** The stability of a pole, particularly a pole without stay, is greatly influenced by the size of the pole hole, the nature of the soil and the care exercised in back filling and tamping. Two active hand tampers and one slow shovel shall result in good compaction.

Poles shall be set to stand perpendicular except at terminals, angles and other points of excessive strain where they shall be given a rake not to exceed 10 centimeters against the direction of strain. Poles located at the sides of banks or other locations,

where washouts may occur, shall be protected by suitable cribbing, or shall be referred to the Engineer for recommended action.

After the pole is in position and the hole is back filled and tamped, soil shall be piled and packed firmly around the pole. Pole setting shall be inspected prior to acceptance and any back fills that have sunk shall be refilled.

Where it is necessary to set poles at locations where the soil has very low bearing value, or in swampy conditions, a pole may be fitted with a bog shoe in accordance with construction drawings the engineer may specify that type of construction.

Poles located in shallow riverbeds shall be protected by gabions as designated by the Site Engineer or Engineer. Gabions should be approximately 2 meters x 1 meter x 1 meter. Four such gabions are required for each pole.

Set pole and pour 860 mm diameter foundation as per construction standard construction drawing. Level areas around pole and set gabions in pattern shown in construction drawing. It is important to lace adjacent gabions together along the perimeter of all contact surfaces. Fill gabions with hard, durable, clean stone, 100 mm to 200 mm in size in three layers. Install two connecting wires at each layer. Lace gabion lids securely making certain all edges are closed. Fill void between pole and gabion with hard, durable, clean rock 200 mm minimum size.

## **6. STAYS**

- 6.1 Stay leads specified in construction documents are defined as the horizontal distance from the centerline of the pole at ground line to the point where the anchor rod should enter the ground assuming the ground to be level. For the correction in stay leads for uneven ground see construction drawing.

The Engineer, upon request, may designate the actual location of stay anchor rods on slope of hills. The stay stake indicates the point where the anchor rod enters the ground. The anchor hole shall be dug accordingly.

The attachment of one stay shall not overlap that of another stay when 2 or more stays are carried to a pole or anchor. Each shall be entirely independent of the other. This does not prevent the use of multiple eye rods for nuts designed for such use.

All stays to be installed on a pole line shall be placed and drawn reasonably taut before the conductors are tensioned. After the conductors are tensioned and sagged to their final position, the stays shall be carefully inspected to see that each is carrying its share of the load on the pole as intended. If multiple stays are not carrying equal strain, the slack stay shall be pulled up until it is sharing load as intended.

Stay anchors must be installed full depth and set to pull against undisturbed soil to develop full tension. An anchor not properly installed will move and allow movement of the top of the pole, thus slacking the conductors. Stay anchors installed in soft or unstable earth shall be placed at specified depth and back filled with 5 cm. maximum size crushed stone placed to a depth of 1 meter from the bottom of the pole.

### **6.2 Installation of Stays**

Where stays are installed on a line angle structure, line of stay shall bisect the outside line angle.

The span of stay extending between poles shall not be greater than 60 meter.

Anchor and anchor rods shall be set so that the axis of the rod and line of stay shall be straight. The portion of the anchor rod above the ground shall not be bent at an angle to connect a stay wire. If this occurs, anchor and anchor rod shall be reset. The

anchor rod shall not be exposed for more than 15 centimeters above the ground after the anchor is set.

If gravel back fill is required to set anchor in soft or unstable soil, as per construction drawing, the Contractor will have to carry out the gravel back fill as directed by Engineer.

If a stay is installed on a pole where low voltage conductor is dead ended or double dead ended and extends past stay, a piece of plastic hose slit along the length shall be placed over the stay wire extending from the upper stay attachment to 200 mm below lowest low voltage conductor. After installation, the hose shall be wrapped with plastic tape and the hose shall be secured to the upper stay bolt with tie wire.

### **6.3 Stay Insulators**

Stay insulators shall be installed on all stays in accordance with the construction drawings.

## **7. Conductor**

Aluminum Conductor Steel Reinforced (ACSR) conductor shall be used for 11,0.4/0.23 kV overhead lines.

### **7.1 Sagging**

Conductors shall be sagged in accordance with the sag chart specified by these specifications.

The importance of careful sagging of conductors cannot be over emphasized. Conductors have definite characteristic that control their behavior resulting from changes of temperature, wind speed and additional load due to ice or wet snow.

