

**North Eastern Electricity Supply Company of Orissa Limited (NESCO)**  
**Western Electricity Supply Company of Orissa Limited (WESCO)**  
**Southern Electricity Supply Company of Orissa Limited (SOUTHCO)**  
Registered Office,  
123, Sector-A, Zone-A, Mancheswar Industrial Estate, Bhubaneswar, Orissa-751010  
Tel No. (0674) 2582728, Fax No. (0674) 2586343

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## **VOLUME- I**

**Tender Notification : CSO/09/Electrical & Civil Installation Works**  
**Date: 15.07.2008; (Revised)**

**2008 - 2009**

**Revised Due Date for Submission of Bid : 11.08.2008**

**Section – I**

**INVITATION FOR BIDS (IFB)**

**Tender Notification : CSO/09/Electrical & Civil Installation Works  
Date: 15.07.2008; (Revised)**

**2008 - 2009**

## Registered Office of NESCO, WESCO & SOUTHCO

- 1.0 The Registered Office of NESCO, WESCO & SOUTHCO (here in after referred as CSO) invites Sealed tenders from reputed Electrical / Civil Contractors with required license for carrying out installation of various Electrical & Civil works in the jurisdiction of NESCO, WESCO & SOUTHCO. The bidder must possess the technical requirements as specified in clause 5.0 stated below. The sealed envelopes shall be duly superscribed as "TENDER NOTICE/CSO/09/Electrical & Civil Installation Works due for opening on dt. 11.08.08".

Sl. No.	Brief Description of Work	Unit	Quantity			
			NESCO	WESCO	SOUTHCO	TOTAL
<b>A</b>	<b>Electrical Works :</b>					
1.	Construction of New 11/0.4 KV Substations					
a	25 KVA S/s	No.s	0	0	150	150
b	63 KVA S/s	No.s	84	0	140	224
c	100 KVA S/s	No.s	136	100	160	396
2.	Upgradation of existing 11/0.4 KV Substations					
a	From 25 KVA to 63 KVA	No.s	56	0	170	226
b	From 63 KVA to 100 KVA	No.s	424	250	170	844
c	From 100 KVA to 250 KVA	No.s	35	100	70	205
d	From 250 KVA to 315 KVA	No.s	15	140	60	215
e	From 250 KVA to 500 KVA	No.s	10	50	2	62
3	Renovation of existing 11/0.4 KV Substations					
a	25 KVA S/s	No.s	0	0	200	200
b	63 KVA S/s	No.s	700	150	300	1150
c	100 KVA S/s	No.s	300	300	400	1000
d	250 KVA S/s	No.s	459	250	50	759
e	500 KVA S/s	No.s	73	100	0	173
4.	Construction of New 11 KV HT Line					
a	With 34 MM <sup>2</sup> AAAC	Km.	0	0	75	75
b	With 55 mm <sup>2</sup> AAAC	Km.	132	50	100	282
5.	Construction of New LT Line					
a	With 3x35+1x25 MM <sup>2</sup> AB Cable	Km.	0	0	30	30
b	With 3x50+1x35 MM <sup>2</sup> AB Cable	Km.	44	25	60	129
6.	Replacement of LT Bare Conductor with AB Cable					
a	With 3x95+1x70+1x16 mm <sup>2</sup> AB Cable	Km.	0	100	0	100
b	With 3x50+1x35+1x16 mm <sup>2</sup> AB Cable	Km.	40	60	50	150
c	With 3x35+1x25+1x16 mm <sup>2</sup> AB Cable	Km.	120	40	50	210
d	With 3x35+1x25 mm <sup>2</sup> AB Cable	Km.	40	0	50	90
e	With 1x35+1x25 mm <sup>2</sup> AB Cable	Km.	40	0	50	90

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B	Civil Works					
1.	Construction of Barbed Wire Fencing (with Gate) around 11 KV substations	No.	500	500	500	1500
2.	Construction of Boundary wall (with gate) around 11 KV substations	No.	475	400	300	1175
3.	Construction of Boundary wall (with gate) around 33/11 KV substations	No.	22	60	104	186
4.	Construction of Control Room Building at 33/11 KV substations	No.	19	46	20	79

- 2.0 The schedule of specifications with detail terms & conditions can be obtained from address given below against demand draft of Rs. 5000/- plus 4% VAT, drawn in favour of NESCO Ltd., payable at Bhubaneswar. The tender papers will be issued on all working days upto 08.08.2008.

The tender documents can also be downloaded from the website "[nescoorissa.com](http://nescoorissa.com)", "[wescoorissa.com](http://wescoorissa.com)" & "[southcoorissa.com](http://southcoorissa.com)".

In case tender papers are downloaded from the above website, then the bidder has to enclose a demand draft covering the cost of bid documents as stated above in a separate envelope with suitable superscription "Cost of Bid Documents : Tender Notice Ref : CSO/09/Electrical & Civil Installation Works". This envelope should accompany the Bid Documents.

- 3.0 Offers will be received upto 2.00 PM. on dt. 11.08.08 & will be opened at the address given below at 3.00 PM. on same day in presence of the authorized representatives of the bidders. The schedule of specifications with detail terms & conditions are enclosed. It is the sole responsibility of the bidder to ensure that the bid documents reach this office on or before the cut off due date of tender opening.
- 4.0 CSO reserves the right to accept / reject any or all Tenders without assigning any reason thereof and alter the quantity of materials mentioned in the Tender documents at the time of placing purchase orders. Tender will be summarily rejected if:
- Bid security @ 1% (one percent) of the Tender value is not deposited in shape of Bank Draft in favor of NESCO Ltd., payable at Bhubaneswar or Bank Guarantee executed in favour of NESCO Ltd., Plot 123, Sector – A, Zone – A, Mancheswar Industrial Estate, Bhubaneswar – 751 010. Bid security against previous Tenders, if any, will not be adjusted towards Bid security against this Tender.
  - The offer does not contain "Rates indicating break-up towards all taxes & duties".

- (iii). Complete Technical details are not enclosed.
- (iv). Copies of valid Electrical/Civil License (as applicable) is not submitted.
- (v). Tender is received after due time due to any reason.

**5.0 Qualification Criteria :-**

The prospective bidder must qualify all of the following requirements to be eligible to participate in the bidding.

- (i). The Bidder may quote for any or more of the following works :

**A) Electrical Works :-**

1. Construction of New 11 KV Sub-Stations;
2. Up-gradation of Existing 11 KV Sub-Stations;
3. Renovation of Existing 11 KV Sub-Stations;
4. Construction of New 11 KV Line;
5. Construction of New LT Line (with AB Cable);
6. Replacement of LT Bare Conductors with AB Cable;

**B) Civil Works :-**

1. Construction of Barbed Wire Fencing with supply of Gate around 11 KV Substations;
2. Construction of Boundary Wall with supply of Gate around 11 KV Substations;
3. Construction of Boundary Wall with supply of Gate around 33/11 KV Substations;
4. Construction of Control Room Building at 33/11 KV Substations;

A Bidder will to quote for any or more of the above works, has to quote for a minimum quantity of 10% of the particular works for any Discom (Either WESCO or NESCO or SOUTHCO) as stated in page 3 & 4.

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- (ii). The Bidder should have minimum turnover of Rs. 50 Lakh in any of the past five financial years. The bidder must enclose copies of the audited accounts in proof of the same.
- (iii). Bidder willing to quote for Electrical Works srl. no. 5 & 6 as stated above, must have at least executed AB Cable Installation work for 5 Km for any Electricity Supply Utility. Bidder must enclose copies of the relevant Work Order, Certified Invoice Copy, Performance Certificate etc. as proof of having successfully executed the work.
- (iv). Bidders willing to quote for Civil Works Srl. No. 4 as stated above, must at least have constructed buildings of similar size/specification. Bidder must enclose copies of the relevant Work Order, Certified Invoice Copy, Performance Certificate etc. as proof of having successfully executed the work.

### 6.0 Project Completion Schedules:

Description	Date
Issue of Tender Document	16.07.2008
Receipt of Queries from Bidders by fax /email	06.08.2008
Replies to the Queries by fax/email	07.08.2008
Submission of Bids	11.08.2008 upto 2.00 PM
Opening of Bids	11.08.2008 at 3.00 PM
Receipt of Clarification from Bidders (if any)	20.08.2008
Issue of LOI / Work Order	31.08.2008
Works completion	Phased manner & to be completed within 6 months from the date of issue of LOI.

7.0 All correspondences with regard to the above shall be made to the following address:

Dy. General Manager (Tech) / Sr. Manager (MAC)  
Central Services Office  
(NESCO, WESCO & SOUTHCO)  
Plot No. 123, Sector – A, Zone – A  
Mancheswar Industrial Estate  
Bhubaneswar – 751 010  
FAX : (0674) 2586343  
Email : [biswakeshdash@rediffmail.com](mailto:biswakeshdash@rediffmail.com) / [susantasarangi@sify.com](mailto:susantasarangi@sify.com)  
Mobile : 93382 14150 / 93376 46022

**SECTION – II**  
**INSTRUCTION TO BIDDERS (ITB)**

**Tender Notification : CSO/09/Electrical & Civil Installation Works**  
**Date: 15.07.2008; (Revised)**

**2008 - 2009**

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## A. GENERAL

1.0 North Eastern Electricity Supply Company of Orissa Ltd. (NESCO), Western Electricity Supply Company of Orissa Ltd. (WESCO) and Southern Electricity Supply Company of Orissa Ltd. (SOUTHCO), hereinafter referred to as the "Purchaser" are desirous of construction of (i) New 11 KV Substations, (ii) Upgradation and/or renovation of existing 11 KV Substations, (iii) Construction of New 11 KV HT Line and LT Line with AB Cable, (iv) Dismantling of existing LT Bare Conductors and Installation of AB Cable, (v) Construction of Barbed Wire Fencing / Boundary Wall around 11 KV substations (vi) Construction of Boundary Wall and/or Control Room Buildings around 33/11 KV substations, in their licensed area in the state of Orissa.

## 2.0 SCOPE OF WORK

The scope shall include receipt of required materials to be issued from the stores of the Purchaser, transportation of the same to the work site, construction of new electrical / civil structures, dismantling of existing electrical structures and return of these items at the Purchaser's stores, safe custody of the items and return of unused materials to the Purchaser's stores.

## 3.0 DISCLAIMER

3.01 This Document includes statements, which reflect various assumptions, which may or may not be correct. Each Bidder/Bidding Consortium should conduct its own estimation and analysis and should check the accuracy, reliability and completeness of the information in this Document and obtain independent advice from appropriate sources in their own interest.

3.02 Neither Purchaser nor its employees will have any liability whatsoever to any Bidder or any other person under the law or contract, the principles of restitution or unjust enrichment or otherwise for any loss, expense or damage whatsoever which may arise from or be incurred or suffered in connection with anything contained in this Document, any matter deemed to form part of this Document, provision of Services and any other information supplied by or on behalf of Purchaser or its employees, or otherwise arising in any way from the selection process for the Supply.

3.03 Though adequate care has been taken while issuing the Bid document, the Bidder should satisfy itself that documents are complete in all respects. Intimation of any discrepancy shall be given to this office immediately.

3.04 This Document and the information contained herein are Strictly Confidential and are for the use of only the person(s) to whom it is issued. It may not be copied or distributed by the recipient to third parties (other than in confidence to the recipient's professional advisors).

## 4.0 COST OF BIDDING

The Bidder shall bear all costs associated with the preparation and submission of its Bid and Purchaser will in no case be responsible or liable for those costs.

## B. BIDDING DOCUMENTS

### 5.0 BIDDING DOCUMENTS

5.01 The Scope of Work, Bidding Procedures and Contract Terms are described in the Bidding Documents. In addition to the covering letter accompanying Bidding Documents, the Bidding Documents include:

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## Volume - I

- (a) Invitation for Bids (IFB) - Section - I
- (b) Instructions to Bidders (ITB) - Section - II
- (c) General Conditions of Contract (GCC) - Section – III
- (d) Technical Specifications (TS) - Section - IV

## Volume - II

- (a) Bid Form - Annexure – I
- (b) BG Formats - Annexure – II
- (c) Bill of Materials for submission of rates - Annexure – III
- (d) Drawings - Annexure - IV

5.02 The Bidder is expected to examine the Bidding Documents, including all Instructions, Forms, Terms and Specifications. Failure to furnish all information required by the Bidding Documents or submission of a Bid not substantially responsive to the Bidding Documents in every respect will may result in the rejection of the Bid.

