

# **JHARKHAND URJA SANCHARAN NIGAM LIMITED**

Regd. Office – Engineering Building, H.E.C., Dhurwa, Ranchi – 834 004

Fax No. – 0651 – 2400123 (E-mail – [cetjseb@rediffmail.com](mailto:cetjseb@rediffmail.com)/ [cetjusnl@gmail.com](mailto:cetjusnl@gmail.com))

**Tender Notice No. – 121/ PR/ JUSNL/ 2015 – 16**



**For**

**Design, Engineering, Supply, Erection, Testing & Commissioning  
of 220/132/33 kV (2x150 + 2x50) MVA Grid Sub-Station at  
Jainamore (Bokaro).**

**Volume – I**

**Issue to: .....**  
.....  
.....

**Price of Tender Document  
Rs. 25,000/- (Vol. I + II)**

**GENERAL COMMERCIAL TERMS AND CONDITIONS,  
SCHEDULES AND FORMATS TO BE FILLED IN AND  
SIGNED BY THE TENDERERS**

# JHARKHAND URJA SANCHARAN NIGAM LIMITED

## VOLUME-I

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# **JHARKHAND URJA SANCHARAN NIGAM LTD.**



## **VOLUME-I**

### **SECTION-1(A) GENERAL INFORMATION'S**

# **JHARKHAND URJA SANCHARAN NIGAM LTD.**

## **INVITATION OF BID FOR CONSTRUCTION OF 220/132/33KV GRID SUBSTATION IN JAINAMORE (BOKARO)**

### **1.0 GENERAL**

**1.1** JHARKHAND URJA SANCHARAN NIGAM LTD. intends to construct 220/132/33KV Grid Sub-Station IN JAINAMORE (BOKARO) (new) on Turnkey Basis as detailed under this specification.

**1.2** Tenders in two parts containing Technical & Commercial offer (Part-I) and Price offer (Part-II) are invited by JUSNL from eligible, bonafide, resourceful and experienced contractors having sound financial and technical background and management capacity and who have record of successful engineering, supply, erections supervisions, testing and commissioning of the equipments and materials required for the works detailed hereinafter.

The numbers of bays to be commissioned at the grid sub- station are given below:-

#### **(A) 220 KV System**

- 2 Nos. of Transformer bays for 02 nos. of 150 MVA, 220/132KV, 3 Ph Auto transformers.
- 1 No. Transfer Bus Coupler Bay
- 1 No. Bus Coupler Bay
- 4 Nos. Line Bays.

**Total: 8 Nos.**

#### **(B) 132 KV System**

- 2 Nos. of Transformer bays for 132KV side of 02 nos. of 150 MVA, 220/132KV, 3 Ph Auto transformers.
- 2 Nos. of Transformer bays for 02 nos. of 50 MVA, 132/33 KV, 3 Ph Power transformers.
- 1 No. Bus Coupler Bay
- 4 Nos. Line Bays

**Total: 9 Nos.**

#### **(C) 33 KV System**

- 2 Nos. of Transformer bays for 50 MVA, 132/33 KV, 3 Ph Power transformers.
- 1 No. Bus Coupler bay
- 7 Nos. line Bays

**Total: 10 Nos.**

**1.3 The details of the tender are furnished below:**

**JHARKHAND URJA SANCHARAN NIGAM LIMITED**

(CIN No. – U40108JH2013SGC001704)

Regd. Office – Engineering Building, H.E.C., Dhurwa, Ranchi – 834 004

**Fax No. – 0651 – 2400123** (E-mail – [cetjseb@rediffmail.com](mailto:cetjseb@rediffmail.com)/ [cetjusnl@gmail.com](mailto:cetjusnl@gmail.com))

**TENDER NOTICE**

Sealed tender containing Technical and Commercial (Part – I) and Price (Part – II) are invited in duplicate from reputed, capable, experienced and financially sound firm for the work as scheduled below:

NIT No.	Name of work
121/PR/JUSNL/2015 – 16	: Design, Engineering, Supply of Materials/ Equipments, Erection, Testing and Commissioning of 220/132/33 kV (2x150 + 2x50 MVA) Grid Sub-Station at Jainamore (Bokaro) on turnkey basis.
1. Cost of BOQ	: Rs. 25,000/- (Non Refundable)
2. Earnest Money Deposit (BG/DD of any nationalized bank of India)	: Rs. 73.86 Lacs
3. Completion Period	: 18 calendar months from the date of issue of LOI.
4. Period for Sale of B.O.Q.	: 24.08.2015 to 11.09.2015 (during office hours)
5. Pre Bid meeting	: 08.09.2015 at 11.30 Hrs. in Conference Hall of JUSNL
5. Date of Submission of Tender	: Upto 13.30 Hrs. on 14.09.2015
6. Date of opening of Tech. & Coml. (Part – I) of the Tender	: At 16.00 Hrs. on 14.09.2015

**QUALIFYING REQUIREMENTS:**

1. The Bidder should be a registered company under Company Act of India (Both firms in case of JV).
2. The Bidder should have valid EPF & ESI registration (Both firms in case of JV).
3. The Bidder should have valid Electrical License (Both firms in case of JV) and at least one supervisor with electrical license for the requisite voltage class issued/ recognized by any State Government of India for executing the electrical works. But it will be mandatory to get electrical license of Jharkhand before issuance of LOI in case electrical license from Jharkhand is not available. In this regard bidder should submit an affidavit.
4. **Joint Venture:** Joint venture is acceptable up to two firms only and both the firm should jointly qualify for the technical & commercial criteria.
  - i. The agreement of the consortium must be duly signed by CEO of their respective organization duly approved by their respective Board. The consortium agreement must clearly define lead partner of the consortium. It will also be required under the agreement that all the members of the consortium shall be jointly responsible

for obligations arising out of this bidding and award of subsequent contract if awarded. The consortium agreement must be valid till expiry of the contract for which this bidding is being made.

- ii. The bid needs to be signed by either all member of the consortium or the lead partner. If only lead partner signs the offer then power of attorney from each member for authorization is required and will accompany the bid.
5. The Bidder (anyone/ both in case of JV) should have experience of successfully completing Design, Engineering, Supply of Materials/ Equipments, Foundation, Erection, Testing and Commissioning of 220 kV or higher voltage class Sub-Station in last 5 years from any state/ Transmission Utility.
6. The bidder (jointly in case of JV) should have financial capability to take up and execute the work successfully.
7. The net worth of the bidder (both firms in case of JV) during last three years should be positive.
8. The minimum average annual turnover during best three years out of last five financial years (2010-11 to 2014-15) should not be less than Rs. 20.00 Crores. The tenderer should submit audited balance sheet and Profit and Loss Account for last 5 years in the commercial part of the tender.
9. Tender without earnest money will be summarily rejected.

**Terms & Conditions:**

1. The Bidder (anyone in case of JV) should have experienced professional well versed in Design, Engineering, Equipment Details and site works. A list in this regard with organizational profile should be furnished.
2. Black listed/ Ban on participation in any contract/ tender or any other pecuniary interest directly or indirectly in any construction work/ manufacture/ supply/ financial transaction pertaining to the Nigam by persons employed in the Nigam or their close/ blood relations/ proxies. The bidder should submit an affidavit as a proof in this regard. This condition will be required for the both firms in case of JV.
3. No Postal or Courier transaction of the documents will be entertained.
4. Any other terms and conditions as detailed in B.O.Q. will also be part of this N.I.T.
5. Issuance of tender document does not construe that they will be qualified automatically.
6. At any stage if it is found that bidder have submitted false document for the purpose of qualifying in the tender, action as per Law will be taken and the pending payment, BG, Security amount of the bidder will be forfeited by the Nigam at any stage of execution.



7. JUSNL reserves the right to reject any or all the tenders without assigning any reason thereof.
8. Tender Notice and Tender document will be available on website [www.juvnl.com](http://www.juvnl.com), Bidders may purchase Tender Document from the office of the Chief Engineer (Transmission) within the schedule period by paying the cost of tender documents (Non-refundable) either in cash or in the shape of Demand Draft in favor of “**Jharkhand Urja Sancharan Nigam Limited, payable at Ranchi**” or download the tender document during the period of Sale as mentioned so that time can be saved for preparation of bid but the cost of Tender Document (Demand Draft ) must be accompanied with Bid submission. All the pages of the tender documents purchased/ downloaded must be signed by the bidder as a token acceptance. **All documents submitted must be properly paginated & indexed with seal & sign of authorized person.**

**Note:-** 1. The Bidders are advised to visit the site for being acquainted with the site conditions and availability of foundation materials at their own cost before quoting their rates etc.