Conductors must not be sagged too tightly (less than specified sag) as unspecified extra tensions may result in failure of conductor structure.

Conductors sagged too loosely (more than specified sag) may contact adjacent conductors hardware or any structure. Excess sag can reduce clearance beneath the line with the ground to the point of danger.

### **7.2 Sag Charts**

Unless otherwise noted, all sag charts are calculated on the basis of 35 kg/m<sup>2</sup> wind pressure. Sag is always measured vertically, without wind, when conductors are being installed or re-sagged.

Unless otherwise specified by the Site Engineer or Engineer for a specific condition, initial or stringing sag shall be applied to the installation of all new unstressed conductors. The initial sag is always less than the final sag. The most practical method of obtaining the correct sag is by sighting between two adjacent structures. Choose the structure, which is reasonably near the same elevation

Sags for the various temperatures shall be furnished by the Engineer in a table form for spans not covered by the sag chart.

In order to ascertain the sag for a given stringing temperature, select the point corresponding to the proper temperature on the scale on the left-hand side of the sag chart. Lay a straight edge so that it passes through this point and the point of the center scale representing the length of span to be sagged. The straight edge will then indicate the proper stringing sag on the right-hand scale. Interpolate if the temperature of span is not exactly the same as designated on the chart. The low voltage neutral conductor shall be sagged with the same sag as the low voltage phase conductor. If the low voltage conductor, as a group, has less design sag than

the high voltage phase conductor installed above it, the low voltage conductor, as a group, shall be installed to the same sag as the high voltage conductors installed above. The sag of pre stressed conductors such as installed with a tensioning machine shall be specified by the Engineer for the job.

### **7.3 Stringing**

All cable grip used for the installation of conductors shall be of the type designed to prevent injury to the conductor.

Attach targets to each structure at a distance below each point of the support of conductor equal to the required sag. Sight from one target to the other. The line of sight between targets may be horizontal or inclined. Draw the conductor up to the proper sag, which will be reached when its lowest point will be in line with the target.

Where terrain and/or length of span is such that the targets would fall below the ground line, the difference in elevation between the lower conductor attachment and the lowest point of sag, sag below lowest support will be furnished by the engineer in the tabular form.

The dynamometers and similar apparatus shall be used for tensioning of conductor to obtain appropriate sagging of conductors. Dynamometer shall be used only when the sight method is not feasible. Dynamometer shall be checked for accuracy before using.

For stringing of ACSR conductors of all sizes, stringing rollers or roller shall be used to support the conductor as it is pulled out and sagged. Stringing rollers shall be used regardless of size of aluminum conductors, bare or covered.

Stringing rollers shall be suspended at each insulator support position so that the conductor shall roll smoothly over the roller-protecting conductor from any physical damage.

Stringing sheaves shall have a diameter at least 20 times the conductor diameter and so finished as to prevent damage of any kind to the conductor as it is pulled through the sheaves.

Conductor drum shall be located at a sufficient distance from the first structure to avoid excessive bending of the conductor over the sheaves and excessive downward loading on the cross-arms.

Attention shall be paid to the fact that all sag charts contained herein for ACSR conductors are calculated on the basis of non pre-stressed conductor. For this reason, at no time during the stringing or sagging operation, shall conductors of this type be pulled to sag, which are less than those shown by the charts.

Special care shall be taken at all times to prevent the conductor from becoming kinked, twisted or abraded in any manner. Where it is necessary to drag conductors on the ground, the conductors shall be protected by covering all stones or other objects, which might damage the conductor with boughs or trees or suitable pieces of lumber. These requirements are especially important when ACSR conductor is being handled on river crossing spans. Floats with rollers shall be used to prevent the conductor from dragging along the river bottom.

In stringing conductors across highways, the conductors shall be fully protected from passing vehicles by use of temporary guard structures.

### **7.4. Damaged Conductor**

Damaged conductors shall be repaired by using a repair sleeve provided that no more than 2 strands of the outer aluminum layer are damaged and further provided that none of the sleeve core strands are damaged. For a conductor damaged in

excess of the above conditions, the damaged section of the conductor shall be cut out and a tension splice installed.

When cutting out damaged section of conductor, no more than 1 tension splice shall be permitted in a span and no splice is made within 8 meters of an insulator attachment.