### 6.0 AMENDMENT OF BIDDING DOCUMENTS

6.01 At any time prior to the deadline for submission of Bids, the Purchaser may, for any reasons, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by Amendment.

6.02 The Amendment shall be part of the Bidding Documents, pursuant to Clause 5.01, and it will be notified in writing by Fax/e-mail to all the Bidders who have received the Bidding Documents and confirmed their participation to Bid, and will be binding on them.

6.03 In order to afford prospective Bidders reasonable time in which to take the Amendment into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of Bids.

### C. PREPARATION OF BIDS

#### 7.0 LANGUAGE OF BID

The Bid prepared by the Bidder, and all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in the English Language. Any printed literature furnished by the Bidder may be written in another Language, provided that this literature is accompanied by an English translation, in which case, for purposes of interpretation of the Bid, the English translation shall govern.

#### 8.0 DOCUMENTS COMPRISING THE BID

The Bid prepared and submitted by the Bidder shall comprise the following components:

- (a) Bid Form, Price & other Schedules (STRICTLY AS PER FORMAT) and Technical Data Sheets completed in accordance with Clause 9.0, 10.0, 11.0 and Technical Specification;

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- (b) All the Bids must be accompanied with the required bid security as mentioned in the Section-I against each tender.
- (c) Power of Attorney indicating that the person(s) signing the Bid have the authority to sign the Bid and thus that the Bid is binding upon the Bidder during the full period of its validity, in accordance with clause 12.0.

### 9.0 BID FORM

9.01 The Bidder shall complete an 'Original' and another one 'Copy' of the Bid Form and the appropriate Price & Other Schedules and Technical Data Sheets furnished in the Volume-II of the Bidding Documents.

### 9.02 Bid Security

Pursuant to Clause 8.0 (b) above, the bidder shall furnish, as part of its bid, a bid security amounting to 1% of the total bid value (FOR Destination) as already specified in the Section-I. In case of schedule A – 3 (Renovation of existing 11/0.4 KV Sub-stations, the bidder is required to submit Bid Security of Rs. 25000/- (Rupees Twenty Five Thousand only) irrespective of quantum of work quoting for this work. The bid security is required to protect the Purchaser against the risk of Bidder's conduct which would warrant the security's forfeiture.

The bid security shall be denominated in the currency of the bid, and shall be in the following form:

- (a) a bank guarantee issued by any scheduled bank strictly as per the format enclosed and shall be valid for a period of thirty (30) days beyond the validity of the bid.
- (b) Bank Draft in favour of NESCO, payable at Bhubaneswar.

Unsuccessful bidders' bid security will be discharged or returned as promptly as possible but not later than thirty (30) days after the expiration of the period of bid validity.

The successful bidder's bid security will be discharged upon furnishing the performance security.

The bid security may be forfeited :

- (a) if the Bidder:
  - i) withdraws its bid during the period of bid validity specified by the Bidder in the Bid Form; or
- (b) in the case of a successful Bidder, if the Bidder fails:
  - (i) to sign the Contract, or
  - (ii) to furnish the required performance security.

### 10.0 BID PRICES

10.01 The Bidder shall complete the appropriate Price Schedules included herein, stating the Unit Price for each item & total Price.

10.02 The prices offered shall be inclusive of all costs as well as Duties, Taxes and Levies paid or payable during execution of the supply work, break up of price constituents, should be there.

10.03 Prices quoted by the Bidder shall be "Firm" and not subject to any price adjustment during the performance of the Contract. A Bid submitted with an adjustable price quotation will be treated as non-responsive and rejected.

## **Registered Office of NESCO, WESCO & SOUTHCO**

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### **11.0 BID CURRENCIES**

Prices shall be quoted in Indian Rupees Only.

### **12.0 PERIOD OF VALIDITY OF BIDS**

12.01 Bids shall remain valid for 180 days from the date of opening of the Bid.

12.02 Notwithstanding Clause 12.01 above, the Purchaser may solicit the Bidder's consent to an extension of the Period of Bid Validity. The request and the responses thereto shall be made in writing by Fax/e-mail.

### **13.0 ALTERNATIVE BIDS**

Bidders shall submit Bids, which comply with the Bidding Documents. Alternative Bids will not be considered. The attention of Bidders is drawn to the provisions of Clause 22.03 & 22.04 regarding the rejection of Bids, which are not substantially responsive to the requirements of the Bidding Documents.

### **14.0 FORMAT AND SIGNING OF BID**

14.01 The original Bid Form and accompanying documents (as specified in Clause 9.0), clearly marked "Original Bid", plus one copy must be received by the Purchaser at the date, time and place specified pursuant to Clauses 15.0 and 16.0. In the event of any discrepancy between the original and the copies, the original shall govern.

14.02 The original and copy of the Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to sign on behalf of the Bidder. Such authorization shall be indicated by written Power-of-Attorney accompanying the Bid.

14.03 The Bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the Bid.

## **D. SUBMISSION OF BIDS**

### **15.0 SEALING AND MARKING OF BIDS**

15.01 Bid submission: One original & one Copy (hard copies) of all the Bid Documents shall be sealed and submitted to the Purchaser before the closing time for submission of the bid.

15.02 The Technical Documents and the Bid Security shall be enclosed in a sealed envelope and the said envelope shall be superscribed with "Technical & Bid Security". The price bid shall be inside another sealed envelope with superscription "Price Bid". Both these envelopes shall be sealed inside another big envelope. All the envelopes should bear the Name and Address of the Bidder and marking for the Original and Copy. The envelopes should be super-scribed with "Tender Notice No. & Due date of opening".

15.03 The Bidder has the option of sending the Bids in person. Bids submitted by Telex/Telegram/Fax will not be accepted. No request from any Bidder to the Purchaser to collect the proposals from Airlines/Cargo Agents etc shall be entertained by the Purchaser.

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### **16.0 DEADLINE FOR SUBMISSION OF BIDS**

16.01 The original Bid, together with the required copies, must be received by the Purchaser at the address specified no later than 2.00 PM. on 11.08.2008.

16.02 The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Documents in accordance with Clause 9.0, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

### **17.0 ONE BID PER BIDDER**

Each Bidder shall submit only one Bid either by itself, or as a partner in a Joint Venture. A Bidder who submits or participates in more than one Bid will cause all those Bids to be rejected.

### **18.0 LATE BIDS**

Any Bid received by the Purchaser after the deadline for submission of Bids prescribed by the Purchaser, pursuant to Clause 16.0, will be declared "Late" and rejected and returned unopened to the Bidder.

### **19.0 MODIFICATIONS AND WITHDRAWAL OF BIDS**

19.01 The Bidder is not allowed to modify or withdraw its Bid after the Bid's submission.

## **E EVALUATION OF BID**

### **20.0 PROCESS TO BE CONFIDENTIAL**

Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process. Any effort by a Bidder to influence the Purchaser's processing of Bids or award decisions may result in the rejection of the Bidder's Bid.

### **21.0 CLARIFICATION OF BIDS**

To assist in the examination, evaluation and comparison of Bids, the Purchaser may, at its discretion, ask the Bidder for a clarification of its Bid. All responses to requests for clarification shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted.

### **22.0 PRELIMINARY EXAMINATION OF BIDS / RESPONSIVENESS**

22.01 Purchaser will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Bids are generally in order.

22.02 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price per item that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price per item will be corrected. If there is a discrepancy between the Total Amount and the sum of the total price per item, the sum of the total price per item shall prevail and the Total Amount will be corrected.

22.03 Prior to the detailed evaluation, Purchaser will determine the substantial responsiveness of each Bid to the Bidding Documents including production capability and acceptable quality of the Goods

offered. A substantially responsive Bid is one, which conforms to all the terms and conditions of the Bidding Documents without material deviation.

- 22.04 A Bid determined as not substantially responsive will be rejected by the Purchaser and / or the Purchaser and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

**23.0 EVALUATION AND COMPARISON OF BIDS**

- 23.01 The evaluation of Bids shall be done based on the delivered cost competitiveness basis.

- 23.02 The evaluation of the Bids shall be a stage-wise procedure. The following stages are identified for evaluation purposes:

In the first stage, the Bids would be subjected to a responsiveness check. The Technical Proposals and the Conditional ties of the Bidders would be evaluated.

Subsequently, the Financial Proposals along with Supplementary Financial Proposals, if any, of Bidders with Techno-commercially Acceptable Bids shall be considered for final evaluation.

- 23.03 The Purchaser's evaluation of a Bid will take into account, in addition to the Bid price, the following factors, in the manner and to the extent indicated in this Clause:

- (a) Work Schedule
- (b) Deviations from Bidding Documents

Bidders shall base their Bid price on the terms and conditions specified in the Bidding Documents.

The cost of all quantifiable deviations and omissions from the specification, terms and conditions specified in Bidding Documents shall be evaluated. The Purchaser will make its own assessment of the cost of any deviation for the purpose of ensuring fair comparison of Bids.

- 23.04 Any adjustments in price, which result from the above procedures, shall be added for the purposes of comparative evaluation only to arrive at an "Evaluated Bid Price". Bid Prices quoted by Bidders shall remain unaltered.

**F. AWARD OF CONTRACT**

**24.0 CONTACTING THE PURCHASER**

- 24.01 From the time of Bid opening to the time of contract award, if any Bidder wishes to contact the Purchaser on any matter related to the Bid, it should do so in writing.

- 24.02 Any effort by a Bidder to influence the Purchaser and / or in the Purchaser's decisions in respect of Bid evaluation, Bid comparison or Contract Award, will result in the rejection of the Bidder's Bid.

**25.0 THE PURCHASER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS**

The Purchaser reserves the right to accept or reject any Bid and to annul the Bidding process and reject all Bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Purchaser's action.

## Registered Office of NESCO, WESCO & SOUTHCO

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### 26.0 AWARD OF CONTRACT

The Purchaser will award the Contract to the successful Bidder whose Bid has been determined to be the lowest - evaluated responsive Bid, provided further that the Bidder has been determined to be qualified to satisfactorily perform the Contract. Purchaser reserves the right to award order other bidders in the tender, provided it is required for progress of project & provided he agrees to come to the lowest rate.

### 27.0 THE PURCHASER'S RIGHT TO VARY QUANTITIES

The Purchaser reserves the right to vary the quantity i.e. increase or decrease the numbers/quantities without any change in terms and conditions during the execution of the Order.

### 28.0 LETTER OF INTENT/ NOTIFICATION OF AWARD

The letter of intent / Notification of Award shall be issued to the successful Bidder whose bids have been considered responsive, techno-commercially acceptable and evaluated to be the Lowest (L1). The successful Bidder shall be required to furnish a letter of acceptance within 7 days of issue of the letter of intent /Notification of Award by Purchaser.

### 29.0 PERFORMANCE SECURITY

Within 15 days of the receipt of Notification of Award/ Letter of Intent from the Purchaser, the successful Bidder shall furnish the Performance Security in the form of Bank Guarantee for an amount of 10% (Ten percent) of the Contract Price in accordance with the General Conditions of Contract in the Performance Security Form provided in Vol.-II, Annexure - II of the Bidding Documents. Upon submission of the performance security, the bid security shall be released.

### 30.0 CORRUPT OR FRAUDULENT PRACTICES

30.01 The Purchaser requires that the Bidders observe the highest standard of ethics during the procurement and execution of the Project. In pursuance of this policy, the Purchaser:

- (a) Defines, for the purposes of this provision, the terms set forth below as follows:
  - (i) "Corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and
  - (ii) "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Purchaser, and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and to deprive the Purchaser of the benefits of free and open competition.
- (b) Will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
- (c) Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded an contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, an contract.

30.02 Furthermore, Bidders shall be aware of the provision stated in the General Conditions of Contract.

**SECTION - III**

**(GENERAL CONDITION OF CONTRACT)**

**Tender Notification : CSO/09/Electrical & Civil Installation Works  
Date: 15.07.2008; (Revised)**

**2008 - 2009**

# Registered Office of NESCO, WESCO & SOUTHCO

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## GENERAL CONDITION OF CONTRACT (GCC)

### 1.0 General Instructions

- 1.01 All the Bids shall be prepared and submitted in accordance with these instructions.
- 1.02 Bidder shall bear all costs associated with the preparation and delivery of its Bid, and the Purchaser will in no case shall be responsible or liable for these costs.
- 1.03 The Bid should be submitted by the Bidder in whose name the bid document has been issued and under no circumstances it shall be transferred/sold to any other party.
- 1.04 The Purchaser reserves the right to request for any additional information and also reserves the right to reject the proposal of any Bidder, if in the opinion of the Purchaser, the data in support of Tender requirement is incomplete.
- 1.05 The Bidder is expected to examine all instructions, forms, terms & conditions and specifications in the Bid Documents. Failure to furnish all information required in the Bid Documents or submission of a Bid not substantially responsive to the Bid Documents in every respect may result in rejection of the Bid. However, the Purchaser's decision in regard to the responsiveness and rejection of bids shall be final and binding without any obligation, financial or otherwise, on the Purchaser.