2. Bidders may visit website [www.juvnl.com](http://www.juvnl.com) for details.

**Address for Submission of Tender:**

**Chief Engineer (Transmission),**  
Jharkhand Urja Sancharan Nigam Limited,  
Engineering Building, HEC, Dhurwa, Ranchi – 834 004  
Telephone – 0651-2400008 (O) / 9431102925 (M)

Sd/-  
**(K. B. N. Singh)**  
Chief Engineer (Transmission)

**JHARKHAND URJA SANCHARAN NIGAM LTD., RANCHI**  
**P A R T – I**  
**SECTION –I (B)**

**Instructions to Tenderers**

**1.2.1 PROJECT SYNOPSIS :**

**JUSNL Ranchi** hereinafter called "Purchaser/ owner" has invited tenders for construction of works of 220/132/33KV Grid Sub-Station IN JAINAMORE (BOKARO) (New) on Turnkey Basis as detailed under this specification.

The broad scope is contained in Clause 1.2.4 below.

**1.2.2. APPROACH TO THE SITE:**

The site is located IN JAINAMORE (BOKARO).

**1.2.3 GENERAL INSTRUCTIONS :**

All tenders shall be prepared and submitted in accordance with these instructions after due physical inspection of site. Tenders shall not be accepted after the time and date fixed for receipt of tenders as set out in the NIT. Telegraphic tenders will not be accepted under any circumstances.

**1.2.4 SCOPE OF WORK :**

1.2.4.1 The work is to be taken up from concept, engineering, design, preparation of all drawings, survey, layout, erection to commissioning including supply of all required equipments and materials, testing of the same at manufacturer's works. All equipments/ Material etc will have to be supplied, erected, tested and commissioned as per JUSNL's specifications by tenderer/contractor. The cement and steel shall be supplied by the tenderer/contractor at their own cost. This work includes construction of control room, foundation of structure and equipments etc. as and where required, erection of structures, equipments and all other items required for completion of the grid sub - station as well as final testing and commissioning of substation, and handing over the same to JUSNL This shall also include complete SAS system for the grid substation.

1.2.4.2 The intent of this specification is detailed engineering , manufacture, preparation of all drawing, execution etc 220/132/33 KV Grid Sub Station, IN JAINAMORE (BOKARO) as per the approved drawings consisting of following bays with all necessary equipments at the substation .

**(A) 220 KV System**

- 2 Nos. of Transformer bays for 02 nos. of 150 MVA, 220/132KV, 3 Ph Auto transformers.
- 1 No. Transfer Bus Coupler Bay
- 1 No. Bus Coupler Bay
- 4 Nos. Line Bays. **Total: 8 Nos.**

**(B) 132 KV System**

- 2 Nos. of Transformer bays for 132KV side of 02 nos. of 150 MVA, 220/132KV, 3 Ph Auto transformers.
- 2 Nos. of Transformer bays for 02 nos. of 50 MVA, 132/33 KV, 3 Ph Power transformers.
- 1 No. Bus Coupler Bay
- 4 Nos. Line Bays **Total: 9 Nos.**

**(C) 33 KV System**

- 2 Nos. of Transformer bays for 50 MVA, 132/33 KV, 3 Ph Power transformers.
- 1 No. Bus Coupler bay

- 7 Nos. line Bays

**Total: 10 Nos.**

- (iv) Design, Manufacture, supply, erection testing & commissioning of 2 Nos. of 150 MVA, 220/132/33 KV & 02 Nos. of 50MVA, 132/33 KV transformers to be done by the contractor.
- (v) Construction of cable trench and rack, laying of control and power cable etc and covering the cable trench with RCC slab of suitable size and strength. The cable trench and its cover shall conform to the design and details specified under specification i.e, Civil Works.
- (vi) Installation of 1 x 100 KVA D.G. Set including supply, erection, testing commissioning etc of approved make and design.
- (vii) Firefighting system including HVWS system, Hydrant System and smoke Detection System.
- (viii) New cable trench are to be constructed at the GSS.
- (ix) Earth filling, levelling of site, and construction of boundary wall covering the entire area of GSS site shall be done by agency. Construction of approach road etc associated with construction of 220/132/33 KV Grid Sub Station of IN JAINAMORE (BOKARO) (New) & gates of boundary wall switchyard with pillars is one gate suitable for movement of heavy vehicles and trolleys with 150 MVA transformer and other gate suitable for movement of men/staffs as well as construction of check post and dormitory for security persons with 6 beeds with all arrangement covered in present scope. The cutting of bushes and shrubs as well as cleaning of site is also covered in the scope of work of this tender.
- (x) Spreading of Gravel/Stone in switchyard after construction of PCC and application of cement slurry as well as anti weed treatment of switch yard.
- (xi) Design, manufacture, supply erection, testing & commissioning of P.L.C.C. equipments for connecting the Proposed transmission lines.  
This work shall include the supply and commissioning of Battery & charger sets for carrier equipments separately. The P.L.C.C equipments shall be suitable for 220 KV & 132KV DOUBLE CIRCUIT transmission line for phase to phase communication.
- (xii) Painting of all erected sub-station structures and expended metal fencing with standard and approved Aluminium paint and gate with enamel paint is included. The tenderers shall furnish details in their tender about the painting procedures, standards, quality of paint etc.
- (xiii) The tenderer shall include in the total cost of his tenderer the cost of delivery of the whole of the plant and materials for delivery at the site including all taxes duties insurance, freight etc.
- (xiv) The contractor shall also supply the spare parts and special tools at the price quoted in quantities mentioned in clause spare parts & Maintenance Tools “Or” subsequent modifications thereof.
- (xv) The contractor shall undertake that the supply of necessary spare parts and special tools will be made available at any time later, during the life of the plant. The price for spare parts shall be at fair market price.
- (xvi) The contractor shall supply the necessary drawings/shop drawing and specification of those spare parts which the contractor propose to take off his production range to enable the purchaser to arrange manufacture of the spare parts from other agency.
- (xvii) The contractor will have to depute suitable erection, supervision personnel to supervise the work of erection of the equipment under taken by him/them,
- (xviii) The contractor shall quote the price for complete erection, testing and commissioning of equipment to be supplied by them.
- (xix) The FGL (finished ground level) shall be as specified in the specification for civil works.

- (xx) All other items not specifically mentioned in this Specification and/or PRICE SCHEDULE but are required for successful commissioning of the grid sub-station, cable link lines and power sub-station, unless specifically excluded in the Specification with SAS.
- 1.2.4.3 This also includes the supply, delivery, installations, testing and commissioning of all necessary parts and equipments including supply, delivery and erection of structures, etc. required for successful commissioning of the sub-station, control room building, cable laying etc on turnkey basis. The responsibility of connecting the Gantry column to the dead end tower of transmission line, as required, is included in the scope of this tender.
- 1.2.4.4 The above work includes design, manufacture and construction of earth mat with earthing pits for complete switch yard for the short circuit current as specified in this specification. It shall be **equivalent to 40 kA for 1 sec, 31.5kA for 1 sec and 25 kA for 3 sec** for 220 KV, 132 KV AND 33 KV respectively i.e. equivalent to short circuit current capacity. Supply & Laying of complete new earth mat is included in the scope of work irrespective of anything mentioned anywhere.
- 1.2.4.5 Painting of boundary wall with colors, as detailed in the specification for civil works, is included in the scope of work against this tender. The work of the construction of boundary wall is being done separately by JUSNL
- 1.2.4.6 Construction of security post is included in the scope of work.
- 1.2.4.7 Any other items not specifically mentioned in the Specifications but which are required for erection, testing, commissioning and satisfactory operation of the Grid substation are deemed to be included in the scope of the Specifications unless specifically excluded.
- 1.2.4.8 The work of connecting the Transmission lines is included in the scope of work.
- 1.2.4.9 **Obtaining clearance, if any and right of way will be the responsibility of the contractor. All expenditures towards the above shall be borne by the tenderer/contractor. However, JUSNL shall extend all assistance in obtaining the clearance from the Govt. Deptt.**
- 1.2.4.10 Conditional tenders shall not be accepted
- 1.2.4.11 The deviations present in the offer w.r.t the provisions made in tender specification in regard to technical and commercial terms should be spelt out in specified "Schedule of deviation" forms attached with tender specification. **Only those deviations which have been mentioned in the schedule of deviations/forms shall be considered during evaluation of the tenders.** JUSNL will not take into cognizance the deviations appearing elsewhere for evaluation of bid and payment and the same stands with drawn.
- 1.2.4.12 **SAS - The substation at IN JAINAMORE (BOKARO) (New) is to be constructed shall be fully automated. The specification for sub-station automation system (SAS) is enclosed in the technical specification (Section-II). In place of air-conditioned switchyard panel room, the SAS control units shall be housed in control and relay panel kept inside the control room. All electrical signals shall be brought in the control room through cable, which thereafter will be connected with optical signal for networking and other automation requirement. One separate cubicle of suitable size shall be erected in the control room with glass separation having air-conditioning and panelling to house the HMI and other allied automation equipment. The control operation of sub-station shall be done from such cubicle. The SAS will comprise the following components:-**
- i) Station HMI
  - ii) Redundant Station HMI (in Hot-standby mode)
  - iii) Bay level units along with bay mimic as detailed in section Project
  - iv) Bay Level Unit for Auxiliary system (as per requirement)
  - v) Disturbance Recorder WorkStation (Maintenance HMI)
  - vi) Colour Laser Printer – 1 No. (For Reports & Disturbance records)
  - vii) Dot matrix printers - (one each for Alarms and log sheets)