#### **7.5 Sag Error**

Sag error shall not exceed  $\pm 40$  mm from the sag defined by the sag chart.

#### **7.6. Conductor Attachment**

Conductors shall be secured to pin insulators with pre-formed conductor ties or with tie wire. Insulator ties, except at jumper supports in structures, shall be made with pre-formed ties when available.

Conductors shall be connected to dead end assemblies with tension set.

#### **7.7 Line Splices for Tensioning and Looping**

Cleaned and polished contact surfaces are necessary to make conductor splices so that it shall remain free from trouble. Great care shall be taken to completely clean the strands of aluminum conductor. The splicing sleeve must be centered over the conductor ends before compressing to make a splice of required strength.

Appropriate sleeve shall be used for splicing ACSR conductors prior to installation. The outer strands of aluminum shall be carefully cleaned with a wire brush to remove all foreign matter till the aluminum shines brightly. The cleaning applies to both new and old conductors. The manufacturer pre-filled with inhibitor compound supplies splicing sleeves for aluminum conductor.

Splices in line conductors shall be so located that the end of the splicing sleeve is at least 30 cm from the end of a suspension or dead end clamp. Non-tension loops, such as between dead ends, shall be spliced with a connector when the conductors are of same metal and size.

#### **7.8 Connectors**

Cleaned and polished contact surfaces are necessary to make electrical connections that will be free from trouble.

Tap connectors are supplied by manufacturers pre-filled with inhibitor compound. Excess inhibitor compound shall not to be removed but it shall be wiped over the connector as a moisture seal. Connectors shall not be covered or taped.

Compression connectors shall be located in such a manner that there shall be at least 30 cm of conductor between the end of the connector and the end of a dead end

Connectors shall be installed on non-tensioned portion of the conductor such as loops in preference to the conductor in the span.

Connectors installed on conductor shall be located in a span adjacent to the crossing rather than the crossing span when practicable.

Aluminum compression connectors, pre-filled with inhibitor compound, shall be compressed on the cleaned area of aluminum conductor. Where necessary, inhibitor compound shall be applied to the cleaned conductor and connector before assembly.

Aluminum compression connectors shall be used for connecting aluminum-to-aluminum conductors.

#### **7.9 Conductor Accessories**

##### **Pre-Formed Ties and Grips**

Taps for jumpers and services shall not be made over the legs of ties or dead end grips.

#### **Pin Insulator Ties**

Pin insulator ties are of 2 types:

- a. With single top grooves: Single top ties may be used to turn line angles to 7 degrees where single insulators are permitted. Please refer construction drawing for specific applications.
- b. With side grooves with specific size of ties for specific conductor in each tie style: Specific usage is dictated by insulator pin loading and use of single insulators as specified in construction drawing.

#### **Shackle Insulator Ties**

Shackle insulator ties are furnished in one type with specific size of ties for specific conductor. Shackle ties may be used to turn line angles at 20 degree. At the line angles, the conductor shall be located on the side of the vertically installed shackle insulator that causes the conductor to be forced against the shackle insulator. Angle loading shall not be imposed on the ties itself.

#### **Preformed Stay Wire Binder**

Preformed stay wire binder for stay wire are furnished as per construction drawing.

Preformed stay wire binder are right hand lay. Preformed stay wire binder may be removed and replaced up to 3 times, when initially installed, to permit adjustment of stay tension.

When applying ties or grips the manufacturer's identification tag and color coding shall be checked to insure that the tie or grip is the right unit specified for application on the specific conductor or wire strand.

Perform for stay wire are furnished with 2 crossover markings. When applying preform on hardware, the grip shall be installed using the crossover point closest to the loop of the grip.

#### **Compression Fittings**

Full-tension conductor splices and repair sleeves are furnished for all conductors to be installed.

##### **a. Full Tension Conductor Splice**

Full-tension spliced for ACSR conductor is provided in a 2/1-piece unit. Full tension conductor splices will develop full conductivity of the conductor and a minimum of 95% of the rated conductor breaking strength. Please see construction drawing for splicing instructions.

##### **b. Repair Sleeves**

Conductor repair sleeves are furnished for all conductors to be used to restore the rated current carrying capacity of conductors with broken strands. Repair splices have no tension rating.

### **7.10 Line Construction**

#### **Attachments to Poles**

Boltholes are provided on poles for cross-arms, cross-arm braces and stay bolts.