### 2.0 Definition of Terms

- 2.01 "Purchaser" shall mean NESCO/ WESCO /SOUTHCO.
- 2.02 "Bidder" shall mean the firm who quotes against this bid document issued by the Purchaser. "Contractor" or "Seller" shall mean the successful Bidder and/or Bidders whose bid has been accepted by the Purchaser and on whom the "Letter of intent" is placed by the Purchaser and shall include his heirs, legal representatives, successors and permitted assigns wherever the context so admits.
- 2.03 "Site" shall mean the Electricity Distribution Area of the Company.
- 2.04 "Specification" shall mean collectively all the terms and stipulations contained in those portions of this bid document known as Instruction to Bidder, Bid form and other forms as per Volume - III, General Conditions of Contract, Specifications and the Amendments, Revisions, Deletions or Additions, as may be made by the Purchaser from time to time.
- 2.05 "Letter of Intent" shall mean the official notice issued by the Purchaser notifying the Contractor that his proposal has been accepted and it shall include amendments thereto, if any, issued by the Purchaser. The "Letter of Intent" issued by the Purchaser shall be binding on the "Contractor". The date of Letter of Intent shall be taken as the effective date of the commencement of contract.
- 2.06 "Purchase Order" shall mean the Purchase Order and amendments thereof and the drawings, specifications and other documents / papers referred to therein which shall constitute the "Contract".
- 2.07 "Month" shall mean the calendar month and "Day" shall mean the calendar day.
- 2.08 "Codes and Standards" shall mean all the applicable codes and standards as indicated in the Technical Specification.
- 2.09 "Offer Sheet" shall mean Bidder's firm offer submitted to Purchaser in accordance with the specification.
- 2.10 "Contract" shall mean THE "letter of Intent" issued by the Purchaser.

- 2.11 "Contract Price" shall mean the price referred to in the "Letter of intent".
- 2.12 "Contract Period" shall mean the period during which the "Contract" shall be executed as agreed between the Contractor and the Purchaser in the Contract inclusive of extended contract period for reasons beyond the control of the Contractor and/or Purchaser due to force majeure.
- 2.13 "Goods" shall mean all items to be supplied under Purchase Order whether raw materials, processes materials, equipment, fabricated products, drawings or other documents as applicable.
- 2.14 "Store" shall mean the Purchaser store as defined elsewhere in this tender document.

### **3.0 Contract Documents & Priority**

- 3.01 Contract Documents: The Specification, terms and conditions of the contract shall consist solely of these Tender conditions and offer sheet.
- 3.02 Priority: Should there be any discrepancy between any term hereof and any term of the Offer Sheet, the terms of these tender document shall prevail.

### **4.0 Scope of Work**

- 4.01 The "Scope of Work" shall be on the basis of Bidder's responsibility, completely covering the obligations, responsibility and workmanship, provided in this Bid Enquiry whether implicit or explicit.
- 4.02 The Purchaser reserves the right to vary the quantity i.e increase or decrease, which shall be communicated to successful bidder during project execution.
- 4.03 All relevant drawings, data and instruction manuals and other necessary inputs shall be under the scope of contract.

### **5.0 General Requirements**

- 5.01 The contractor shall supply, deliver best quality goods.
- 5.02 The company also reserves the right to add from the scope of work or delete from the scope of work so assigned to the Supplier, if the circumstances so warrant.
- 5.03 The contractor shall be responsible for loading and unloading of all materials with proper material handling equipment.

### **6.0 Terms of Payment**

- 6.01 The Payment shall be made as under:
  - a) The contractor shall raise monthly running bill based on the works carried out and certified by the Purchaser's engineer in charge. 90% payment against the monthly running bill with taxes & duties on prorata basis shall be made within 15 days of receipt of the certified bill copy at the Corporate Office of the Purchaser.
  - b) After completion of the work, the contractor shall raise a final bill thereby adjusting all amount already claimed and received against the running bills. In case of any deviation from the quantity as per the scope of work, work order shall be amended. Final payment shall be made on receipt of a Bank Guarantee of the 10% value of the value of the works after quantity amendment (if any). This BG shall remain valid for a period beyond 90 days from the warranty period as per clause no. 12.0. This BG is independent of the P.B.G prescribed in Clause-13.0

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10.02 All Payments shall be made after certification from Purchaser's Engineer Incharge. All Payments are subject to receipt of correct Documents.

### **11.0 Price Validity**

All bids submitted shall remain valid, firm and subject to unconditional acceptance by Purchaser for 180 days post bid opening date. For awarded Contract, the prices shall remain valid and firm till contract completion.

### **12.0 Warranty / Guarantee**

12.01 The bidder shall guarantee for the quality of workmanship for a minimum period of 24 months from the date of handing over of the works to the authorized engineer of the Purchaser. Contractor shall submit a Contract Performance Bank Guarantee of 10% of the order value valid for a period of 90 days beyond the expiry of the warranty period.

12.02 If during the defect liability period any services performed found to be defective, these shall be promptly rectified by contract its own cost (including the cost of dismantling and reinstallation) on the instruction of Purchaser.

### **13.0 Contract Performance Bank Guarantee**

13.01 Within Fifteen (15) days from the date of the Award notice, the successful bidder shall submit a Contract Performance Bank Guarantee (PBG) in favour of Purchaser equivalent to Ten percent (10%) of the total price of the Contract (the "Performance Bank Guarantees").

13.02 The Performance Bank Guarantee established under Clause 13.01 shall be forfeited without recourse to the Seller and payable against the presentation by Purchaser to the bank with a claim that the seller has failed to comply with any term or condition set forth in the Contract.

13.03 The Performance Bank Guarantee established under will be automatically and unconditionally forfeited without recourse if Purchaser in its sole discretion determines that Seller has failed to comply with any Terms or Condition set forth in the contract.

13.04 The Performance Bank Guarantees will be released without interest within thirty (30) days from the last date up to which the Performance Bank Guarantee has to be kept valid (as defined in Clause 13.01).

### **14.0 Technical information / data.**

The company and the contractor, to the extent of their respective rights permitting to do so, shall exchange such technical information and data as is reasonably required by each party to perform its obligations and responsibilities. The company and the contractor agree to keep each other in confidence and to use the same degree of care as it uses with respect to its own proprietary data to prevent its disclosure to third parties of all technical and confidential information. The technical information, drawings, records and other document shall not be copied, transferred, traced or divulged and / or disclosed to third party in full / part not misused in any other form. This technical information, drawing etc. shall be returned to the company with all approved copies and duplicates. In the event of any breach of this contract, the contractor shall indemnify the company against any loss, cost of damages or claim by any party in respect of such breach.

**15.0 Effective Date of Commencement of Contract:**

The date of the issue of the Letter of Intent shall be treated as the effective date of the commencement of contract.

**16.0 Taxes & Duties :**

All taxes, duties, levies of whatsoever nature, entry tax, octroi, turnover tax, service tax, income tax, work contract tax etc., levied by State or Central Governments or local bodies shall be to the contractor 's account including any taxes, duties and levies which may be levied fresh by the Governments during currency of the Contract. The contractor shall furnish their Excise/Sales Tax registration number, PAN No. etc. in the bid documents as well as Invoice/Challans etc.

**17.0 Time – The Essence of Contract**

The time and the date of completion of the works as stipulated in the Letter Of Intent / Purchase order issued to the Contractor shall be deemed to be the essence of the "Contract". The work has to be completed not later than the aforesaid Schedule and date of completion.

**18.0 Liquidated Damages (LD)**

- 18.01 If the completion of the works is delayed beyond the supply schedule as stipulated in purchase order/LOI, then the Contractor shall be liable to pay to the Purchaser as LD for such delay, a sum of 1% of the contract price for every week delay or part thereof. The LD shall be computed on the unexecuted value of works as per the installation schedule.
- 18.02 The total amount of LD for delay under the contract will be subject to a maximum of ten percent (10%) of the contract price
- 18.03 The Purchaser may, without prejudice to any method of recovery, deduct the amount for such damages from any amount due or which may become due to the Contractor or from the Performance Bank Guarantee or file a claim against the contractor.

**19.0 The Laws and Jurisdiction of Contract:**

- 19.01 The laws applicable to this Contract shall be the Laws in force in India.
- 19.02 All disputes arising in connection with the present Contract shall be settled amicably by mutual consultation failing which shall be finally settled as per the rules of Arbitration and Conciliation Act, 1996 at the discretion of Purchaser. The jurisdiction of arbitration shall be at Bhubaneswar, Orissa, India

**20.0 Events of Default**

- 20.01 Events of Default. Each of the following events or occurrences shall constitute an event of default ("Event of Default") under the Contract:
  - (a) Seller fails or refuses to pay any amounts due under the Contract;
  - (b) Seller fails or refuses to execute the works conforming to this Bid document / specifications, or fails to execute the work within the period specified in work order or any extension thereof
  - (c) Seller becomes insolvent or unable to pay its debts when due, or commits any act of bankruptcy, such as filing any petition in any bankruptcy, winding-up or reorganization proceeding, or

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acknowledges in writing its insolvency or inability to pay its debts; or the Seller's creditors file any petition relating to bankruptcy of Seller;

- (d) Seller otherwise fails or refuses to perform or observe any term or condition of the Contract and such failure is not remediable or, if remediable, continues for a period of 30 days after receipt by the Seller of notice of such failure from Purchaser.

### 21.0 Consequences of Default.

- (a) If an Event of Default shall occur and be continuing, Purchaser may forthwith terminate the Contract by written notice.
- (b) In the event of an Event of Default, Purchaser may, without prejudice to any other right granted to it by law, or the Contract, take any or all of the following actions;
  - (i) present for payment, to the relevant bank the Performance Bank Guarantee;
  - (ii) get the work completed through the engagement of any third party; and/or
  - (iii) recover any losses and/or additional expenses Purchaser may incur as a result of Seller's default.

### 22.0 Force Majeure

- 22.01 The term "Force Majeure" as employed herein include, but are not limited to, acts of God or force of nature, landslide, earthquake, flood, fire, lightning, explosion, major storm (hurricane, typhoon, cyclone etc.) or major storm warning, tidal wave, shipwreck and perils of navigation, act of war (declared or undeclared) or public enemy, strike (excluding employee strikes, lockouts or other industrial disputes or action solely among employee of Contractor or its subcontractors) act or omission of sovereign states or those purporting to represent sovereign states, blockade, embargo, quarantine, public disorder, sabotage, accident or similar events beyond the control of the parties or either of them.

Force Majeure shall not include occurrences as follows:

- (a) Late delivery of materials caused by congestion at Seller's facilities or elsewhere, an oversold condition of the market, inefficiencies, or similar occurrences.
- (b) Late performance by Seller and/or Sub-Seller caused by unavailability of raw materials, supervisors or labour, inefficiencies or similar occurrences.
- (c) Mechanical breakdown of any item of Seller's or its Sub-Seller's equipment, plant or machinery.
- (d) Delays due to ordinary storm or inclement weather or
- (e) Non-conformance by Sub-Seller.

Unless the delay arises out of a Force Majeure occurrence and is beyond both Seller's and Sub-Seller's or Seller's control and an alternate acceptable source of services, equipment or material is unavailable. Additionally, Force Majeure shall not include financial distress of Seller or any Sub-Seller.

- 22.02 In the event of either party being rendered unable by Force Majeure to perform any obligation required to be performed by them under the Contract, the relative obligation of the party affected by such Force Majeure shall be suspended for the period during which such cause lasts. Time for

performance of the relative obligation suspended by Force Majeure shall then stand extended by the period for which cause lasts.

22.03 Upon the occurrence of any Force Majeure event, the party so affected in the discharge of its obligation shall promptly, but no later than seven (7) days give written notice of such event to the other party. The affected party shall make every reasonable effort to remove or remedy the cause of such Force Majeure or mitigate its effect as quickly as possible. If such occurrence results in the suspension of all or part of the Work for a continuous period of more than, the parties shall meet and determine the measures to be taken.

22.04 Any delay or failure in performance by either party hereto shall not give rise to any claims for damages or loss of anticipated profits it, and to the extent, such delay or failure is caused by Force Majeure.