- viii) All interface equipment for gateway to RCC and RSCC
- ix) Communication infrastructure between Bay level units, Station HMI, Printers, gateways, redundant LAN etc. as required
- x) Remote workstation including HMI and along with one printer
- xi) Modems as per requirement.
- xii) Any other equipment as necessary.

Such requirement is indicative only. As such, the whole scheme has to be designed by the contractor or vendor employed by the contractor and other item required for completion of automation system shall be supplied & commissioned by the contractor without any extra cost implication to the Board. All equipments shall conform to the latest technology and engineering. Wherever applicable, all communication protocol shall conform to IEC 61850 only.

**The scope of work shall also include the following works:-**

**PRICE SCHEDULE FOR MATERIALS & EQUIPMENTS & TESTING, COMMISSIONING**

**SCHEDULE OF QUANTITIES & PRICES.**

Design, Engineering, Supply, Erection, Testing and commissioning of 220/132/33 kV 2x150 + 2x50 MVA Grid Sub-Station including construction of Control Room Building & approach road other civil works at Bokaro (Jainamore).

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					<b>(4 x 5)</b>			<b>(5+8)</b>	<b>(6+8)</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>A-1</b>	<b>TRANSFORMER</b>								
1.1	150 MVA Three phase Auto Transformer 220/132/33 KV Auto Transformer without oil <u>Complete with all accessories, marshaling boxes, terminal connectors etc.</u>	Nos.	2						
1.2	Transformer oil for the above <u>with 10% extra oil.</u>	Lot	2						
1.3	Type Test charges including service taxes etc. to be conducted on only one transformers	LS	1						
1.4	50 MVA Three phase 132 /33 KV Transformer <u>Complete with all accessories, marshaling boxes, terminal connectors etc.</u>	Nos	2						
1.5	Transformer oil for the above <u>with 10% extra oil.</u>	lot	2						
1.6	Type Test charges including service taxes etc. to be conducted on only one transformers	LS	1						
<b>A2</b>	<b>LT Transformer</b>								
1.1	630 KVA, 33/0.433kV LT transformer with oil, accessories and terminal connectors	Nos.	2						

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
B-1	<b>220 kV EQUIPMENT</b>								
1	Circuit breaker (3 phase)								
i)	<u>2500 A, 40 kA SF – 6 CB with support structure, marshalling boxes, terminal connectors etc.(current rating shall be equal to the current rating for which the short cuircuit test reports shall be furnished. (Spring-Spring Mechanism ) (spring- spring )</u>	No	8						
2	ISOLATORS (3 phase), with solid core insulators, marshalling boxes, terminal connectors (Motor Operated) with moving contact of HDEC copper only.								
i)	1600 A, 40 kA with two earth switch (Double break Isolator)	Nos.	8						
ii)	1600 A, 40 kA with one earth switch (Double break Isolator)	Nos.	8						
iii)	1600 A, 40 kA without earth switch (Double break Isolator) (Tandem arrangement)	Nos.	14						
iv)	2500 A, 40 kA with two earth switch (Double break Isolator)	Nos.	2						
v)	<u>2500 A, 40KA without earth switch double breaker insulator (high level beam mounted) two nos of isolators shall be provided as sectionaliser of 220 KV main bus-1</u>	Nos.	2						

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
3	CURRENT TRANSFORMER 5 Core (1 phase) WITH MARSHALING BOXES TERMINAL CONNECTORS								
i)	<u>1600-800-400-200/1-1-1-1-1</u> A, 120% extended current rating, 40 kA, 0.2 class 5 core	Nos.	21						
ii)	<u>1600-800-400-200/1-1-1-1-1</u> A, 150% extended current rating, 40 kA, 0.2 class 5 core	Nos.	3						
4	220 KV CVT 4400 pF CVTs (1 phase) <u>for phase to phase coupling with all accessories, terminal connectors etc.</u>	Nos.	21						
5	216 kV Surge Arresters (1 phase) <u>class-III with terminal connectors.</u>	Nos.	15						
6	Portable discharge rods	Nos.	6						
B – II	ERECTION HARDWARE (220 kV)								
1.1	Erection Hardware (Without BPI)								
	Insulator strings <b>antifog</b> type & hardware, spacers, conductor (S), Bus bar material, cable trays, bay MB, Clamps, Connectors including, Junction box,PVC pipes for equipment and lighting, all accessories etc. for the following (The main I & main II buses shall be of quad Moose ACSR Conductor & TBC as well as Bus Coupler will be of double Moose conductor.								



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					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
	220 kV, Double Main & Transfer bus type								
i	Line bay	set	4						
ii	Transformer bay	Set	2						
iii	TBC bay	Set	1						
iv	BC bay	Set	1						
v	Bus for 10 Bays (one no each for main I, main II & transfer bus)	Set	3						
1.2	220 kV <u>Solid Core</u> , Bus post Insulators (including requirement for wave trap) (break up of quantity to be furnished by bidder)	Nos	<b>144</b>						
C - 1	132 kV EQUIPMENT								
1	Circuit breaker (3 phase)								
i)	1250 A, 31.5 kA SF 6 CB <u>with support structure, marshalling boxes, terminal connectors etc.(current rating shall be equal to the current rating for which the short circuit test reports shall be furnished.)</u> (Spring- Spring )	Nos.	9						
2	ISOLATORS (3 phase), <u>with solid core insulators, marshaling boxes, terminal connectors (Motor Operated) with moving contact of HDEC copper only.</u>								

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
i)	1250 A, 31.5 kA with one earth switch (Double break Isolator)	Nos.	4						
ii)	1250 A, 31.5 kA without earth switch (Double break Isolator)	Nos.	14						
iii)	1250 A, 31.5 kA without earth switch (Double break Isolator)(Tandem arrangement)	Nos.	9						
iv)	<u>1600 A</u> , 31.5 kA without earth switch (Double break high level beam mounted Isolator)	Nos.	2						
3	<u>Portable discharge rods ( 1 phase)</u>	<u>Nos.</u>	<u>6</u>						
4	<b>Current Transformers 5 core (1 phase)</b>								
i)	1200 -600-300-150/1-1-1-1 A, 5 core 0.2 class ,31.5 kA with 120% extended current rating <u>with marshalling boxes, terminal connectors etc.</u>	Nos.	9						
ii)	600-300-150/1-1-1-1 A, 5 core 0.2 class ,31.5 kA with 120% extended current rating <u>with marshalling boxes, terminal connectors etc.</u>	Nos.	18						
5	8800 pF CVTs (1 phase) with marshalling boxes, terminal connectors etc .	Nos.	12						
6	120 kV Surge arresters class-III ( 1 phase) with marshalling boxes, terminal connectors etc.	Nos.	24						
C – II									
1.1	ERECTION HARDWARE (132 kV)								