#### **Conductor Ties**

Pre-formed ties and grips shall be used for attaching conductors to structures when available.

If pre-formed materials are not available, the wire shall be soft conductor so that when made up, the tie wire will bind the conductor tightly. No tie wire shall be used for a second time.

Tie wire shall be of the same metal as that of the bare conductor to which the tie is applied.

#### **Conductor Support**

The conductor supports on straight lines shall be carried on the top wire groove of the pin insulator. Conductors shall be attached to the side conductor groove of pin insulator on the outside of angles so that transverse conductor tension will tend to hold the conductor in the insulator groove.

Conductor ties shall not hold a conductor on the insulator when uplift exists. If uplift is found, it is required to consult with the Site Engineer or the Engineer to determine remedial action to be taken.

#### **8.11 Pole Wiring**

All taps or connections passing from one level to another on the pole shall, as far as possible, be vertical. Connections shall have sufficient length so that the line conductors are not moved from normal positions and normal movement is not restricted. Connections shall have at least 30 centimeters clearance from other conductors. Any connection carried from one side of the pole to the other side shall be supported on pin insulators.

### **9. Installation Criteria**

9.1 The line alignment should be as straight as possible to minimize requirements for stays. The basic span shall be maintained within the following limits:-

Low voltage and composite line:

<b>S.No.</b>	<b>No. of wire</b>	<b>Span in meter</b>
<b>1.</b>	4 wire	35-40
<b>2.</b>	3 wire	40-45
<b>3.</b>	2 wire	45-50

9.2 The entire construction works shall be performed as per the construction units specified. Whenever the construction unit does not cover any specific activity, the Contractor and the CRED shall mutually settle the cost as per the man-hour involvement for the same and according to the labor rate quoted by the Contractor in his Bid.

9.3 Detailed schedules of material to be used are provided in each structure drawing of the construction standards. It shall be the responsibility of the Contractor to judge the appropriateness of the listed material according to the site conditions. If there is any need for addition/reduction or deviation from the listed material size/quantity, the Contractor shall ask the CRED for the approval of the same.

9.4 All types of line clearances shall be maintained as per the construction standards provided to the Contractor. Deviations from the standards may be allowed only for unique or special conditions.

9.5 Safety rules of the NEA shall be strictly observed at all times by the CRED and the Contractor and their personnel. Special care shall be taken to maintain the optimum conductor sag to provide adequate safety to the construction and the property or people.

10.6 All fastenings (e.g. preforms, nut bolts, stays and the like) shall be so installed that the constructed line components shall not fail to remain within the safety margin while maximum working load is applied.

10.7 If the Contractor requires clarification of any construction standard or unit or he feels any doubt in his interpretation of construction activities he should clarify the points with the CRED in writing and the decision thus made shall be valid for further work.

9.8 HV Insulators: The Contractor shall use HV pin insulators in the alignment of the line where the break angle does not exceed the limits provided hereafter,

S.No.	Conductor size in mm <sup>2</sup>	Minimum break angle in degrees
1.	100 (Dog)	7
2.	50 (Rabbit)	15.5
3.	30 (Weasel)	24.5

In the case where the break angle exceeds the above values the Contractor shall make dead end at the angle structure and use disc insulator fittings.

#### 10. Installation of Stays

10.1 The Contractor, in general, shall install at least one stay for the supports in the following cases

- (a) Dead end structure
- (b) Tee-off (Tap) structure

10.2 Stay may not be installed in the following conditions

HV Line (33, 11 kV) with 11 m Pole a) - Conductor 3x100 mm<sup>2</sup>

- Span 75 m (max)
- Break angle: 4 deg.

b) - Conductor 3x50 mm<sup>2</sup>

- Span 75 m (max)
  - Break angle: 5.5 deg.
- c) - Conductor 3x30 mm<sup>2</sup>
- Span 75 m (max)
  - Break angle: 6.5 deg.

Composite (HV +LV) line with 11 m pole a) - Conductor 3x100 mm<sup>2</sup> HV; 3x50 mm<sup>2</sup>+30 mm<sup>2</sup> LV

- Span 40 m (max)
  - Break angle : 2 deg.
- b) - Conductor 3x50 mm<sup>2</sup> HV; 3x30 mm<sup>2</sup>+1x30 mm<sup>2</sup> LV
- Span 50 m (max)
  - Break angle: 2.5 deg.