### **23.0 Transfer and Sub-Letting**

The Contractor shall not sublet, transfer, assign or otherwise part with the Contract or any part thereof, either directly or indirectly, without prior written permission of the Purchaser.

### **24.0 Third party insurance**

Contractor shall take the Insurance of Equipment during Transit. Any Claim pertaining to this shall be the responsibility of the Contractor.

### **25.0 Recoveries**

When ever under this contract any money is recoverable from and payable by the bidder, the purchaser shall be entitled to recover such sum by appropriating in part or in whole by detecting any sum due to which any time thereafter may become due from the Seller in this or any other contract. Should the sum be not sufficient to cover the full amount recoverable the bidder shall pay to the purchaser on demand the remaining balance.

### **26.0 Waiver**

Failure to enforce any condition herein contained shall not operate as a waiver of the condition itself or any subsequent breach thereof.

### **27.0 Indemnification**

27.01 Notwithstanding contrary to anything contained in this Tender, Contractor shall at his costs and risks make good any loss or damage to the property of the Purchaser and/or the other Contractor engaged by the Purchaser and/or the employees of the Purchaser and/or employees of the other Contractor engaged by the Purchaser whatsoever arising out of the negligence of the Contractor while performing the obligations under this contract.

27.02 Subject to this Clause 23.0 Purchaser shall, at its sole cost and expense, defend, indemnify and hold harmless Contractor and his assignees /or the employees of the Contractor whatsoever arising out of the negligence or willful act or omission or from the default of the Purchaser in the performance of the Contractor.

**SECTION - IV**

**(GENERAL TECHNICAL SPECIFICATIONS)**

**Tender Notification : CSO/09/Electrical & Civil Installation Works  
Date: 15.07.2008; (Revised)**

**2008 - 2009**

**GENERAL TECHNICAL SPECIFICATIONS**

**A) Construction of New 11 KV Sub-Station & Associated Incoming HT Line and Outgoing LT Line with AB Cable**

**B) Up-gradation & Renovation of Existing 11 KV Sub-station**

**1.0 Survey for Sub-Station & Line :**

1.1 Route survey including pole spotting shall have to be carried out by the contractor. The Contractor should note that Purchaser shall not furnish the topographical maps prepared by Survey of India but shall make available any assistance that may be required in obtaining the topographical maps, if specifically requested by the contractor.

1.2 Contractor shall work out details/requirement of HT and LT lines through appropriate survey during execution. The contractor is required to make a detailed route survey for optimization of route length for erection of the line and fix up pole location. The maximum permissible span shall be as per REC Specifications. However, the actual span may vary as per site conditions. The contractor shall submit a detailed rout map of line for purchaser's approval. Ground profiling is required to be carried out at various crossings and special locations only. Failure containment poles to prevent cascade failure along the entire length shall be provided. For 11 kV lines a failure containment pole/structure shall be provided at the following locations. During detailed engineering, the contractor shall propose failure containment structures for approval of the purchaser.

- i) At some tapping points & dead end poles.
- ii) At all the points where DT is to be installed
- iii) At all the points as per REC construction dwg. No. A-10 ( kfor the diversion angle of 1-60 degree)
- iv) At the distance of 1 km max., from the last Failure containment pole/structure.
- v) Both side poles at all the crossing for main road, nallaha, railway crossing etc.

1.3 Tapping points & roads where the failure containment structure is to be erected shall be decided during detailed engineering.

**2.0 Optimisation of Pole Location**

**2.1 Pole Spotting**

To optimize the line length, the contractor shall spot the poles in such a way so that the line is as close as possible to the straight line drawn between the start & end point of the line. The pole locations shall be marked with wooden pegs.

**2.2 Crossings**

2.2.1 **Road Crossings:-** At all road crossings, the poles shall be fitted with strain type insulators. The ground clearance from the road surfaces under maximum sag condition shall be as per IS 5613

2.2.2. **Railway Crossings-** The railway crossing overhead or underground shall be carried out in the manner as approved & prescribed by the railway authorities from time to time.

- a) The crossing shall normally be at right angle to the railway track.

- b) In case crossing is required to be done through underground cable, cost of the cable including laying and other accessories shall be in the scope of the contractor.
- c) During detailed engineering, the contractor shall submit his proposed arrangement for each railway crossing to the purchaser.
- d) The approval for crossing railway track shall be obtained by the Purchaser from the Railway Authority.

2.2.3 **Power Line Crossings-** Where the line is to cross over another line of the same voltage or lower voltage, provisions to prevent the possibility of their coming into contact with each shall be made in accordance with the Indian Electricity Rules, 1956 as amended from time to time. All the works related to the above proposal shall be deemed to be included in the scope of the contractor.

### 3.0 Details Enroute

After survey and finalization of route, the contractor shall submit detailed route map for each line. This would be including following details:

- a) All poles on both sides of all the crossings shall be tension poles i.e. disc type insulators shall be used on these poles. At all the crossing described above the contractor shall use protective guarding as per REC Construction Standard A-1 to fulfill statutory requirements for 11 kV trunk & main spur line. 11 kV branch spur line, being in the village, protective guarding shall be used all along with line.
- b) Clearance from Ground, Building, Trees etc. – Clearance from ground, buildings, trees and telephone lines shall be provided in conformity with the Indian Electricity Rules, 1956 as amended up to date. The vendor shall select the height (out of 8 mtr/ 9mtr) of the poles in order to achieve the prescribed electrical clearances.

### 4.0 Final Schedule

The final schedule including Bill of quantity indicating location of poles specifically marking locations of failure containment pole/structure, DTs 11 kV line sectionlisers, line tapping points; angle of deviation at various tension pole locations, all type of crossings of an other details shall be submitted for the approval of the Purchaser. After approval, the contractor shall submit six more sets of the approved documents along with one set in reproducible form to purchaser for record purpose.

### 5.0 Details of Line Routes- For further details, vendor is advised to contact:

Engineering in charge, NESCO/WESCO/SOUTHCO

Exact address & contact numbers shall be furnished to successful bidder at after award.

**6.0 Pole & Pole Erection**

**6.1 Type of Poles**

Pre-stressed Cement Concrete (PSC) poles of 9 & 8 mts shall be used for both 11 KV & LT lines respectively. The specification for poles is enclosed with this specification. In order to maintain the required ground clearances and requisite safety margins at various crossing points etc. PSC poles of 9 mtr PSC pole shall be used for line construction.

**6.2 Excavation of Pits**

- a) For excavation of the foundation pit, a hole should be drilled in the ground preferably with the use of earth-augers. However, if earth-augers are not available, a pit shall be made in the direction of the line for all the locations, except the locations of failure containment structures.

The planting depth of pole over the base concrete should be maintained as below.

SI No.	Length of Pole (Mt.)	Planting Depth in ground (Mt.)
1.	8	1.5
2	9	1.5
3	13	2.1

- b) Excavation cost for pits shall be included by the contractor in the bid for pole erection for following type of soils inclusive of dewatering of pits and shoring and shuttering wherever necessary.
- i) All type of soils and soil conditions but excluding hard rock.
  - ii) Hard rock

No separate claim for dewatering during excavation, shoring and shuttering shall be entertained. For hard rock, the excavation cost per location shall remain same for all type of foundations.

- c) In case of non-availability of earth-augers, the pits shall be excavated with pick axes, crow bar and shovels. Controlled blasting shall be permitted only in case of hard or rocky soil. The contractor shall be responsible for any damage or accidents arising out of the process of blasting. Blasting is not permitted if the area around location is inhabited. In such case, the contractor shall have to follow other methods like drilling etc.

**6.3 Foundation & Pole Erection**

Size of foundation of each type of pole is given at Annexure-A of this section.

The type of foundation for individual poles shall be decided during detailed engineering.

- a) **Erection of Poles:** The poles are to be erected in alignment with utmost care. The poles shall then be lifted to the pit with the help of wooden supports. The pole shall then be kept in the vertical position with the help of 25 mm (min) manila ropes which shall act as the temporary anchor. The verticality of the pole shall be checked by spirit level in both longitudinal & transverse directions. Once, this is done, the back filling/concreting shall be

done in the pit. The temporary anchor shall be removed only when poles set properly in the foundation.

b) **Earthing of Poles**

- a) In 11 kV line, each poles shall be earthed with coil earthing as per REC construction standard J-6
- b) In LT lines every fifth pole and as required by the provisions of clause 5.2 of this section be earthed with coil earthing as per REC construction standard J-6
- c) Notwithstanding the above, type & no. of earthing of poles shall be decided during execution in line with the practice being followed by NESCO/WESCO/SOUTHCO.

**7.0 Danger Boards**

The vendor shall provide & install danger plates on all 11 kV DP structures and at all poles where DT is installed. The danger plates shall conform to REC specification No. 57/1993

**8.0 Anti-climbing Devices**

The vendor shall provide and install anti-climbing device on all 11 kV DP structures and at all poles where DT is installed. This shall be done with G.I. Barbed wire. The barbed wire shall conform to IS-278 (Grade A1). The barbed wires shall be given chromating dip as per procedure laid down in IS: 1340.

**9.0 Insulators & Hardware Fittings.**

**9.1 For 11 kV Line**

- a) Cross Arm for 11 kV line: The contractor shall install "V" Shape cross arm GI/MS as per REC Construction Standard A-6
- b) Back Clamp for "V" cross arm: The contractor shall install Back Clamp for "V" cross arm as per REC Construction Standard K-2.
- c) Pole Top Bracket: The contractor shall install Pole top Brackets as per REC Construction Standard A-7
- d) Insulators and Insulator Fittings: The contractor shall supply & install Disc & Pin insulator REC Construction Standards No. C-1 to C-5

**9.2 LT Line on Aerial Bunched Conductor**

- a) Suspension clamp & Eye Hook: The contractor shall install as per REC Construction standards No. E-34
- b) Dead End Clamp & Eye Hook: The contractor shall install as per REC Construction Standards No. E-35.
- c) Non Tension LT Connectors: The contractor shall install as per REC Construction Standards No.E-36.

**10.0 Fittings Common to all Line**

- a) Pin Insulator Binding: The contractor shall use AL. Binding wire for binding shall be as per REC Construction Standards No. C-5.
- b) Mid Span Compression Joint & Repair Sleeves: The contractor shall supply & install the Mid Span Compression Joint and Repair Sleeves as per IS: 2121 (Part II).

- c) Guy/Stay wire Clamp: The contractor shall supply & install Guy/Stay wire Clamp as per REC Construction Standard G-1

#### 11.0 Stay/Guy Sets

- a) The Stay/Guys shall be used at the following pole locations;
  - i) At all the tapping points & dead end poles
  - ii) At all the points where DT is to be installed
  - iii) At all the points as per REC construction dwg. No. A-10 ( for the diversion angle of 10-60 degree)
  - iv) At every alternative pole for 11 kV line ( two sets)
  - v) Both side poles at all the crossing for road, nallaha, railway crossings etc.
- b) The arrangement and number of stay sets to be installed on different pole structures shall be as per REC Construction Standards no. A-23 to A-27, G-5 & G-8. However, this shall be decided finally during erection, as per the advice of Engineer In charge of NESCO/WESCO/SOUTHCO.
- c) The stay set to be installed complete in all respect and would broadly consists of following items:
  - i) 7/10 SWG G.I. Stay wire for 11 kV lines and 7/12 SWG for LT line as per REC Specification No. 46/1986
  - ii) Stay Insulator type A for LT line and type C for 11 kV line as per REC Specification No. 21/1981
  - iii) Turn Buckle.
  - iv) Anchor rod and plate ( Hot Dipped galvanized). Thimbles and Guy Grip

Complete stay set shall be as per REC Construction Standards no. G-1. The stay clamp is envisaged as GS structure along with other clamps brackets etc.

#### 12.0 Erection of stay sets

The contractor shall install the stay set complete in all respect. This includes excavation of pit size 0.5 x0.5 x 1.6 metre in all kinds of soil including laterite/hard rocks. Stay plate and anchor rod shall be pre cast with PCC in the ratio 1:2:4 (the volume of PCC shall be 0.5 x0.5x0.8 meter) and shall be placed in the bottom of the pit. The rest (upper half) of the pit shall be filled with excavated soil duly compacted layer by layer. An angle between 30 to 45 degrees shall be maintained between stay wire and the pole. The stay wire shall be used with a stay insulator at a height of 5 mts. above ground level with F.I. turn buckle.

#### 13.0 CONDUCTOR

##### 13.1 Type of Conductors

- a) For 11 kV Line: 34 mm<sup>2</sup> / 55 mm<sup>2</sup> All Aluminum Alloy Conductor (AAAC) shall be used in 11 KV main & S/S associated lines.
- b) For LT line, Three/single core aluminum cross link polyethylene (XLPE) INSULATED Aerial Bunched Cable (ABC) with bare messenger wire. The conductor shall be stranded aluminum while the messenger wire shall be of stranded aluminum alloy. The messenger wire would act as neutral wire also.