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
	Insulator strings antifog type & hardware, spacers, conductor (S), Bus bar material, cable trays, bay MB, Clamps, Connectors including, Junction box,PVC pipes for equipment and lighting, all accessories etc. for the following <u>(main bus shall be of quad Moose conductor and transfer bus shall be strung with double Moose conductor)</u>								
	132 kV Main & Transfer bay								
i	Line bay	Set	6						
ii	Transformer bay	Set	2						
iii	TBC Bay	Set	1						
iv	Bus for 09 bays (One for main bus & another for transfer bus)	Set	2						
1.2	132 kV <u>Solid Core</u> , Bus post Insulators for erection hardware	Nos.	<b>58</b>						
D	<b>33 kV EQUIPMENT</b>								
1	<b>Circuit Breaker (3 Phase)</b>								
i)	1250 A, 25KA Vacuum CB with support structure, marshalling boxes, terminal connectors etc. <u>(current rating shall be equal to the current rating for which the short circuit test report shall be furnished)</u> (Spring-Spring)	Nos	10						

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
2	ISOLATORS (3 phase), with solid core insulators, marshalling boxes, terminal connectors (Manually operated) with moving contact of HDEC copper only.								
i)	1250 A, 25 kA with one earth switch (Double break Isolator)	Nos.	9						
ii)	1250 A, 25 kA without earth switch (Double break Isolator)	Nos.	14						
iii)	1250 A, 25 kA without earth switch (Double break Isolator)(Tandem arrangement)	Nos.	9						
iv)	2500 A, 25 kA without earth switch (Double break high level beam mounted Isolator)	Nos.	2						
3	1200A, Horn gap fuse ( 1 phase)	Nos.	6						
4	<b>Current Transformers (1 phase)</b>								
i)	600-300-150/1 A, 5 core 0.2 class 25 kA with 120% extended current rating <u>with marshalling boxes terminal connectors</u>	Nos.	21						
ii)	1200 -600-300/1A, 5 core 0.2 class 25 kA with 120% extended current rating <u>with marshalling boxes terminal connectors</u>	Nos.	9						
5	33 KV, 0.2 class Potential Transformer (1 phase) <u>with marshalling boxes terminal connectors</u>	Nos.	3						
6	30 kV Surge arresters <u>class 3 ( 1 phase) with</u>	Nos	30						

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
	<u>marshalling boxes terminal connectors</u>								
7	Portable discharge rods.	Nos.	6						
8	<b>ERECTION HARDWARE (33 kV)</b>								
	ERECTION HARDWARE without Bus Post Insulators								
8.1	Insulator strings & Hardware Spacers, conductor (s) bus- bar material, cable tray, Bay MB, clamps, connectors including Junction Box, PVC pipes for equipments & lighting, all accessories etc. for the following (The main bus shall be strung with quad moose ACSR conductor & 33 KV main bus shall be of double moose conductor								
i)	Line Bay	Set	7						
ii)	Transformer Bay	Set	2						
iii)	TBC Bay	Set	1						
iv)	Bus for 10 Bays	Set	2						
8.2	33 kV <u>Solid core Bus post</u> Insulators for erection hardware	Nos.	<b>45</b>						
E	LT Switchgear								
i	415 V Main switch Board	Set	1						

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
ii	415 V ACDB (no of feeders shall be asper the requirement of the project plus 20% extra feeders)	Set	1						
iii	415V MLDB	Set	1						
iv	415V Emergency LDB	Set	1						
v	250V DCDB (no of feeders shall be asper the requirement of the project plus 20% extra feeders)	Set	1						
vi	48V DCDB	Set	1						
F	CONTROL & RELAY PANELS								
1	220 kV (Simplex panels)								
1.1	Control Panel for Two bays. <u>All indicating meters/ multifunctions meters shall be communicable type with 0.5 class accuracy.</u>	Nos	4						
1.2 a)	CB relay panel with A/R	Nos.	6						
1.2 b)	CB relay panel without A/R	Nos.	3						
1.3	<u>Line protection panel with numerical distance protection relays and earth fault / overcurrent relays complying to IEC 61850 Protocol with optical fiber ports sufficient DI/DO ports for scheme with additional 6 DI/DO Ports for spare. All indicating meters/ multifunctions meters shall be communicable type with 0.5 class accuracy.</u>	Nos.	6						

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
1.4	Transformer protection panel HV and LV sides) <u>with numerical differential protecton relays with earth fault/ over current relay complying to IEC 61850 Protocal with optical fiber ports and sufficient DI/DO for scheme with additional 6 DI/DO ports for spare.</u>	Nos.	2						
1.5	Transfer bus coupler panel with distance protection relay scheme with all relays	Nos.	1						
1.6	Bus coupler panel with all necessary relays etc.	Nos.	1						
1.7	Bus bar protection panel (bus bar protection will be low impedance, integrated type and not dishimble type and will have minimum 4 zones with numerical type of relays complying IEC 61850. Protocolas as and where applicable.	Set	1						
1.8	<u>Time Synchronization equiptment will have dual ethernet with RJ45 port.</u>	Set	1						
2	132 kV (Duplex Panels)								
2.1	<b>Control, Relay &amp; Protection Panel for</b>								
a)	132 KV line (with A/R) <u>with numerical distance protection relays and earth fault / overcurrent relays complying to IEC 61850 Protocal with optical fiber ports sufficient DI/DO for scheme with additional 6 DI/DO for spare. All indicating meters/ multifunctions meters shall be communicable type with 0.5 class</u>	Nos.	4						

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
	<u>accuracy.</u>								
b)	132/33 KV Transformer (without A/R) <u>with numerical differential protection relays and earth fault / overcurrent relays complying to IEC 61850 Protocol with optical fiber ports sufficient DI/DO for scheme with additional 6 DI/DO for spare.</u>	Nos.	2						
c)	132 kV TBC (with A/R) with numerical distance protection relays and earth fault / overcurrent relays complying to IEC 61850 Protocol with optical fiber ports sufficient DI/DO for scheme with additional 6 DI/DO for spare. All indicating meters/ multifunctions meters shall be communicable type with 0.5 class accuracy.	Nos.	1						
d)	Transformer ( CB relay Panel without A/R )	Nos.	2						
3	<b>33 KV CONTROL &amp; RELAY PANELS</b>								
	33 kV Panels (Duplex)								
	Control, Relay & Protection Panel for								
a)	Line with numerical type E.F & O/C relays complying to IEC 61850 protocol	Nos.	6						



Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
b)	TBC with numerical type E.F & O/C relays complying to IEC 61850 protocol	Nos.	1						
4	Other / common equipment pertaining to C&R system								
i)	Common equipment ( digital voltage and frequency meters for 220 kV , 132 kV and 33 KV system) All indicating meters/ multifunctions meters shall be communicable type with 0.5 class accuracy.	Set	1						
ii)	Relay test kit (Reputed manufacturer) Megger or Omicron make (Please furnished break up schedules )	Nos.	1						
G	PLCC								
1	<b>For 220 kV system</b>								
1.1	Line Traps 0.5 mH, 1600A 220 KV for both ends of transmission line.	No.	9						
1.2	Coupling device.	No.	9						
1.3	HF Cable*	KM	1.2						
1.4	Carrier equipment (for speech + protection + Data)	Nos.	4						
1.5	Digital Protection Coupler*	Nos.	4						
2	<b>For 132kV system</b>								
2.1	Line Traps								
a)	0.5 mH/1mH, 1250A, 132 kV	Nos.	4						

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					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
2.2	Coupling device*	Nos.	4						
2.3	HF Cable*	KM	1						
2.4	Carrier equipment (for speech + protection + Data)	Nos.	8						
2.5	Digital Protection Coupler	Nos.	8						
	*Item No. 1.0 to 5.0 above (132 kv PLCC) cover requirement at remote end also)								
2.6	Telephone instruments - 4 wire with cable	Nos.	1						
2.7	EPAX (24/8) with 24 telephones, cable etc.	Set	1						
2.8	Testing and Maintenance equipment (Print test kit)*(break up schedule to be furnished)	Set	2						
H 1	<b>BATTERIES (OPZS TYPE OF EXIDE MAKE)</b>								
1.1	220 V								
a)	500 AH	Sets.	2						
1.2	48 V								
a)	500 AH	Sets.	2						
H 2	<b>BATTERY CHARGER SYSTEM Exide make</b>								
1.1	250 V, 60A/50A Float and float Cum Boost Charger	Nos.	2						
1.2	48 V, 60A/50A Float and float Cum Boost Charger	Nos.	2						