For conditions different from the above, the Contractor shall provide calculations showing the number of stays necessary and get approval from NEA prior to installation.

#### 11. 400/230 Volt Low Voltage Circuits

##### General Instructions

##### 11.1 General

Bare wire 400/230 Volt circuits shall be supported on shackle insulator with D-iron. Generally, shackle insulator with D-iron shall be placed on the same side of the pole

throughout the length of the line. Care shall be taken to see that shackle insulator with D-iron shall be mounted on that side of the pole from where most of the house service connection shall be extended.

Spacing between two conductors for low voltage circuit shall be 305 mm.

The three low voltage phase conductor shall be located in descending order from the top of the pole with Red (R) on the top, Yellow (Y) below Red and Blue (B) below Yellow. The low voltage neutral conductor shall occupy the bottom position.

### **11.2. Neutral Conductor**

Neutral conductor may be the same size as the phase conductor or be sized smaller than the phase conductors. The neutral conductor size shall be specified by the work plan. All neutral conductors shall be bare ACSR.

### **11.3 Phase Conductor**

Phase conductors shall be bare ACSR conductor as specified by the work plan.

## **12. Safety**

12.1 The Contractor shall take all measures required to safeguard the public and private property from any hazard to life, limb, or property, which may arise during the performance of the construction of the works. Such measures shall include, but not be limited to barricades, signs, newspaper announcements, traffic control by police, or other advisory and control methods deemed appropriate.

12.2 The Contractor shall provide his work force with all tools and equipment in sufficient numbers and quality to perform all aspects of the works in a safe manner. The Contractor shall provide protective headgear for all members of his workforce, and shall provide protective clothing as required for specific tasks. The Contractor shall instruct his work Force in proper and safe construction techniques and shall continuously monitor compliance with safety instructions throughout the period of the Contract.

12.3 The Contractor shall provide, and require use of, protective grounding equipment when :

- a) Work is being performed on lines adjacent, either in extension of, or parallel to, energized circuits.
- b) Work is being performed on isolated circuits after conductors have been installed

12.4 The Contractor shall maintain all tools and equipment in good working order. All mechanized equipment shall have adequate safety mechanisms and guards in place and be fully operational. Operators of such equipment shall be skilled and fully trained in the operation of such equipment.

12.5 The Contractor shall provide and maintain emergency medical supplies to cover with accidents and snakebites for his work force on a readily available basis. The Contractor shall also instruct all supervisory personnel in the action to be taken in the event of serious injury, and the sources and locations of professional medical assistance, which shall be employed in such cases.

12.6 The Contractor shall apply all accidental insurance policies to his work force for an accident occurring during the working period of the construction.

### **13. Tests**

13.1 The Contractor shall furnish the electrical test equipment and personnel to perform electrical tests of equipment and circuits, as specified by, and under the supervision of the NEA.

13.2 The Contractor shall meggar all circuits installed with a motor-driven megger or equivalent instrument to demonstrate the acceptable insulation characteristics of the line prior to energization and Provisional Acceptance. 400/230 V overhead circuits shall be tested at 500 volts AC.

13.3 The Contractor shall conduct DC hi-potential tests on all underground circuits, after makeup but prior to backfilling. The test shall be made with DC hi-potential test set capable of non-destructively testing the cable at approximately 300% of cable voltage rating.

13.4 All tests specified shall be conducted during suitable atmospheric conditions under the supervision and witness of the NEA. All test results shall be documented and signed by both parties.

### **14. Demolition**

17.1 The Contractor shall perform the removal of all existing facilities in accordance with the specific directions of the Authorized Personnel. All materials removed shall remain the property of NEA and the Contractor shall deliver all salvaged materials to the NEA warehouse, or as specifically directed by the Branch Chief in writing.

### **15. Cleanup**

15.1 The Contractor shall ensure that all worksites shall be free of all manner of debris resulting from the construction activity.

15.2 All crating, conductor reels, packaging materials, conductor scraps, and other miscellaneous items are removed from the workplace. All holes resulting from removal of facilities shall be filled. If trees or brush have been cut or trimmed, all cuttings shall be removed. The worksites shall be left in clean natural conditions.

15.3 Site cleanup shall be an integral part of the Provisional Acceptance process, and no line section shall be provisionally accepted unless all cleanup work has been accomplished.