**13.2 Conductor Configuration**

The 11 kV feeders shall be a 3 phase 3 wire system. 'V' shape conductor configuration shall be used.

**13.3 Stringing and Installation of Line with Bare Conductors.**

**General**

- a) The scope of erection work shall include the cost of all labour, tools and plants such as tension stringing equipment and all other incidental expenses in connection with erection and stringing work. The Bidders shall indicate in the offer the sets of stringing equipment he would deploy exclusively for work under each package. The stringing equipments shall be of sufficient capacity to string AAA conductor equivalent to weasel & rabbit & dog ACSR conductor.
- b) The Contractor shall be responsible for transportation to site of all the materials to be provided by the Contractor as well as proper storage, insurance etc. at his own cost, till such time the erected line is taken over by the Purchaser.
- c) Contractor shall set up required number of stores along the line and the exact location of such stores shall be discussed and agreed upon with the Purchaser.

**13.4 Insulator Fixing**

Pin insulators shall be used on all poles while strain insulators shall be used on all angle & dead end poles. Damaged insulators and fittings, if any, shall not be used. Prior to fixing, all insulators shall be cleaned in a manner that shall not spoil, injure or scratch the surface of the insulator, but in no case shall any oil be used for this purpose. Torque wrench shall be used for fixing various line materials and components, such as suspension clamp for conductor, whenever recommended by the manufacturer of the same.

**13.5 Running Out of the Conductors**

- a) The contractor shall be entirely responsible for any damage to the pole or conductors during stringing. The conductors shall be run out of the drums from the top in order to avoid damage to conductor
- b) A suitable braking device shall be provided to avoid damaging, loose running out and kinking of the conductors. Care shall be taken to ensure that the conductor does not touch and rub against the ground or objects, which could scratch or damage the strands.
- c) The sequence of running out shall be from the top to down i.e. the top conductor shall be run out first, followed in succession by the side conductors. Unbalanced loads on poles shall be avoided as far as possible. Wherever applicable, inner phase off-line conductors shall be strung before the stringing of the outer phases is taken up.
- d) When lines being erected run parallel to existing energized power lines, the Contractor shall take adequate safety precautions to protect personnel from the potentially dangerous voltage build up due to electromagnetic and electrostatic coupling in the pulling wire, conductors and earth wire during stringing operations.

- e) The Contractor shall also take adequate safety precautions to protect personnel from potentially dangerous voltage build up due to distant electrical storms or any other reason.

**13.6 Repair to Conductors**

- a) The conductor shall be continuously observed for loose or broken strands or any other damage during the running out operations.
- b) Repair to conductors, if necessary, shall be carried out with repair sleeves and not more than one repair sleeve will be used in one span.
- c) Repairing of the conductor surface shall be carried out only in case of minor damage, scuff marks, etc. The final conductor surface shall be clean, smooth and free from projections, sharp points, cuts, abrasions etc.
- d) The Contractor shall be entirely responsible for any damage to the poles, insulators etc during stringing.

**13.7 Stringing of Conductor**

- a) The stringing of the conductor shall be done by the standard stringing method.
- b) The Bidder shall submit complete details of the stringing method for owner's approval. Prior to stringing, the contractor shall submit the stringing charts for the conductor showing the initial and final sags and tension at various temperatures and spans, along with equivalent spans in the lines for the approval of the purchaser.
- c) Conductors shall not be allowed to hand in the stringing blocks for more than 96 hours before being pulled to the specified sag.
- d) Conductor creep are to be compensated by over tensioning the conductor t a temperature of 26°C lower than the ambient temperature or by using the initial sag and tensions indicated in the tables.
- e) Derricks or other equivalent methods shall be used to ensure that normal services are not interrupted and any property is not damaged during stringing operations for roads, telecommunication lines, power lines and railway lines. However, shut-down shall be obtained when working at crossings of overhead power lines. The contractor shall make specific request for the same to the purchaser.

**13.8 Jointing**

- a) When approaching the end of a drum length at least three coils shall be left in place when the stringing operations are stopped. These coils are to be removed carefully, and if another length is required to be run out, a joint shall be made as per the recommendations of the accessories manufacturer.
- b) Conductor splices shall not crack or otherwise be susceptible to damage during stringing operation. The Contractor shall use only such equipment/methods during conductor stringing which ensures complete compliance in this regard.
- c) All the joints on the conductor shall be of compression type, in accordance with the recommendations of the manufacturer, for which all necessary tools and equipment like compressors, dies etc., shall be arranged by the contractor. Each part of the joint shall be cleaned by wire brush till it is free of rust or dirt, etc. This shall be properly greased with anti-corrosive compound if recommended by the manufacturer, before the final compression is carried out with the compressors.

- d) All the joints or splices shall be made at least 30 metres away from the pole. No joints or splices shall be made in spans crossing over main roads, railway line and small river spans. Not more than one joint per conductor per span shall be allowed. The compression type fittings shall be of the self centering type or care shall be taken to mark the conductors to indicate when the fitting is centred properly.
- e) During compression or splicing operation, the conductor shall be handled in such a manner as to prevent lateral or vertical bearing against the dies. After compressing the joint, the aluminium sleeve shall have all corners rounded; burrs and sharp edges removed and smoothed.
- f) To avoid any damage to the joint, the contractor shall use a suitable protector for mid span compression joints in case they are to be passed over pulley blocks/aerial rollers. The pulley groove size shall be such that the joint along with protection can be passed over it smoothly.

**13.9 Tensioning and Sagging Operations:**

- a) The tensioning and sagging shall be done in accordance with the approved stringing charts or sag tables.
- b) The sag shall be checked in the first and the last section span for sections up to eight spans and in one additional intermediate span for sections with more than eight spans

Tensioning and sagging operations shall be carried out in calm weather when rapid changes in temperature are not likely to occur.

**13.10 Clipping In**

- a) Clipping of the conductors into position shall be done in accordance with the manufacturer's recommendations.
- b) Jumpers at section and angle towers shall be formed to parabolic shape to ensure maximum clearance requirements. Pilot pin insulator shall be used, if found necessary, to restrict jumper swing & to ensure proper clearance to design values.
- c) Fasteners in all fittings and accessories shall be secured in position. The security clip shall be properly opened and sprung into position

**13.11 Fixing of Conductors and Earth wire Accessories**

Conductor and earth wire accessories supplied by the Contractor shall be installed by the Contractor as per the design requirements and manufacturer's instructions. While installing the conductor and earth wire accessories, proper care shall be taken to ensure that the surfaces are clean and smooth and that no damage occurs to any part of the accessories or of the conductors.

**13.12 Replacement:**

If any replacements are to be effected after stringing and tensioning or during maintenance e.g. replacement of cross arms, the conductor shall be suitably tied to the pole at tension points or transferred to suitable roller pulleys at suspension points.

**14.0 Stringing of Aerial Bunched Cable**

**14.1 Fixing of Suspension & Tension/ Dead end fittings to the Poles.**

The suspension clamp is to be hung on eye hook/ suspension hook, which is fixed to the pole at a minimum distance of 0.15 mt. from top end of the pole. The messenger wire of bunched cable resting on a pulley is separated from the cable by separating wedges and inserted in the conductor groove of the suspension clamp. The bolt is tightened to a torque of 20 N after which the pulley and wedges are to be removed. The cable is tied to the messenger wire with nylon tie on both sides of clamps. A hole of minimum diameter is to be made through poles for erection of suspension clamp. In case, drilling is not possible to make hole through poles, pole clamps/eye hook 50 x 6 mm flat shall be used. Eye/hook pole clamp shall be made to suite the pole width. This shall be installed as per Fig. No. 2 (a) & 2(b) of REC Construction Standard No. E-34 for suspension clamps and as Fig. No. 2 (a) of REC Construction Standard No. E-35 for tension (Dead end) clamps.

**14.2 Fittings & Accessories**

The following hardware fittings and accessories shall be used to install, erect & join the aerial bunched cable.

- a) Suspension Hook (Eye-Hook) – The Contractor shall install the suspension hook (eye hook). This hook shall be used to attach the AB cable on the pole by means of a dead end clamp in terminal poles and for attaching a suspension clamp in straight lines and angle up to 90 Deg.-
- b) Suspension fittings & the corresponding eye hook shall be as per REC Construction Standard No. e – 34.
- c) Dead End fittings shall be bolted type & the corresponding eye hook shall be as per REC Construction Standard No. E-35.
- d) Nylon Tie- The contractor shall supply nylon ties. These ties shall be used for tying the conductors with the messenger wire to prevent the phase conductors from chatting against suspension clamp. The nylon tie is made of weather resistant black nylon.
- e) Connectors- The contractor shall supply connector. These shall be used as non-tension aluminum to aluminum connections for conductor joints.
- f) Plastic Covers for Connectors- The contractor shall install Plastic Covers for Connectors. These covers shall be used with aluminum/aluminum connectors to protect connectors against corrosion caused by climatic conditions.

**14.3 Installation of Cable**

The contractor shall be fully responsible for all activities related to installation of AB cable. His responsibilities consists of

- i. handling of the cable
- ii. pulling of the cable
- iii. stringing of the cable

iv. joining of the cable

**a) Handling of AB Cable.**

The contractor shall observe following precautions while handling the AB Cable:

- i. The cable drums must be stored and transported in an upright position.
- ii. While loading/unloading, the drums shall not be thrown from transport vehicles.
- iii. Cable contact with sharp articles shall be avoided.
- iv. In order to prevent damage to the insulation, the cable shall not be dragged on the ground. Pulleys shall be used for this purpose.
- v. In order to prevent strands from spreading, always cut the cable with a cutter.
- vi. Use nylon ties or electrical tape to prevent the cable from spreading away from messenger wire after the cutting. Staple the end of the cable on to the drum in order to prevent loosening.
- vii. Do not remove the protective boards from the cable drum before the cable is pulled off the drum
- viii. While moving the drum by rolling it on ground, always roll the drum in the direction indicated by the arrow on the flange. When pulling the cable, the spinning direction must be opposite.
- ix. Do not store the drums on wet soil, sandy or humid places
- x. Store the accessories in good order for quick easy and correct handling

**b) Pulling the Cable.**

The principle is to pull the cable under mechanical tension so that contact with the ground or any other obstacles is avoided.

- i. The cable drum should be perfectly in alignment with line to be strung and fixed about 15-20 mts. From the holding the first pulley. Open the cover of the drum to check and ensure that the insulation is not damaged.
- ii. The pulling which is sent up upto the cable drum is about 15-20 mts from the pole holding to the last pulley.
- iii. The pulleys are directly hung to such hook on the poles. The pulley tandem is to be used on angle poles if the line is deviating more than 60°
- iv. Pull the guiding rope through all the pulleys.

- v. Normal care shall be taken to assume a smooth passage of whole cable through the pulleys, especially in the first pole and on angle poles. One worker should act as brakeman at the cable drum so that the cable is not loosened during the pulling. One worker should follow the cable going through the pulleys and stop the pulling if anything goes wrong.

**c) Stringing Operations.**

The contractor shall follow one of the following methods for stringing.

**1. Sag Method**

- i Fix a dead end clamp on the neutral messenger wire at the pole. The messenger shall be bent behind the clamp to ensure sufficient friction between the messenger and the clamp in the initial stays during stringing. Bind the conductor together beside the dead end clamp using a nylon tie.
- ii Hand the clamp on the hook at the end pole
- iii Rewind simultaneously the slack cable length on the cable drum.
- iv Attach the 'come along' on the neutral messenger wire at the first pole of the line.
- v Tighten the cable by the shackle or the winch when required sag is obtained.
- vi Hand the dead end clamp on the hook and install it on the neutral messenger.
- vii Remove the come along
- viii Bind the conductors together on the messenger wire using a nylon tie
- ix Check the length of the cable needed and cut it at an appropriate point.

**2. Dynamometer Methods**

- i Start the operation as above up to the stage.
- ii Install the dynamo meter on the come-along
- iii Tighten the cable at the required value by reading the Dynamometer
- iv Finish the stringing as in the sag method operation.

**d) Jointing of Cables.**

- i) Jointing of cable shall be in accordance with clause 12.3.3 of IS 1255:1993 and manufacturers special instructions given hereunder. This joining is to be done by skilled personnel.