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					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
I	Diesel Generator Set alongwith Control panel (100 kVA)	Set	1						
J	Air conditioning of control room with High wall type <u>5 star rated Split Air conditioner Units of 2 TR capacity with stablizer.</u>	Nos.	20						
K	<b>FIRE PROTECTION SYSTEM</b>								
1.1	Portable Fire Extinguishers								
a	4.5 Kg DCP Type	Nos.	10						
b	4.5 Kg CO2 Type	Nos.	16						
c	<u>22.5 Kg CO2 type</u>	Nos.	<u>3</u>						
d	<u>12 Fire buckets with stand</u>	LS	<u>2</u>						
1.2	<u>Complete pumping arrangement for HVWS system &amp; hydrant system, complete with all piping, valves, fittings, etc. inside pump house. (Pump house separate from control room as well as water storage tank to be constructed)</u>	Set	1						
1.3	Smoke detection system with all accessories and fittings	Set	1						
1.4	Hydrant system with complete U/G & O/G piping & accessories etc. (all items) out side the Pump House. Hydrant system shall cover the switchyard area,	Set	1						

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					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
	Transformers, control room, Stores etc. as per tender specification.								
1.5	<b>Complete HVW spray system with complete O/G &amp; U/G piping and accessories etc. (all items) with all required materials and equipments outside the pump house for 150 MVA, 2 Nos, 220/132/33 KV Auto transformers as per tender specification.</b>	LS	1						
L	<b>ILLUMINATION SYSTEM</b>								
L 1	<b>CONTROL ROOM BUILDING:</b>								
1	Lighting Panel								
a	Lighting Panel (Indoor) <b>Type ACP-1</b> as per Tech. Specification	Nos.	4						
b	Lighting Panel (Indoor) <b>Type DCP</b> as per Tech. Specification	Nos.	1						
2	<b>Lighting fixtures and receptacles (including accessories/ materials etc. as per requirement like junction box, cable/wires, flexible conduits (if required) from junction box to lighting fixtures, mounting arrangements)</b>								
a	Lighting fixture <b>Type- F1</b> as per Tech. Specification	Nos.	50						
b	Lighting fixture <b>Type- FF:</b> as per Tech. Specification	Nos.	100						
c	Lighting fixture <b>Type- IF:</b> as per Tech. Specification	Nos.	30						

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					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
d	Lighting fixture <b>Type- FB:</b> as per Tech. Specification	Nos.	30						
e	Lighting fixture <b>Type- PF:</b> as per Tech. Specification	Nos.	5						
f	5/15 A, 240V: Indoor Receptacles 3 pin type ( <b>type RI</b> )	Nos.	20						
g	15A, 240V: Outdoor receptacles 2 pole, 3 pin type ( <b>Type RO</b> )	Nos.	2						
h	63A, 415V : Interlocked switch socket outdoor Receptacles ( <b>Type RP</b> )	Nos.	2						
3	<b>Switchboards</b>								
a	Modular switch board with 4 nos. 5Amp. Switches and 1 no. 5/15 Amp. receptacles	Nos.	30						
b	Modular switchboard with 6 nos. 5Amp. Switches	Nos.	15						
c	Modular switchboard with 2 nos. 5Amp. Switches	Nos.	15						
d	Modular switchboard with 6 nos. 32 Amp MCB	Nos.	1						
e	Modular switchboard with 1 no. 32 Amp. MCB	Nos.	1						
4	<b>Ceiling fans</b>								
a	1400 mm sweep with electronic step regulator	Nos.	20						
5	Exhaust fans	Nos.	10						
6	Wall mounted fans 400 mm sweep	Nos.	6						
7	<b>Conduits &amp; wires</b>								

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
a	Heavy duty PVC conduits as of 20/25/32 mm size complete with all accessories for point wiring for Light points, Fans power points 5/15 amps. With 2.5 sq.mm/4 mm <sup>2</sup> /6.0 mm <sup>2</sup> copper for circuit wiring and 1.5 mm <sup>2</sup> copper earth wire PVC insulated in green color including wiring for submains i.e. wiring from Lighting panel to switch board.	LS	1						
b	Wiring from lighting panel to switch boards, from switchboard to junction boxes for light points with 2.5/4.0/6.0 mm <sup>2</sup> copper wire as per technical specification, complete in all respect. 1.5 mm <sup>2</sup> copper wire (green) will be used for earthing inside conduits	LS	1						
c	<b>Telephone sockets</b>								
c.1	Single socket outlet comprising RJ-11 socket	Nos.	32						
c.2	Dual socket outlet comprising RJ-45 socket	Nos.	16						
8	Junction boxes with 4 nos. of terminal blocks for indoor lighting excluding junction box supplied alongwith lighting fixture	Nos.	5						
9	Lighting Transformer 100 kVA, 415/415, 3 phase, 50 Hz dry type as per Tech. Specification.	Nos.	3						
10	Self-supported aluminium ladder as per technical specification	Nos.	1						
L ii	<b>FFPH Building</b>								

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
1	Lighting fixtures and receptacles (including accessories/ materials etc. as per requirement like junction box, cable/wires, flexible conduits (if required) from junction box to lighting fixtures, mounting arrangements)								
a	Lighting fixture <b>Type- F1</b> : as per Tech. Specification	Nos.	25						
b	Lighting fixture <b>Type- IF</b> : as per Tech. Specification	Nos.	7						
c	Lighting fixture <b>Type- FB</b> : as per Tech. Specification	Nos.	12						
d	Lighting fixture <b>Type- PF</b> : as per Tech. Specification	Nos.	3						
e	5/15 A, 240V: Indoor Receptacles 3 pin type ( <b>type RI</b> )	Nos.	5						
2	<b>Switchboards</b>								
a	Modular switch board with 4 nos. 5Amp. Switches and 1 no. 5/15 Amp. receptacles	Nos.	7						
b	Modular switchboard with 6 nos. 5Amp. Switches	Nos.	5						
c	Modular switchboard with 2 nos. 5Amp. Switches	Nos.	5						
3	Ceiling fans								
a	1400 mm sweep with electronic step regulator	Nos.	5						
4	Exhaust fans	Nos.	2						
5	Wall mounted fans 400 mm sweep	Nos.	4						

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
6	<b>Conduits &amp; wires</b>								
a	Heavy duty PVC conduits as of 20/25/32 mm size complete with all accessories for point wiring for Light points, Fans power points 5/15 amps. With 2.5 sq.mm/4 mm <sup>2</sup> /6.0 mm <sup>2</sup> copper for circuit wiring and 1.5 mm <sup>2</sup> copper earth wire PVC insulated in green color including wiring for submains i.e. wiring from Lighting panel to switch board.	LS	1						
b	Wiring from lighting panel to switch boards, from switchboard to junction boxes for light points with 2.5/4.0/6.0 mm <sup>2</sup> copper wire as per technical specification, complete in all respect. 1.5 mm <sup>2</sup> copper wire (green) will be used for earthing inside conduits	Lot	1						
7	Junction boxes with 4 nos of terminal blocks for indoor lighting excuding junction box supplied alongwith lighting fixtures.	Nos.	2						
L. III	Outdoor lighting (Switchyard and street lighting)								
1	Lighting panel								
a	Lighting panel (Outdoor) Type ACP - 2	Nos.	8						
b	Lighting panel (Outdoor) Type ACP - 3	Nos.	3						



Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
2	Lighting fixtures and receptacles (including accessories/ materials etc. as per requirement like junction box, cable/wires, flexible conduits (if required) from junction box to lighting fixtures, mounting arrangements)								
a	Lighting fixture <b>Type- SF1:</b> as per Tech. Specification	Nos.	20						
b	Lighting fixture <b>Type- SF2:</b> as per Tech. Specification	Nos.	30						
c	Lighting fixture <b>Type- MP:</b> as per Tech. Specification	Nos.	6						
d	Lighting fixture <b>Type- SC:</b> as per Tech. Specification	Nos.	35						
e	15A, 240V : Outdoor receptacles 2 pole, 3 pin type ( <b>Type RO</b> )	Nos.	10						
f	63A, 415V: Interlocked switch socket outdoor receptacles ( <b>Type RP</b> )	Nos.	10						
3	Lighting poles Type A1	Nos.	50						
4	Lighting poles Type E1	Nos.	5						
5	Cart wheel mounted aluminium ladder as per Tech. Specification	Nos.	1						
M	Cables alongwith associated accessories like clamps, glands, lugs and straight joints etc.								