### **16. Tree Cutting and Trimming**

16.1 Any tree cutting or tree trimming shall be accomplished by the Contractor in coordination with CBO.

16.2 All cutting shall be removed by the Contractor with disposition of cutting as specified by NEA.

### **17. Interruptions to Existing Service**

17.1 The Contractor shall arrange for interruptions of service to existing lines with NEA. Every effort shall be made to limit such interruptions to the minimum.

17.2 If it is possible to maintain service to a section of line by constructing temporary facilities approved by NEA, the Contractor shall detail man hours and classification of personnel required to construct such facilities and submit to NEA for approval prior to any work being performed. Payment for approved work shall be based on the rates covered in Preamble to Price Schedules.

NEA-TDC-073/74-15(SQ)

**18. WORK REQUIREMENT****18.1 COMBINE: AABU NA.PA AND CHHIMKESHWORY V.D.C**

S.No	Materials	Qty	Unit	Remarks
1	Steeltubalar Pole ( Size 8m)	58	Nos	BY TDC
2	PSC pole (Size 8m)	45	Nos	BY TDC
3	Shackle Insulator 500V+ D-Iron	195	Set	BY TDC
4	Gay Insulator (Stay Insulator)	34	Nos	BY TDC
5	Stay Set	34	Set	BY TDC
6	Stay Wire	204	Kg	BY TDC
7	Nut Bolt Different Sizes	43	Kg	BY TDC
8	Conductor (Size 0.03 sq. inch ACSR)	9300	Mtr	BY TDC

**18.2 AABU NA.PA.**

S.No	Materials	Qty	Unit	Remarks
1	Steeltubalar Pole ( Size 8m)	16	Nos	BY TDC
2	PSC pole (Size 8m)	45	Nos	BY TDC
3	Shackle Insulator 500V+ D-Iron	90	Set	BY TDC
4	Gay Insulator (Stay Insulator)	16	Nos	BY TDC
5	Stay Set	16	Set	BY TDC
6	Stay Wire	96	Kg	BY TDC
7	Nut Bolt Different Sizes	25	Kg	BY TDC
8	Conductor (Size 0.03 sq. inch ACSR)	3600	Mtr	BY TDC

**18.3 CHHIMKESHWORY V.D.C.**

S.No	Materials	Qty	Unit	Remarks
1	Steeltubalar Pole ( Size 8m)	42	Nos	BY TDC
2	Shackle Insulator 500V+ D-Iron	105	Set	BY TDC
3	Stay Set	18	Set	BY TDC
	Stay Insulator	18	Nos	BY TDC
4	Stay Wire	108	Kg	BY TDC
6	Nut Bolt Different Sizes	18	Kg	BY TDC
7	Conductor (Size 0.03 sq. inch ACSR)	5700	Mtr	BY TDC



**Nepal Electricity Authority**  
**Tanahun Distribution Center**  
**BILL OF QUANTITY (BOQ)**  
**NEA-TDC-073/74-15-(SQ)**

<b>(A) Labour Cost</b>							
S.N	Labour	unit	Quantity	Unit Rate		Total Amount in Figure	Remarks
				In Figure	In Words		
1	Erection of 8m tubular pole	Nos	58				
2	Erection of PSC pole 8m	Nos	45				
3	Stringing of 0.03 ACSR L.T. conductor	Meter	9300				
4	Pole shift and Re-stringing of 0.03 ACSR L.T. conductor	Meter	1300				
5	Installation of stay set	Set	34				
6	Reinstallation of existing stay set	Set	6				
7	Dismantling and Re-stringing of single phase service wire	Nos	35				
8	Transportation of materials to the working site including loading and unloading	Lot	12				
<b>( B )</b>							
I	Total Labour cost						
II	13% @ VAT of Labour cost B(I)						
III	Total ammount Labour cost ( B(I)+B(II))						

Total Price with VAT ( in words).....

Name of Bidder :

Authorized Signature of Bidder

Company Seal:

Date:

**Bid Security**

Date :

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

Whereas, ***[name of Bidder]*** (hereinafter called "the Bidder") has submitted his Sealed Quotation (SQ) dated ***[date of submission of SQ]*** for the supply of ***[name and/or description of the goods]*** (hereinafter called "the Sealed Quotation").