- ii) Cable Damage and Repairs: If the cable is damaged for whatever reasons, it shall be brought to the notice of the engineer and shall not be used without his approval.
- iii) No joint or splice shall be made in spans crossings over main roads, small rivers or in tension spans. Not more than one joint in the cable shall be allowed in one span.
- e) The stringing rate include rates for paving, stringing, clamping, jointing, tensioning and fitting of all necessary accessories.

#### 14.4 Final Checking, Testing and Commissioning

- a) After stringing have been done as approved by the engineer, to ensure that everything is complete in all respects, the works shall be thoroughly inspected keeping in view the following main points.
- b) All the bolts and nuts should be of GI materials as per relevant IS.
- c) The stringing of the cable has been done as per the approved sag and desired clearances are achieved.
- d) No damage, minor or major to the cable, messenger wire and accessories
- e) The contractor shall submit a report to the above effect to the Engineer in Charge, who shall inspect and verify the correctness of the report. In case it is noticed that some or any of the above is not fulfilled, the engineer shall get such items rectified by the contractor no extra cost to the purchaser.
- f) After final checking, the line shall be tested for insulation resistance in accordance with IS 1255:1983. All arrangements for such testing or any other test desired by the Engineer-in-charge shall be done by the contractor and necessary labour, transport and equipment shall be provided by him. Any defect found out as a result of such tests shall be rectified by the contractor, forthwith at no extra cost to the purchaser.
- g) In addition to the above, the contractor shall be responsible for testing and ensuring that the total and relative sags of the cable as within the specified tolerance. Such tests shall be carried out at selected points along the route as required by the Engineer-in-charge and the contractor shall provide all necessary equipment and labour to enable the tests to be carried out. After satisfactory test on the line and approval by the Engineer in Charge, the line shall be energized at full operating voltage before handing over. The cable shall be megger tested before and after jointing. The AB cable shall be tested for.
  - i) Continuity of messenger wire and conductors
  - ii) Absence of cross phasing
  - iii) Insulation resistance to earth
  - iv) Insulation resistance between conductors
  - v) DC Resistance
  - vi) Capacitance

As per IS 1255:1983 of the latest issue and as per manufacturers instructions.

- h) Sufficient backfilled earth covers each foundation pit and is adequately compacted.
- i) All poles are used strictly according to final approved drawing and are free of any defect or damage whatsoever.
- j) The stringing of the conductors and earth wire has been done as per the approved sag and tension charts and desired clearances as clearly available.
- k) All conductor and messenger wire accessories are properly installed.
- l) All other requirements for completion of works such as fixing of danger plate and anti-climbing device have been fulfilled.
- m) Wherever required, the proper revetment ( erosion protection) is provided
- n) The insulation of the line as a whole is tested by the Contractor through provision of his own equipment, labour etc., to the satisfaction of the Purchaser.
- o) Proper earthing of the poles.

**14.5 HT/LT/Road Crossing Guarding.**

The contractor shall provide & install protective guarding as per REC construction standard A-1 for 11 kV line, the guarding shall be provided at all the crossing i.e. road, telecommunication & power lines, railway line, nallaha etc.,.

The contractor is required to follow local statutory regulations stipulated in Electricity (Supply) Act 1948, Indian Electricity Rules 1956 as amended and other local rules and regulations referred in these specifications.

**Reference Standards**

The codes and/or standards referred to in the specifications shall govern, in all cases wherever such references are made. In case of a conflict between such codes and/or standards and the specifications, latter shall govern. Such codes and/or standards, referred to shall mean the latest revisions, amendments/changes adopted and published by the relevant agencies unless otherwise indicated. Other internationally accepted standards which ensure equal or better performance than those specified shall also be accepted, subject to prior approval by the Purchaser. In case no reference is given for any item in these specifications, latest REC specification & Construction Standards shall be referred to.

**14.6 HT/LT/Road Crossing Guarding.**

The contractor shall provide & install protective guarding as per REC construction standard A-1. For trunk & main spur 11 kV line, the guarding shall be provided at all the crossing i.e. road, telecommunication & power lines, railway line, nallaha etc.,. For branch spur line, the guarding shall be provided all along the line.

**15.0 Erection of Distribution Transformers**

**15.1 General**

**15.1.1** As a part of this scheme, there is a provision to install distribution transformers on 11 kV line. The contractor shall supply, install, test and commission 1 phase, 11 kv/240 volts DT of 25 & 1 phase 16 KVA capacity

- a. The contractor's scope is to install distribution transformers including all support structures, channels, clamps, nut & bolts etc for DT and all other accessories. On 11 kV side, the accessories would be LA, 11 KV HG fuse as per REC standard

while on LT side the contractor shall install LT Distribution Box. On foundation. The construction of foundation is in the scope of contractor. Any other item, not specifically mentioned but necessary for safe operation of the distribution transformer is deemed to be included in the scope of the contractor.

- b. LTDB shall be mounted on the distribution transformer and provision shall be kept for it. LTDB shall be used to take off LT feeders and service connections as well. Distribution box shall have proper locking arrangement
- c. The tentative location for installation of DT shall be specified by the purchaser during detailed engineering.

## **15.2 Erection of Transformers**

1. All distribution transformers shall be installed on 11 kV line DT Poles / Plinth. DTs shall be erected on single pole structure as per REC Construction Standard No. F-14 & F-19.
2. Connectors- Bimetallic connectors shall be provided on HT side of DT. The connectors shall be as per REC specifications.
3. The HT side connections shall be made with AAA conductor equivalent to ACSR weasel conductor. LT side connections between bushings and MCCB and between MCCB and LT BUS shall be made with insulated flexible copper braid/copper cable.
4. The contractor shall properly dress all the LT cables emanating from distribution box and terminate them at the respective overhead LT lines. The contractor shall provide all jointing material i.e. sleeves etc and carry out all jointing works. All the cable (ABC for LT line and service cables) shall be anchored to the DT poles using clamps/dead end clamps for LT line and in no case the load of the cable shall be transferred to LTBD. The contractor shall provide all such clamps, nuts & bolts at no extra cost to the purchaser.
5. The contractor shall provide and install a Sign Board of 1ft x 1 ft size at each DT location. The sign board shall be mounted on the pole with suitable clamps. The board shall be of 1.6 mm (min) GI sheet and epoxy painted( minimum paint thickness 75 micron) The lay out & the content to be written on the board shall be decided during detailed engineering. The boards shall be prepared through screen printing or better technology. The cost of providing and installing the board shall be included in the quoted rates for DT erection.

## **16.0 Distribution Box**

LT distribution box (LTDB) : Installation of distribution box including foundation as per approved drawing.

## **17.0 Anti-climbing Devices**

The contractor shall provide & install anti-climbing device on all 11 kV DP structures and at all poles where DT is installed. This shall be done with G.I Barbed wire. The barbed wire shall conform to IS-278 (Grade A1). The barbed wires shall be given chromating dip as per procedure laid down in IS: 1340. In case of a DP structure anti climbing device shall be erected on both the poles.

**C) CONSTRUCTION OF BARBED WIRE FENCING / BOUNDARY WALL WITH GATE AROUND 11/0.4 KV SUB-STATIONS**

**1.0 BARBED WIRE FENCING**

- 1.1 It is proposed to construct barbed wire fencing around Pole mounted 11/0.4 KV substations (25 KVA / 63 KVA / 100 KVA). Entire Sub station shall be provided with GI barbed wire fencing. The GS barbed wire shall conform to IS: 278. GS barbed wire shall be of Type A or B with size designation 2 or 3 as specified in the IS
- 1.2 For the purpose of fence post ISMC-75 channel shall be used. The gap between consecutive fence posts shall be maximum 2 mtrs. The height of the fence post above ground shall be 2mtrs & at least 0.5 mtr shall be embedded in concrete of 300 x 300mm area with a depth of 0.75 mtr. The post shall be painted with two coats of primer & two coats of zinc rich paint.
- 1.3 The GS barbed wire shall be placed at a gap of 200 mm horizontally along the entire height of the post and secured tightly with the fence post by suitable arrangement. The bottom most wire shall have a ground clearance of approximately 100 mm. Barbed wire shall also be placed along both the diagonal from top of one post to the bottom of another.

**2.0 BOUNDARY WALL**

- 2.1 It is proposed to construct Boundary Wall around Plinth mounted 11/0.4 KV substations (250 KVA / 315 KVA / 500 KVA).The contractor shall design and construct boundary wall around substation area as per requirements of each site location. The boundary wall shall be of height 1.5 Mtr from Ground Level (Gl) and shall be made of brick wall, plastered with 18 mm thick cement sand mortar (mix 1:6).
- 2.2 The boundary wall shall be painted with minimum two coats of colour wash over a base coat of white wash with lime.

**3.0 MS GATE**

- 3.1 Supply and Installation of Double Leaf MS Gate of height 2.5 m height x 3.5 m width, made up of 40x40x6 angle and 35x6 Flat as per approved Drawing. Gate is to be supported on concrete column size 450 x 450 x 3000 m. The gate shall be painted with two coat of approved primer with two coats of approved epoxy paint. The Gate frame shall be made of medium duty MS pipe conforming to relevant IS with welded joints.
- 3.3 The gates shall be fabricated with welded joints to achieve rigid connections. The gate frames shall be painted with one coat of approved steel primmer and two coats of synthetic enamel paint
- 3.4 Gates shall be fitted with approved quality iron hinges, latch and latch catch. Latch and latch catch shall be suitable for attachment and operation of pad lock from either side of gates. Hinges shall permit gates to swing through 180 degree back against fence.
- 3.5 Gates shall be fitted with galvanized chain hook or gate hold back to hold gates open. Double gates shall be fitted with centre rest and drop bolt to secure gates in closed position.
- 3.6 Bottom of gates shall be set approximately 40 mm above ground surface and necessary guiding mechanism shall be fitted.

**D) CONSTRUCTION OF BOUNDARY WALL WITH GATE & CONTROL ROOM BUILDING AT 33/11 KV SUB-STATIONS**

**A) GATES AND BOUNDARY WALL**

1. The Gate frame shall be made of medium duty MS pipe conforming to relevant IS with welded joints.
2. The gates shall be fabricated with welded joints to achieve rigid connections. The gate frames shall be painted with one coat of approved steel primer and two coats of synthetic enamel paint
3. Gates shall be fitted with approved quality iron hinges, latch and latch catch. Latch and latch catch shall be suitable for attachment and operation of pad lock from either side of gates. Hinges shall permit gates to swing through 180 degree back against fence.
4. Gates shall be fitted with galvanized chain hook or gate hold back to hold gates open. Double gates shall be fitted with centre rest and drop bolt to secure gates in closed position.
5. Gates shall be installed in locations shown on drawings. Next to the main gate, a men gate (1.25 m wide, Single leaf) shall also be provided.
6. Bottom of gates shall be set approximately 40 mm above ground surface and necessary guiding mechanism shall be fitted.
7. The contractor shall design and construct boundary wall around substation area as per requirements. The boundary wall shall be of height 2.5 M and shall be made of brick wall in cement sand mortar 1:6. The thickness of wall and its foundation depends on the design calculation produced by contractor and approved by owner, but shall not be less than one brick length. The boundary wall shall be plastered on both external and internal faces with cement sand plaster 1:6 of thickness 20 mm and 12 mm respectively. An additional barbed Y-shaped arm of MS angle 50x50x6 with 3-rows (6nos) barbed wire A-4IS:278. Expansion joints shall be provided as per codal requirements. MS grating shall be provided at required locations for drainage purposes. Top and bottom side of MS grating shall be supported on concrete block or beam. The boundary wall shall be painted with minimum two coats of colour wash over a base coat of white wash with lime. The front portion of boundary wall shall however be with a RC Jali and 12 mm square MS bar top above brickwork and pebbledash plaster finish with colour pigment. The steel work shall be given two coats of synthetic enamel paint of approved make over one coat of primer. A tentative drawing as enclosed for guidance purpose.
8. A Security room shall be provided at the entrance of switchyard. The minimum dimension of the room shall be 3.0m lengths and 3.0m widths. The roof shall be of RCC and aesthetically pleasing.

**B) CONTROL ROOM BUILDING.**

**1.0 General**

The scope for new control room building includes the design, engineering and construction including anti-termite treatment, plinth protection, DPC of Building including sanitary, water supply, electrification, etc. of the control room building. The building shall be of RCC framed

structure of concrete of M20 grade (Min.). For design the following requirement shall be taken care of for new substation. Before execution, the design of RCC structures should be got approved by the contractor from the owner.

If any extension of the Control Room building is required in augmentation /bay extension works of existing substation then extension part shall be compatible to existing one structurally and architecturally but following design criteria shall be adopted for design purposes for R&M of existing substation.