KNOW ALL PEOPLE by these presents that WE ***[name of Bank]*** of Nepal having our registered office at ***[address of bank]*** (hereinafter called "the Bank") are bound unto ***[name of the procuring entity]*** (hereinafter called "the Purchaser") in the sum of ***[specify amount in figure and words]*** for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

THE CONDITIONS of this obligation are:

- (1) If, the Bidder withdraws its SQ during the period of bid validity specified by the Bidder on the SQ Form; or
- (2) If the Bidder having been notified of the acceptance of its SQ by the Purchaser during the period of bid validity:
  - (a) fails or refuses to execute the Contract Form, if required; or
  - (b) fails or refuses to furnish the performance security, in accordance with the Instruction to Bidders;

we undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser's having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to ninety (90) days from the date of opening of the Sealed Quotation, and any demand in respect thereof should reach the Bank not later than the above date.

---

***[signature of the bank]***


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***[common seal of the bank]***

**Performance Security**

Date :

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

WHEREAS ***[name of Contractor]*** (hereinafter called "the Contractor") has undertaken, in pursuance of Contract No. ***[reference number of the contract]*** dated \_\_\_\_\_ 20\_\_\_\_ to supply ***[description of goods and services]*** (hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a bank guarantee by a reputable bank for the sum specified therein as security for compliance with the Contractor's performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the Contractor a guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Contractor, up to a total of ***[amount of the guarantee in words and figures]***, and we undertake to pay you, upon your first written demand declaring the Contractor to be in default under the Contract and without cavil or argument, any sum or sums within the limits of [amount of guarantee] as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

Signature and seal of the Guarantors

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***[name of bank or financial institution]***


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***[address]***


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***[date]***

## Section X. Special Instruction to Bidders for E-Bidding

### A) Bid submission procedure through electronically (e-submission):

- Interested bidders may either purchase the Bidding documents from the Employer's office as specified in the Bid Notice or choose to download the necessary part of bidding documents from e-procurement section of NEA's web site <http://www.e-nea.org.np>. In case, the Bidder choose to download the bidding documents, prepare his bids on downloaded documents, and submit his bid electronically, the Bidder is required to deposit the cost of bidding document (as specified in the bid notice) in the bank account specified in the IFB. In addition, electronic scanned copy (pdf format) of the Bank deposit voucher shall be also required to be submitted along with the electronic bid files.
- The Bidder shall fill the following documents and forms (in hard copy), signed by the authorized representative and with seal of the company.

S.No.	Document	PDF name	File	Requirement	Remarks
1	Form of Bid	Bid form -1		Mandatory	
2	Bid Security (Bank Guarantee)	Bid security-2		Mandatory	
3	Company registration,	Company reg-3		Mandatory	All firms in case of JV
4	VAT registration,	VAT reg-4		Mandatory for National firms	All firms in case of JV
5	Tax clearances certificate,	Tax-5		Mandatory for National firms	All firms in case of JV
6	Power of Attorney of Bid signatory	Power of att-6		Mandatory	
7	Joint venture agreement	JV doc-7		Mandatory	In case of JV
8	Qualification Information	Qualifications-8		Mandatory	
9	BOQ with rate, amount and total amount	BOQ-9		Mandatory	
10	Manufacturers Authorization	Authorization -10		Not Mandatory	
11	Technical Data Sheet	TDS-11		Not Mandatory	NA
12	Certification Documents	Certifications-12		Not Mandatory	NA
13	Declaration Form	Declaration-13		Not Mandatory	NA

The Bidder shall then scan the completed original documents, forms in PDF files with appropriate filename as shown in the table above. PDF (Adobe acrobat) version must be 4.0 or above. Declaration Letter for Eligibility of Bidder (as mentioned) shall be prepared and scanned and uploaded.

**Note: Mandatory** means the mentioned files must be included in e-submission and non-submission of such file shall be considered as non-responsive bid.

- For e-submission purpose the Bidder shall, at first, register in the e-procurement section NEA's web site <http://www.e-nea.org.np>