The contractor shall provide and install a Sign Board of 4ft x 3ft in size at each S/s as per details to be finalised during detailed Engineering. The cost of Sign Board shall be included in the cost of control room building.

## 2.0 Control room Building

2.1 Average floor area requirements shall be 13 x 7 sq. mts, which may vary at the time of detailed engineering to suit actual site requirements. The layout of the control room shall be finalized as per detailed engineering to suit project requirements. The minimum dimension of different rooms required for C.R. building have been furnished below.

- a) Control Room
- b) JEs' Room
- c) Battery Room
- d) Store Room
- e) W.C/Bath/W.B
- f) Portico

An open space of 1 m minimum shall be provided on the periphery of the rows of panel board and equipment generally in order to allow easy operator movement and access as well as maintenance.

Any future possibility of annexe building shall be taken care of while finalizing the layout of the control room building.

Minimum headroom of 3 M below soffit of beams/false ceiling shall be considered for rooms. The roof shall have four side sloping roof or flat roof as finalized during detailed engineering.

## 2.2 Design

- a) The buildings shall be designed:
  - 1. To the requirements of the National Building Code of India, and the standards quoted therein.
  - 2. For the specified climate & loading conditions.
  - 3. To adequately suit the requirements of the equipment and apparatus contained in the buildings and in all respects to be compatible with the intended use and occupancy.
  - 4. With a functional and economical space arrangement.

5. For alien expectancy of structure, systems and components not less than that of the equipment, which is contained in the building, provided regular maintenance is carried out.
6. Be aesthetically pleasing. Different buildings shall show a uniformity and consistency in architectural design.
7. To allow for easy access to equipment and maintenance of the equipment.
8. With, wherever required, fire retarding materials for walls, ceilings and doors, which would prevent supporting or spreading of fire.
9. With materials preventing dust accumulation.
- b) Suitable expansion joints shall be provided in the longitudinal direction wherever necessary with provision of twin columns.
- c) Individual members of the buildings frame shall be designed for the worst combination of forces such as bending moment, axial force, shear force, torsion etc.
- d) Permissible stresses for different load combinations shall be taken as per relevant IS Codes.
- e) All cable vaults shall be located above ground levels i.e. cable vaults shall not be provided in basements of the buildings.
- f) The building lighting shall be designed in accordance with the requirements of relevant section.
- g) One emergency exit shall be provided in control room building.

### 2.3 Design loads

Building structures shall be designed for the most critical combinations of dead loads, super-imposed loads, equipment loads, crane load, wind loads, seismic loads and temperature loads.

Dead loads shall include the weight of structures complete with finishes, fixtures and partitions and should be taken as per IS:1911.

Super-imposed loads in different areas shall include live loads, minor equipment loads cable trays, small pipe racks/hangers and erection, operation and maintenance loads. Equipment loads shall constitute, if applicable, all load of equipments to be supported on the building frame.

For crane loads an impact factor of 30% and lateral crane surge of 10% (lifted weight + trolley) shall be considered in the analysis of frame according to provisions of IS:875, The horizontal surge shall be 5% of the static wheel load.

The wind loads shall be computed as per IS 875, Seismic Coefficient method shall be used for the seismic analysis as per IS 1893 with importance factor 1.5

For temperature loading, the total temperature variation shall be considered as 2/3 of the average maximum annual variation in temperature. The average maximum annual variation in temperature for the purpose shall be taken as the difference between the mean of the daily minimum temperature during the coldest month of the year and mean of daily maximum temperature during the hottest month of the year. The structure shall be designed to withstand stresses due to 50% of the total temperature variation.

Wind and Seismic forces shall not be considered to act simultaneously

Floors/ slabs shall be designed to carry loads imposed by equipment, cables piping travel of maintenance trucks and equipment and other loads associated with building. Floors shall be designed for loads as per relevant IS. Cable and piping loads shall also be considered additionally for floors where these loads are expected.

In addition, beams shall be designed for any incidental point loads to be applied at any point along with beams. The floor loads shall be subject to Owner's approval.

For consideration of loads on structures, IS: 875 shall strictly adhere to. Any other load coming in the structure, not mentioned in IS 875 shall be calculated as per relevant IS code and NBC.

Only ISI mark Steel sections shall be used for construction.

### **2.3 Submission**

The following information shall be submitted for review and approval of the Owner.

1. Design criteria shall comprise the codes and standards used, applicable climatic data including wind loads, earthquake factors maximum and minimum temperatures applicable to the building locations, assumptions of dead and live loads, including equipment loads, impact factors, safety factors and other relevant information.
2. Structural design calculations and drawing 9 including construction/fabrication) for all reinforced concrete and structural steel structures.
3. Fully, dimensioned concept plan including floor plans, cross sections, longitudinal sections elevations and perspective view of each building. These drawings shall be drawn at a scale not smaller than 1:75 and shall identify the major building components.
4. Fully dimensioned drawings showing details and sections drawn to scales of sufficient size to clearly show sizes and configuration of the building components and the relationship between them.
5. Product information of building components and materials, including walls partitions flooring ceiling, roofing, door and windows and building finishes.
6. A detailed schedule of building finishes including colour schemes.
7. A door and window schedule showing door types and locations, door lock sets and latch sets and other door hardware.

8. safe bearing capacity of the soil below the foundation is to be calculated after testing in an Govt. laboratory.

Approval of the above information shall be obtained before ordering materials or starting fabrication or construction as applicable.

**2.4 Finish Schedule**

The finishing schedule is given in subsequent clauses.

**2.5 Flooring**

Flooring in various rooms of control room building shall be as for detailed schedules given in Table-1

**2.6 Walls**

Control room buildings shall be of framed structure. All walls shall be non-load bearing walls. Min. thickness of external walls shall be 230 mm (one brick) with 1:6 cement sand mortar.

**2.7 Plastering.**

All internal walls shall have minimum 12 mm and 15 mm thick 1:6 cement sand plaster on either side of wall. The ceiling shall have 6 mm thick 1:4 cement sand plaster.

**2.8 Finishing**

All external surfaces shall have 18 mm cement plaster in two coats, under layer 12 mm thick cement plaster 1:5 and finished with a top layer 6 mm thick cement plaster 1:6 ( DSR 13.19) with water proofing compound. The paint shall be antifungal quality of reputed brand suitable for masonry surfaces for high rainfall zone. White cement primer shall be used as per manufacturer's recommendation.

Internal finish Schedule is given Table-1 below.

**TABLE-1**

Sl. No.	Location	Flooring & Skirting 150mm high	Wall Internal	Ceiling	Doors, Windows, Ventilators.
1.	Control Room, Relay Room	Precast Terrazo tiles (DSR'02, Itemno 11.29A.2 &11.31.2	Oil bound washable distemper on smooth surface applied with 2mm thick Plaster of Paris putty.(DSR'02-13.40A & 13.77.2)	White Wash (DSR'02-13.70.1)	1) Standard steel rolled section frames with 5 mm glass. DSR'02-10.12, 10.13 and 10.14 2) Flush door shutters-DSR'02-9.25.2
2.	Sub-station In charge, Office, corridor,	Precast Terrazo tiles (DSR'02, Itemno 11.29A.2 &11.31.2	Oil bound washable distemper on smooth surface applied with POP putty.(DSR'02-	White Wash (DSR'02-13.70.1)	1) Standard steel rolled section frames with 5 mm glass. DSR'02-

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	staff room		13.40A & 13.77.2)		10.12, 10.13 and 10.14 2) Flush door shutters-DSR'02-9.25.2
3.	Battery room	Acid and Alkali Resistant tiles. DSR'02-11.36 C. 1&11.36 C.1.1	Dado of acid resistant tile 1.2Mhigh and Paint above 1.2 M to ceiling DSR'02-11.36C. 2.1,11.36C.2&13.96.1	Acid resistant Paint. DSR'02-13.96.1	Standard (preferably aluminium) rolled section frames with 5 mm glass. DSR'02-10.12, 10.13 and 10.14 2) Flush door shutters-DSR'02-9.25.2 Painted with acid resistant Paint.DSR'02-13.96.1
4.	Toilet	Ceramic glazed tiles in flooring DSR'02-11.74	DADOP glazed tile 2.1M high for toilet (DSR-02-11.73	White Wash DSR'02-13.70.1)	1) Standard steel rolled section frames with 5 mm glass. DSR'02-10.12, 10.13 and 10.14 2) Flush door shutters-DSR'02-9.25.2
5.	Other areas not specified	Terrazo tiles (DSR'02-11.29A.2&11.31.2-0	Oil bound distemper, DSR'02-13.40A & 13.77	White Wash (DSR'02-13.70.1	

**2.9 Roof**

Roof of the C.R. Building shall consist of Cast-in-situ RCC slab treated with a water proofing system which shall be an integral cement based treatment conforming to CPWD specification (item no. 25.8 of DSR 1997). The water proofing treatment shall be of following operations.

- (a) Applying and grouting a slurry coat of neat cement using 2.75 kg/m<sup>2</sup> of cement admixed with proprietary water proofing compounds conforming to IS: 2645 over the RCC slab including cleaning the surface before treatment.
- (b) Laying cement concrete using broken bricks/brick bats 25 mm to 100mm size with 50% of cement mortar 1:5 (1 cement: 5 coarse sand) admixed with proprietary water proofing compound conforming to IS: 2645 over 20mm thick layer of cement mortar of min 1:5 (Cement: 5 coarse sand) admixed with proprietary water proofing compound conforming to IS 2645 to required slope and treating similarly the adjoining walls up to 300mm height including rounding of junctions of walls and slabs.
- (c) After two days of proper curing applying a second coat of cement slurry admixed with proprietary water proofing compound conforming to OS: 2645.

- (d) Finishing the surface with 20mm thick joint less cement mortar of mix 1:4 (1 cement:4 course sand) admixed with proprietary water proofing compound conforming to IS:2645 and finally finishing the surface with trowel with neat cement slurry and making of 300 x 300 mm square.
- (e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-charge

With average thickness of 120 mm and minimum thickness khurra at 65 mm.

## **2.10 Glazing**

Minimum thickness of glazing shall be 5.5 mm as per IS: 2835 Sun film shall be provided for all windows/doors/of AC rooms if any.

## **2.11 Doors and Windows**

The details of doors and windows of the control room building shall be as per finish schedule TGable-1 and tender drawing with the relevant IS code. Rolling steel shutters and rolling steel grills shall be provided as per layout and requirement of buildings. Paints used in the work shall be of best quality specified in CPWD specification.

## **2.12 Plumbing & Sanitation**

- (i) All plumbing and sanitation shall be executed to comply with requirements of the appropriate byelaws, rules and regulations of the Local Authority having jurisdiction over such matters. The Contractor shall arrange for all necessary formalities to be met in regard to inspection, testing, obtaining approval and giving notices etc.
- (ii) PVC syntax or equivalent make Roof water tank of adequate capacity depending on the number of users for 24 hours storage shall be provided. Minimum 1 Nos. 500 liters capacity shall be provided.
- (iii) Galvanized MS pipe of medium class conforming to IS: 1239 shall be used for internal & external piping work for potable water supply.
- (iv) Sand CI pipes with lead joints conforming to IS:1729 shall be used for sanitary works above ground level.
- (v) Each toilet shall have the following minimum fittings.
  - (a) WC(Western type) 390 mm high with toilet paper roll holder and all fittings  
Or WC (Indian Type) Orissa Pattern (580 x 440 mm) with all fittings (both types of WCs shall be provided at alternate locations)
  - (b) Urinal (430 x 260 x 350 mm size) with all fittings.
  - (c) Wash basin (550 x 400 mm) with all fittings.
  - (d) Bathroom mirror (600 x 400 mm x 6mm thick) with all fittings
  - (e) CP brass towel rail (600 x 20mm) with C.P. brass brackets.
  - (f) Soap holder and liquid soap dispenser.
- (vi) All fittings, fastener, grating shall be chromium plated.

- (vii) All sanitary fixtures and fittings shall be of approved quality and type manufactured by well known manufactures. All items brought to site must bear identification marks of the type of the Manufacturer.
- (viii) Soil, waste and drain pipes, for underground works shall be stoneware for areas not subject to traffic load. Heavy-duty cast iron pipes shall be used otherwise.
- (ix) In case of R&M of existing substation, amount of work shall be envisaged by contract for lump sum quotation.