- After preparing all the required bidding documents in PDF scan files as specified as above, the Bidder shall upload the PDF bid files and submit his complete bid online through e-procurement section of NEA's website <http://www.e-nea.org.np> within the specified date and time.
- The e-procurement system will accept the e-submission of bid from the date after publishing of notice and will automatically not allow the e-submission of bid after the deadline for submission of bid, as specified above.
- The standard time for e-submission is Nepalese Standard Time as set out in the server of MIS Department of NEA. In case of e-submission of bids, the e-procurement system will, automatically, not allow the e-submission of bid after the deadline for submission of bid.
- When a bidder submits his bid in hard copy the e-procurement section **does not allow** the bidder to submit his Substitution or Modification or Withdrawal through e-procurement section of NEA's web site.
- Bidders may submit his Substitution or Modification or Withdrawal either in hard copy or through e-submission.
- For Substitution of Bid, the Bidder shall follow similar steps with a Substitution letter in PDF file.
- For Modification or Withdrawal of bid the Bidder is required to submit PDF scan copy of their Modification or Withdrawal letter and a written Power of Attorney of the signatory for Modification/ Withdrawal, duly signed by Authorised Representative/s of the Firm / all authorised Joint Venture partners.
- When a Bidder submits electronic bid by downloading the bidding documents from the NEA's webpage it is assumed that the Bidder prepares his bid by studying and examining all the Bidding documents including specifications and conditions of contract.
- In case, the Bidder choose to download the bidding documents and deposit the cost of bidding document (as specified in the bid notice) in the Project's account such deposited amount shall be verified by the office during bid evaluation process. The bid shall be non-responsive and shall not be evaluated if the specified cost for bidding document is not deposited in the specified account of the project for the said document.

#### **B) Requirements and Conditions for E-Submission of Bid:**

- The Bidder shall submit his bid electronically in PDF files in the manner specified above, and submission of hard copy of "original plus one copy of bid" is not mandatory.
- In case, if both the electronic bid and original bid in hard copy are submitted to the Employer within the bid submission dead line, the Bidder's electronic bid and original bid in hard copy will be accepted for evaluation provided if the facts and figures in hard copy confirm to the PDF files in electronic bid. If there is any discrepancy in fact and figures in the electronic bid and original bid in hard copy it will be treated as two separate bids from one Bidder and hence, both the electronic bid and original bid in hard copy shall be disqualified
- However, for electronically submitted bid in PDF files, the Bidder shall be required to submit documents/ clarifications as specified in ITB clause within 3 days.
- The e-submitted bids must be readable through open standards interfaces. Unreadable and or partially submitted bid files shall be considered incomplete and rejected for further bid evaluation.
- In addition to electronically submitted PDF files, the Bidder shall be required to submit documents and clarifications as required by the Employer. Non-submission of such documents and or clarifications by the Bidder within specified time may cause forfeiture of Bid Security.
- In case of major discrepancy found between electronically submitted PDF bid files and documents/ clarifications provided by the Bidder, the bid shall not be considered for further evaluation.
- The Bidder shall attach the Bid Security Guarantee in the format attached in the Bid Document. The Bid Security may be forfeited
  - if the Bidder does not respond and/or submit the documents and or clarifications when requested by the Employer.

. → if major discrepancy is found between e-submitted bid information and documents/clarifications provided by the Bidder during verification process as requested by the Employer.

### **C) Bid Opening Process**

- Electronically submitted bid shall be opened first at the Bid opening time.
- The e-procurement system allows the Employer to download the e-submitted bid files from the Bidders only after the time for opening the bids.
- The e-submitted bids must be readable through open standards interfaces. Unreadable and or partially submitted bid files shall be considered incomplete and rejected for further bid evaluation.
- After opening of e-submitted bids files, all files shall be printed and recorded at the time of bid opening.
- Envelopes marked with "WITDRAWAL" or "MODIFICATION" or "SUBSTITUTION" and in case of e-submission the files in PDF format under "WITDRAWAL" or "MODIFICATION" or "SUBSTITUTION" shall be opened and read out first. Bids for which acceptable notice of "WITDRAWAL" or "SUBSTITUTION" has been submitted shall not be opened. In case of e-submission bids, the Employer evaluates the bid based on the information as per electronically submitted bid files. For clarification/ verification purpose, the Employer may request the Bidder to submit documents/ clarifications. In case, if the Bidder can not substantiate or provide evidence to prove the information provided in e-submitted bid through documents/ clarifications, the bid shall not be considered for further evaluation and Clause [bid forfeit] as above shall be applicable.
- Proposed facility for submission of bid electronically through e-submission is to increase transparency, non-discrimination, equality of access, and open competition. The Bidders are fully responsible to use the e-submission facility in e-procurement section of NEA's website <http://www.e-nea.org.np> in specified procedures and in no case the Employer shall be held liable for Bidder's inability to use this facility.