### **3.0 MISCELLANEOUS GENERAL REQUIREMENTS**

1. Dense concrete with controlled water cement ratio as per IS-code shall be used for all underground concrete structures such as pump-house, tanks, water retaining structures, cable and pipe trenches etc. for achieving water-tightness.
2. All joints including construction and expansion joints for the water retaining structures shall be made water tight by using PVC ribbed water stops with central bulb. However, kicker type (externally placed) PVC water stops shall be used for the base slab and in other areas where it is required to facilitate concreting. The minimum thickness of PVC water stops shall be 5 mm and minimum width shall be 230 mm.
3. All steel sections and fabricated structures that are required to be transported on sea shall be provided with anti corrosive paint to take care of sea worthiness.
4. All mild steel parts used in the water retaining structures shall be hot-double dip galvanized. The minimum coating of ghe zinc shall be 750 gm/sq.m for galvanized structures and shall comply with IS: 2629 and IS: 2633. Galvanizing shall be checked and tested in accordance with IS: 2633. The galvanizing shall be followed by the application of an etching primer and dipping in black bitumen in accordance with BS: 3416.
5. A screed concrete layer not less than 100 mm thick and of grade not weaker than M10 conforming to IS: 456-1978 shall be provided below all water retaining structures. A sliding layer of bitumen paper or craft paper shall be provided over the screed layer to destroy the bond between the screed and the base slab concrete of the water retaining structures.
6. Bricks having minimum 75kg/cm<sup>2</sup> compressive strength can only be used for masonry work. Contractor shall ascertain himself t sitge regarding the availability of bricks of minimum 75kg/cm<sup>2</sup> compressive strength before submitting his offer.
7. Doors and windows on external walls of the buildings (other than areas provided, with insulated metal claddings) shall be provided with RCC sunshade over the openings with 300 mm projection on either side of the openings. Projection of sunshade from the wall shall be minimum 450 mm over window openings and 750 mm over door openings.
8. Service ladder shall be provided for access to all roofs.
9. Angles 45 x45x5 mm( minimum ) with lugs shall be provided for edge protection all round cut outs/openings in floor slab, edges of drains supporting grating covers, edges of RCC cable/pipe trenches supporting covers, edges of manholes supporting covers, supporting edges of manhole precast cover and nay other place where breakage of corners of concrete is expected.
10. Anti termite chemical treatment shall be given to column pits, wall trenches, foundations of buildings, filling below the floors etc. as per IS: 6313 and other relevant Indian standards.
11. All rungs for ladder shall also be galvanized as per IS:277 medium classes.
12. For all civil works covered under this specification, nominal mix by volume batching as per CPWD specification is intended. The relationship of grade of concrete and ratio of ingredients shall be as below.

Sl.No.	Mix	Cement	Sand	Coarse Aggregate of 20mm down grade as per IS383
1.	M10	1	3	6
2.	M 15	1	2	4
3.	M 20	1	1.5	3

The material specification, workmanship and acceptance criteria shall be as per relevant clauses of CPWD specification and approved standard Field Quality Plan.

13. The details given in tender drawings shall be considered along with details available in this section of the specification while deciding various components of the building.
14. Items/components of buildings not explicitly covered in the specification but required for completion of the project shall be deemed to be included in the scope.

#### **4.0 INTERFACING**

The proper coordination & execution of all interfacing civil works activities like fixing of conduits in roofs/walls/floors, fixing of foundation bolts, fixing of lighting fixtures, fixing of supports/embedment, provision of cutouts etc. shall be the sole responsibility of the Contractor. He shall plan all such activities in advance and execute in such a manner that interfacing activities do not become bottlenecks and dismantling breakage etc is reduced to minimum.

#### **5.0 WATER SUPPLY**

- (i) Contractor shall make its own arrangement for construction water.
- (ii) The contractor shall carry out all the plumbing/erection works required for supply of water in control room building.
- (iii) The details of tanks, pipes, fittings, fixtures etc for water supply are given elsewhere in the specification under respective sections.
- (iv) A scheme shall be prepared by the contractor indicating the layout and details of water supply which shall be got approved by the Owner before actual start of work including all other incidental items not shown or specified but as may be required for complete performance of the works.
- (v) Bore wells and pumps for water supply are in the scope of contractor meeting the day-to-day requirement of the water supply.
- (vi) If the water is supplied by Municipal Corporation then bore well for water supply purposes is not required to be carried out by contractor. Contractor shall also make necessary arrangement/formalities to receive water connection from corporation.

#### **6.0 SEWERAGE SYSTEM**

- (i) Sewerage system shall be provided for control room building.
- (ii) The Contractor shall construct septic tank and soak pit suitable for 5 users if outside of Municipal Corporation zone. Otherwise, all necessary arrangement for the disposal of sewerage to the Municipal Corporation's end shall be arranged by the contractor at his own cost for regularizing the disposal activity.
- (iii) The system shall be designed as per relevant IS Codes.

## **7.0 STATUTORY RULES**

1. Contractor shall comply with all the applicable statutory rules pertaining to factories act (as applicable for the State). Fire Safety Rules of Tariff Advisory Committee, Water Act for pollution control etc.
2. Provisions for fire proof doors, no. of staircases, fire separation wall, plastering on structural members (in fire prone areas) etc. shall be made according to the recommendations of Tariff Advisory Committee.
3. Statutory clearance and norms of State Pollution Control Board shall be followed as per Water Act for effluent quality from plant.
4. Requirement of sulphate resistant cement (SRC) for sub structural works shall be decided in accordance with the Indian Standards based on the findings of the detailed soil investigation to be carried out by the Bidder.
5. Foundation system adopted by Bidder shall ensure that relative settlement and other criteria shall be as per provision in IS:1904 and other Indian Standards.
6. All water retaining structures designed as uncracked section shall also be tested for water tightness at full water level in accordance with clause No.10 of IS:3370 (Part-1).
7. Construction joints shall be as per IS: 456.
8. All underground concrete structures like basements, pumps houses, water retaining structures etc. shall have plasticizer cum water proofing cement additive conforming to IS: 9103. In addition, limit on permeability as given in IS: 2645 shall also be met with. The concrete surface of these structures in contact with earth shall also be provided with two coat of bituminous painting for water/damp proofing. In case of water leakage in the above structures, Injection Method shall be applied for repairing the leakage.
9. All building/construction materials shall conform to the best quality specified in CPWD specifications if not otherwise mentioned in this specification.
10. All tests as required in the standard field quality plans have to be carried out.

**VOLUME- II**

(Sample Forms)

**Tender Notification : CSO/09/Electrical & Civil Installation Works  
Date: 15.07.2008; (Revised)**

**2008 - 2009**

**BID FORM**

**Electrical & Civil Installation Works for NESCO, WESCO & SOUTHCO**

To  
**Central Services Office  
(NESCO, WESCO & SOUTHCO)  
Plot No. 123, Sector – A, Zone – A  
Mancheswar Industrial Estate  
Bhubaneswar – 751 010**

Sir,

1. We understand that NESCO, WESCO & SOUTHCO are desirous of installation of various Electrical & Civil works in their licensed distribution network area in the sate of Orissa.
2. Having examined the Bidding Documents for the above named works, we the undersigned, offer to complete the electrical / civil works as referred in the Tender Specification in full conformity with the Drawings, Conditions of Contract and specifications for the sum of..... (figures.....) or such other sums as may be determined in accordance with the terms and conditions of the contract. The above amounts are in accordance with the Price Schedules attached herewith and are made part of this bid.
3. If our Bid is accepted, we undertake to execute the entire awarded works within 180 days (6 months) from the date of award of purchase order/letter of intent.
4. If our Bid is accepted, we will furnish a performance bank guarantee for an amount of 10% (Ten) percent of the total contract value for due performance of the Contract in accordance with the General Conditions of Contract.
5. We agree to abide by this Bid for a period of 180 days from the date fixed for bid opening under clause 9.0 of GCC, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
6. We declare that we have studied the provision of Indian Income Tax Law and other Indian Laws for supply of equipments/materials and the prices have been quoted accordingly.
7. Unless and until Letter of Intent is issued, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
8. We understand that you are not bound to accept the lowest, or any bid you may receive.
9. There is provision for Resolution of Disputes under this Contract, in accordance with the Laws and Jurisdiction of Contract, Clause 19 of GCC.

Dated this..... day of..... 20 .....

Signature..... In the capacity of .....

.....duly authorized to sign for and on behalf of

(IN BLOCK CAPITALS) .....

FORMAT FOR BID SECURITY BANK GUARANTEE

*(To be issued in a Non Judicial Stamp Paper of Rs. 50/- purchased in the name of the bank)*

Whereas [name of the Bidder] (hereinafter called "the Bidder") has submitted its bid dated [date of submission of bid] for the execution of [description and quantum of the works] (hereafter called "the Bid").

KNOW ALL PEOPLE by these presents that WE [name of bank] at [Branch name and address], having our registered office at [address of the registered office of the bank] (hereinafter called "the Bank"), are bound unto North Eastern Electricity Supply Company of Orissa Ltd., with it's Registered Office at Plot 123, Sector A, Zone A, Mancheswar Industrial Estate, Bhubaneswar – 751 010, (hereinafter called "the Purchaser") in the sum of Rs .....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 Bid during the period of bid validity specified by the Bidder on the Bid Form; or
2. If the Bidder, having been notified of the acceptance of its Bid 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 Instructions to Bidders/ GENERAL CONDITIONS.;

We undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that is its demand the purchaser will note that 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 and including thirty (30) days after the period of bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

\_\_\_\_\_  
(signature of the bank)

Signature of the witness

PROFORMA FOR BANK GUARANTEE FOR CONTRACT PERFORMANCE

*(To be issued in a Non Judicial Stamp Paper of Rs. 50/- purchased in the name of the bank)*

Bank Guarantee No.....  
Date.....  
Ref. ....

To  
**NESCO Ltd.**  
**Registered Office at :**  
**Plot No. 123, Sector – A, Zone – A**  
**Mancheswar Industrial Estate**  
**Bhubaneswar – 751 010**

Dear Sirs,

In consideration of the NESCO, here in after termed as "Purchaser" having awarded to M/s. .... with its Registered Office/Head Office at..... (hereinafter referred to as the 'Contractor' which expression shall unless repugnant to the context meaning thereof, include its successors administrators, executors and assigns), a Contract by issue of Letter of Award No. ....dated.....and the same having been acknowledged by the Contractor, resulting in a Contract bearing No. .... dated.....valued at.....for.....and the Contractor having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to \* .....% (.....percent) of the said value of the Contract to the Purchaser.

We.....(Name & Address) having its Registered Office at..... hereinafter referred to as the 'Bank', which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby Guarantee and undertake to pay the Purchaser, on demand any and all monies payable by the Contractor to the extent of.....\*\* .....as aforesaid at any time upto .....(days/month/year) without any demur, reservation, contest, recourse or protest and/or without any reference to the Contractor. Any such demand made by the Purchaser on the Bank shall be conclusive and binding notwithstanding any difference between the Purchaser and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Bank undertakes not to revoke this Guarantee during its currency without previous consent of the Purchaser and further agrees that the Guarantee herein contained shall continue to be enforceable till the Purchaser discharges this Guarantee.

The Purchaser shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee, from time to time to extend the time for performance of the Contract by the Contractor. The Purchaser shall have the fullest liberty, without affecting this Guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Purchaser and the Contractor or any other course or remedy or security available to the Purchaser. The Bank shall not be released of its obligations under these presents by any exercise by the Purchaser of its liberty with reference to the matters aforesaid or any of them or by reason of any other act of

**Registered Office of NESCO, WESCO & SOUTHCO**

forbearance or other acts of omission or commission on the part of the Purchaser or any other indulgences shown by the Purchaser or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Bank.

The Bank also agrees that the Purchaser at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against Supplier and notwithstanding any security or other Guarantee the Purchaser may have in relation to the Contractor's liabilities.

Notwithstanding anything contained hereinabove our liability under this Guarantee is restricted to .....and it shall remain in force upto and including ..... and shall be extended from time to time for such period (not exceeding one year),as may be desired by M/s..... on whose behalf this Guarantee has been given.

Dated this..... day of ..... 20..... at.....

WITNESS

(Signature)..... (Signature).....

(Name)..... (Name).....

..... (Official Address)

(Designation with Bank Stamp)

Attorney as per Power of Attorney No.....

Dated.....

**NOTE:**

1. \*This sum shall be Ten percent (10%) of the Contract price.  
  
\*\*The date will be ninety (90) days after the end of Warranty Period as specified in the Contract.
2. The stamp papers of appropriate value shall be purchased in the name of issuing bank.
3. Performance security is to be provided by the successful bidder in the form of a bank guarantee, which should be issued by any Scheduled Bank.