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
1.1	<b>Power cables (XLPE) 1.1 kV</b>								
a	1C X 630 mm <sup>2</sup>	Lot	1						
b	3.5C X 300 mm <sup>2</sup>	Lot	1						
c	3.5C X 150 mm <sup>2</sup>	Lot	1						
d	1C X 150 mm <sup>2</sup>	Lot	1						
1.2	<b>Power cables (PVC) 1.1 kV</b>								
a	3.5C X 70 mm <sup>2</sup>	Lot	1						
b	3.5C X 35 mm <sup>2</sup>	Lot	1						
c	4C X 16 mm <sup>2</sup>	Lot	1						
d	4C X 6 mm <sup>2</sup>	Lot	1						
e	2C X 6 mm <sup>2</sup>	Lot	1						
1.3	<b>Control cable (PVC) 1.1 kV</b>								
a	2C X 2.5 mm <sup>2</sup>	Lot	1						
b	3C X 2.5 mm <sup>2</sup>	Lot	1						
c	5C X 2.5 mm <sup>2</sup>	Lot	1						
d	7C X 2.5 mm <sup>2</sup>	Lot	1						
e	10C X 2.5 mm <sup>2</sup>	Lot	1						
f	14C X 2.5 mm <sup>2</sup>	Lot	1						

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
g	19C X 2.5 mm <sup>2</sup>	Lot	1						
h	27C X 2.5 mm <sup>2</sup>	Lot	1						
N	Materials for earthing mat with all materials and accessories as well as spikes as per requirement of design as per IEEE standards for complete earthing of grid Sub-Station with the followings. (The quantity is tentative and final quantity will depend on actual design):-								
1	<b>40 mm MS rod for main earth mat</b>	MT	120						
2	<b>75x12 mm G.I Flats for risers for equipments, columns and structures</b>	MT	40						
3	<b>50x6 mm G.I flats for risers for all other equipments etc.</b>	MT	20						
4	<b>Materials for Earthing pits with supply of all earthing materials including base plate.</b>	LS	1						
O	<b>Sub- Station galvanized Steel structure (220 kV, 132 KV &amp; 33 KV) (The quantity is tentative and final quantity will depend on actual design):-</b>								
1	<b>Lattice structure with fasteners etc.</b>	MT	220						
2	<b>Standard structure for equipment support (other than CB)</b>	MT	51						
P	<b>Mandatory spares.</b>								

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
1	220/132/33 kV, 150 MVA Transformer	LS	1						
2	132/33 KV 50 MVA Transformer	LS	1						
3	220 kV CB	LS	1						
4	132 kV CB	LS	1						
5	33 kV CB	LS	1						
6	220 kV Isolator	LS	1						
7	132 kV Isolator	LS	1						
8	33 KV Isolators	LS	1						
9	220 kV CT, 1600A, 120% extended current rating	Nos.	1						
10	220 kV CT, 1600A, 150% extended current rating	Nos.	1						
11	132 kV CT, 1200A, 120% extended current rating	Nos.	1						
12	132 KV CT 600A 120% extended	Nos.	1						
12	33 KV CT, 1200A,	Nos.	1						
13	33 KV CT, 600A,	Nos.	1						
14	220 kV CVT, 4400 pF	Nos.	1						
15	132 kV CVT, 8800 pF	Nos.	1						

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
16	216 kV surge arrester	Nos.	1						
17	120 kV surge arrester	Nos.	1						
18	30 kV Surge arresters	Nos.	1						
19	C&R Panels	LS	1						
20	PLCC	LS	1						
21	LT Transformer, 630 KVA	LS	1						
22	Batteries (220V & 48V)	LS	1						
23	Battery Charger (220 V & 48 V)	LS	1						
24	DG Set	LS	1						
25	LT Switchgear	LS	1						
26	Fire fighting System	LS	1						
27	Erection Hardware	LS	1						
28	33 KV Potential Transformer	Nos.	1						
29	Illumination	LS	1						
Q	<b>Maintenance &amp; Testing equipment for CB and transformer comprising of the following equipments:</b>								
1	BDV Test kit (2.5/4 mm) - <u>100 KV Microprocessor based</u>	No.	1						

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
2	Megger 5 kV /Insulation tester, <u>Micro processor based of Meggar make</u>	No.	1						
3	Digital multimeter (3½ digit)	No.	1						
4	Oil sampling bottle	Nos.	3						
5	Portable SF6 gas refilling device	No.	1						
6	Capacitance and tan delta kit of <u>Megger/Eq. make</u>	No.	1						
7	Transformer winding resistance meter	No.	1						
8	Automatic Transformer turns ratio meter ( <u>Micro processor based</u> ) of Meggar make.	No.	1						
9	Kalfisher Dew point kit for SF6 gas.	No.	1						
10	SF6 gas evacuating, filtering and drying plant	No.	1						
11	Transformer oil filtration plant (4 KL / Hr. capacity) <u>complete with all accessories</u>	No.	1						
12	Circuit breaker analyser	No.	1						
13	Primary current injection kit	No.	1						
14	Secondary current injection kit	No.	1						
15	Relay operation timer	No.	1						
16	Selective level meter	No.	1						
17	Selective level generator	No.	1						
<b>R</b>	<b>Cable Racks as per design requirement.</b>	MT	25						

Sl. No.	Item Description	Unit	Qty	Unit Ex Works Price(Rs)	Total Ex Works Price(Rs)	Mode of transaction (Direct or bought out items)	Taxes & duties (Rs.)	Unit Supply Price incl. of Taxes & Duties (Rs.)	Total Supply Price incl. of Taxes & Duties (Rs.)
					(4 x 5)			(5+8)	(6+8)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
S	Sub- Station automation system comprising of necessary equipments & materials wth networking and interfacing, complete in all respect (Break up of item to be given by <u>contractor in technical data sheet with Part-I of the tender</u> )wherever applicable, the <u>communication protocol shall be preferably IEC61850.</u>	LS	1						
<b>T</b>	<b>Overhead shielding</b>								
i.	Overhead shielding against lightning by galvanized steel wires and fittings as per requirement and design (excluding lighting cum lightning mast)	LS	1						
ii.	Lighting cum lightning masts as per design	Sets.	4						
U	Any other item.	LS	1						
<b>TOTAL</b>									

Note: Where the tender quantity is shown above as “LS” (Lump sum) or “set”, the corresponding break-up quantity is to be assessed by the bidder and indicated .

## FREIGHT, INSURANCE & ERECTION CHARGES

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
<b>A-1</b>	<b>TRANSFORMER</b>								
1.1	150 MVA Three phase 220/132/33 KV Auto Transformer without oil <u>Complete with all accessories, marshaling boxes, terminal connectors etc.</u>	Nos.	2						
1.2	Transformer oil for the above <u>with 10% extra oil.</u>	Lot	2						
1.3	Type test charges including service tax etc. to be conducted on only one Transformer	LS	1						
1.4	50 MVA Three phase 132 /33 KV Transformer <u>Complete with all accessories, marshaling boxes, terminal connectors etc.</u>	Nos	2						
1.5	Transformer oil for the above <u>with 10% extra oil.</u>	lot	2						
1.6	Type test charges including service tax etc. to be conducted on only one Transformer	LS	1						
A2	LT Transformer								
1.1	630 KVA, 33/0.433kV LT transformer with oil, accessories and terminal connectors	Nos.	2						
<b>B-1</b>	<b>220 kV EQUIPMENT</b>								
1	Circuit breaker (3 phase)								



Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
i)	<u>2500 A, 40 kA SF – 6 CB with support structure, marshalling boxes, terminal connectors etc.(current rating shall be equal to the current rating for which the short circuit test reports shall be furnished. (Spring- Spring Mechanism )</u>	No	8						
2	ISOLATORS (3 phase), with solid core insulators, marshalling boxes, terminal connectors (Motor Operated) with moving contact of HDEC copper only.								
i)	1600 A, 40 kA with two earth switch (Double break Isolator)	Nos.	8						
ii)	1600 A, 40 kA with one earth switch (Double break Isolator)	Nos.	8						
iii)	1600 A, 40 kA without earth switch (Double break Isolator) (Tandem arrangement)	Nos.	14						
iv)	2500 A, 40 kA with two earth switch (Double break Isolator)	Nos.	2						
v)	<u>2500 A, 40KA without earth switch double breaker insulator (high level beam mounted) two nos of isolators shall be provided as sectionaliser of 220 KV main bus-1</u>	Nos.	2						
3	<u>CURRENT TRANSFORMER 5 Core (1 phase) WITH MARSHALING BOXES TERMINAL CONNECTORS</u>								

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
i)	<u>1600-800-400-200/1-1-1-1-1</u> A, 120% extended current rating, 40 kA, 0.2 class 5 core	Nos.	21						
ii)	<u>1600-800-400-200/1-1-1-1-1</u> A, 150% extended current rating, 40 kA, 0.2 class 5 core	Nos.	3						
4	220 KV CVT 4400 pF CVTs (1 phase) <u>for phase to phase coupling with all accessories, terminal connectors etc.</u>	Nos.	21						
5	216 kV Surge Arresters (1 phase) <u>class-III with terminal connectors.</u>	Nos.	15						
6	Portable discharge rods	Nos.	6						
B – II	ERECTION HARDWARE (220 kV)								
1.1	Erection Hardware (Without BPI)								
	Insulator strings <b>antifog</b> type & hardware, spacers, conductor (S), Bus bar material, cable trays, bay MB, Clamps, Connectors including, Junction box, PVC pipes for equipment and lighting, all accessories etc. for the following <u>(The main I &amp; main II buses shall be of quad Moose ACSR Conductor &amp; TBC as well as Bus Coupler will be of double Moose conductor.</u>								
	220 kV, Double Main & Transfer bus type								
i	Line bay	set	6						
ii	Transformer bay	Set	2						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
iii	TBC bay	Set	1						
iv	BC bay	Set	1						
v	Bus (for fourteen bays-10 bays now and 4 bays for future extn) (one no each for main I, main II & trasfer bus)	Set	3						
1.2	220 kV <u>Solid Core</u> , Bus post Insulators (including requirement for wave trap) (break up of quantity to be furnished by bidder)	Nos	<b>144</b>						
C - 1	132 kV EQUIPMENT								
1	Circuit breaker (3 phase)								
i)	1250 A, 31.5 kA SF 6 CB <u>with support structure, marshalling boxes, terminal connectors etc.(current rating shall be equal to the current rating for which the short cuircuit test reports shall be furnished.)</u> (Spring -Spring )	Nos.	9						
2	ISOLATORS (3 phase), <u>with solid core insulators, marshaling boxes, terminal connectors (Motor Operated) with moving contact of HDEC copper only.</u>								
i)	1250 A, 31.5 kA with one earth switch (Double break Isolator)	Nos.	4						
ii)	1250 A, 31.5 kA without earth switch (Double break Isolator)	Nos.	14						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
iii)	1250 A, 31.5 kA without earth switch (Double break Isolator)(Tandem arrangement)	Nos.	9						
iv)	1600 A, 31.5 kA without earth switch (Double break high level beam mounted Isolator)	Nos.	2						
3	<u>Portable discharge rods ( 1 phase)</u>	<u>Nos.</u>	<u>6</u>						
4	Current Transformers 5 core (1 phase)								
i)	1200 -600-300-150/1-1-1-1 A, 5 core 0.2 class ,31.5 kA with 120% extended current rating <u>with marshalling boxes, terminal connectors etc.</u>	Nos.	9						
ii)	600-300-150/1-1-1-1 A, 5 core 0.2 class ,31.5 kA with 120% extended current rating <u>with marshalling boxes, terminal connectors etc.</u>	Nos.	18						
5	8800 pF CVTs (1 phase) with marshalling boxes, terminal connectors etc .	Nos.	12						
6	120 kV Surge arresters class-III ( 1 phase) with marshalling boxes, terminal connectors etc.	Nos.	24						
C – II									
1.1	ERECTION HARDWARE (132 kV)								

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
	Insulator strings antifog type & hardware, spacers, conductor (S), Bus bar material, cable trays, bay MB, Clamps, Connectors including, Junction box,PVC pipes for equipment and lighting, all accessories etc. for the following <u>(main bus shall be of quad Moose conductor and transfer bus shall be strung with double moose conductor)</u>								
	132 kV Main & Transfer bay								
i	Line bay	Set	6						
ii	Transformer bay	Set	2						
iii	TBC Bay	Set	1						
iv	Bus for fifteen bays(for fifteen bays-10 bays now and 5 bays for future extn) (One for main bus & another for transfer bus)	Set	2						
1.2	132 kV <u>Solid Core</u> , Bus post Insulators for erection hardware	Nos.	<b>58</b>						
D	<b>33 kV EQUIPMENT</b>								
1	<b>Circuit Breaker (3 Phase)</b>								
i)	1250 A, 25KA Vacume CB with support structure, <u>marshalling boxes, terminal connectors etc. (current rating shall be equail to the current rating for which the short circuit test report shall be furnished) (Spring- Spring )</u>	Nos	10						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
2	ISOLATORS (3 phase), with solid core insulators, marshalling boxes, terminal connectors (Manually operated) with moving contact of HDEC copper only.								
i)	1250 A, 25 kA with one earth switch (Double break Isolator)	Nos.	9						
ii)	1250 A, 25 kA without earth switch (Double break Isolator)	Nos.	14						
iii)	1250 A, 25 kA without earth switch (Double break Isolator)(Tandem arrangement)	Nos.	9						
iv)	2500 A, 25 kA without earth switch (Double break high level beam mounted Isolator)	Nos.	2						
3	1200A, Horn gap fuse ( 1 phase)	Nos.	6						
4	<b>Current Transformers (1 phase)</b>								
i)	600-300-150/1 A, 5 core 0.2 class 25 kA with 120% extended current rating <u>with marshalling boxes terminal connectors</u>	Nos.	21						
ii)	1200 -600-300/1A, 5 core 0.2 class 25 kA with 120% extended current rating <u>with marshalling boxes terminal connectors</u>	Nos.	9						
5	33 KV, 0.2 class Potential Transformer (1 phase) <u>with marshalling boxes terminal connectors</u>	Nos.	3						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
6	30 kV Surge arresters <u>class 3 ( 1 phase) with marshalling boxes terminal connectors</u>	Nos	30						
7	Portable discharge rods.	Nos.	6						
8	<b>ERECTION HARDWARE (33 kV)</b>								
	ERECTION HARDWARE without Bus Post Insulators								
8.1	Insulator strings & Hardware Spacers, conductor (s) bus- bar material, cable tray, Bay MB, clamps, connectors including Junction Box, PVC pipes for equipments & lighting, all accessories etc. for the following (The main bus shall be strung with quad moose ACSR conductor & 33 KV main bus shall be of double moose conductor								
i)	Line Bay	Set	7						
ii)	Transformer Bay	Set	2						
iii)	TBC Bay	Set	1						
iv)	Bus (For eighteen bays-13 bays now and 5 bays for future extn)	Set	2						
8.2	33 kV <u>Solid core Bus post</u> Insulators for erection hardware	Nos.	<b>45</b>						
E	LT Switchgear								
i	415 V Main switch Board	Set	1						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
ii	415 V ACDB (no of feeders shall be asper the requirement of the project plus 20% extra feeders)	Set	1						
iii	415V MLDB	Set	1						
iv	415V Emergency LDB	Set	1						
v	250V DCDB (no of feeders shall be asper the requirement of the project plus 20% extra feeders)	Set	1						
vi	48V DCDB	Set	1						
F	CONTROL & RELAY PANELS								
1	220 kV (Simplex panels)								
1.1	Control Panel for Two bays. <u>All indicating meters/ multifunctions meters shall be communicable type with 0.5 class accuracy.</u>	Nos	4						
1.2 a)	CB relay panel with A/R	Nos.	6						
1.2 b)	CB relay panel without A/R	Nos.	3						
1.3	<u>Line protection panel with numerical distance protection relays and earth fault / overcurrent relays complying to IEC 61850 Protocol with optical fiber ports sufficient DI/DO for scheme with additional 6 DI/DO Ports for spare. All indicating meters/ multifunctions meters shall be communicable type with 0.5 class accuracy.</u>	Nos.	6						



Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
1.4	Transformer protection panel HV and LV sides) <u>with numerical differential protecton relays with earth fault/ over current relay complying to IEC 61850 Protocal with optical fiber ports and sufficient DI/DO for scheme with additional 6 DI/DO ports for spare.</u>	Nos.	2						
1.5	Transfer bus coupler panel with distance protection relay scheme with all relays	Nos.	1						
1.6	Bus coupler panel with all necessary relays etc.	Nos.	1						
1.7	Bus bar protection panel (bus bar protection will be low impedance, integrated type and not dishimble type and will have minimum 4 zones with numerical type of relays complying IEC 61850. Protocolas as and where applicable.	Set	1						
1.8	<u>Time Synchronization equiptment will have dual ethernet with RJ45 port.</u>	Set	1						
2	132 kV (Duplex Panels)								
2.1	Control, Relay & Protection Panel for								
a)	132 KV line (with A/R) <u>with numerical distance protection relays and earth fault / overcurrent relays complying to IEC 61850 Protocal with optical fiber ports sufficient DI/DO for scheme with additional 6 DI/DO for spare. All indicating meters/ multifunctions</u>	Nos.	4						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
	<u>meters shall be communicable type with 0.5 class accuracy.</u>								
b)	132/33 KV Transformer (without A/R) <u>with numerical differential protection relays and earth fault / overcurrent relays complying to IEC 61850 Protocol with optical fiber ports sufficient DI/DO for scheme with additional 6 DI/DO for spare.</u>	Nos.	2						
c)	132 kV TBC (with A/R) with numerical distance protection relays and earth fault / overcurrent relays complying to IEC 61850 Protocol with optical fiber ports sufficient DI/DO for scheme with additional 6 DI/DO for spare. All indicating meters/ multifunctions meters shall be communicable tpe with 0.5 class accuracy.	Nos.	1						
d)	Transformer ( CB relay Panel without A/R )	Nos.	2						
3	<b>33 KV CONTROL &amp; RELAY PANELS</b>								
	33 kV Panels (Duplex)								
	Control, Relay & Protection Panel for								
a)	Line with numerical type E.F & O/C relays complying to IEC 61850 protocol	Nos.	6						
b)	TBC with numerical type E.F & O/C relays complying to IEC 61850 protocol	Nos.	1						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
4	Other / common equipment pertaining to C&R system								
i)	Common equipment ( digital voltage and frequency meters for 220 kV , 132 kV and 33 KV system) All indicating meters/multifunctions meters shall be communicable tpe with 0.5 class accuracy.	Set	1						
ii)	Relay test kit (Reputed manufacturer) Megger or Omicron make (Please furnished break upscheduls )	Nos.	1						
G	PLCC								
1	<b>For 220 kV system</b>								
1.1	Line Traps 0.5 mH, 1600A 220 KV (for both ends of transmission line)	No.	12						
1.2	Coupling device.	No.	12						
1.3	HF Cable*	KM	1.2						
1.4	Carrier equipment (for speech + protection + Data)	Nos.	4						
1.5	Digital Protection Coupler*	Nos.	4						
2	<b>For 132kV system</b>								
2.1	Line Traps								
a)	0.5 mH/1mH, 1250A, 132 kV	Nos.	4						
2.2	Coupling device*	Nos.	4						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
2.3	HF Cable*	KM	1						
2.4	Carrier equipment (for speech + protection + Data)	Nos.	8						
2.5	Digital Protection Coupler	Nos.	8						
	*Item No. 1.0 to 5.0 above (132 kv PLCC) cover requirement at remote end also)								
2.6	Telephone insutruments - 4 wire with cable	Nos.	1						
2.7	EPAX (24/8) with 24 telephones, cable etc.	Set	1						
2.8	Testing and Maintenance equipment (Print test kit)*(break up schedule to be furnished)	Set	2						
H 1	<b>BATTERIES (OPZS TYPE OF EXIDE MAKE)</b>								
1.1	220 V								
a)	500 AH	Sets.	2						
1.2	48 V								
a)	500 AH	Sets.	2						
H 2	<b>BATTERY CHARGER SYSTEM Exide make</b>								
1.1	220 V, 60A/50A Float and float Cum Boost Charger	Nos.	2						
1.2	48 V, 60A/50A Float and float Cum Boost Charger	Nos.	2						
I	Diesel Generator Set alongwith Control panel (100 kVA)	Set	1						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
J	Air conditioning of control room with High wall type 5 star rated Split Air conditioner Units of 2 TR capacity with stablizer.	Nos.	20						
K	<b>FIRE PROTECTION SYSTEM</b>								
1.1	Portable Fire Extinguishers								
a	4.5 Kg DCP Type	Nos.	10						
b	4.5 Kg CO2 Type	Nos.	16						
c	<u>22.5 Kg CO2 type</u>	Nos.	<u>3</u>						
d	<u>12 Fire buckets with stand</u>	LS	<u>2</u>						
1.2	<u>Complete pumping arrangement for HVWS system &amp; hydrant system, complete with all piping, valves, fittings, etc. inside pump house. (Pump house separate from control room as well as water storage tank to be constructed)</u>	Set	1						
1.3	Smoke detection system with all accessories and fittings	Set	1						
1.4	Hydrant system with complete U/G & O/G piping & accessories etc. (all items) out side the Pump House. Hydrant system shall cover the switchyard area, Transformers, control room, Stores etc. as per tender specification.	Set	1						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
1.5	<b>Complete HVW spray system with complete O/G &amp; U/G piping and accessories etc.(all item) with all required materials and equipments out side the pump house for 150 MVA, 2 Nos, 220/132/33 KV auto transformers as per tender specification.</b>	LS	1						
L	<b>ILLUMINATION SYSTEM</b>								
L 1	<b>CONTROL ROOM BUILDING:</b>								
1	Lighting Panel								
a	Lighting Panel (Indoor) <b>Type ACP-1</b> as per Tech. Specification	Nos.	4						
b	Lighting Panel (Indoor) <b>Type DCP</b> as per Tech. Specification	Nos.	1						
2	<b>Lighting fixtures and receptacles (including accessories/ materials etc. as per requirement like junction box, cable/wires, flexible conduits (if required) from junction box to lighting fixtures, mounting arrangements)</b>								
a	Lighting fixture <b>Type- F1</b> as per Tech. Specification	Nos.	50						
b	Lighting fixture <b>Type- FF:</b> as per Tech. Specification	Nos.	100						
c	Lighting fixture <b>Type- IF:</b> as per Tech. Specification	Nos.	30						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
				5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
d	Lighting fixture <b>Type- FB:</b> as per Tech. Specification	Nos.	30						
e	Lighting fixture <b>Type- PF:</b> as per Tech. Specification	Nos.	5						
f	5/15 A, 240V: Indoor Receptacles 3 pin type ( <b>type RI</b> )	Nos.	20						
g	15A, 240V: Out door receptacles 2 pole, 3 pin type ( <b>Type RO</b> )	Nos.	2						
h	63A, 415V : Interlocked switch socket outdoor Receptacles ( <b>Type RP</b> )	Nos.	2						
3	<b>Switchboards</b>								
a	Modular switch board with 4 nos. 5Amp. Switches and 1 no. 5/15 Amp. receptacles	Nos.	30						
b	Modular switchboard with 6 nos. 5Amp. Switches	Nos.	15						
c	Modular switchboard with 2 nos. 5Amp. Switches	Nos.	15						
d	Modular switchboard with 6 nos. 32 Amp MCB	Nos.	1						
e	Modular switchboard with 1 no. 32 Amp. MCB	Nos.	1						
4	<b>Ceiling fans</b>								
a	1400 mm sweep with electronic step regulator	Nos.	20						
5	Exhaust fans	Nos.	10						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
6	Wall mounted fans 400 mm sweep	Nos.	6						
7	<b>Conduits &amp; wires</b>								
a	Heavy duty PVC conduits as of 20/25/32 mm size complete with all accessories for point wiring for Light points, Fans power points 5/15 amps. With 2.5 sq.mm/4 mm <sup>2</sup> /6.0 mm <sup>2</sup> copper for circuit wiring and 1.5 mm <sup>2</sup> copper earth wire PVC insulated in green color including wiring for submains i.e. wiring from Lighting panel to switch board.	LS	1						
b	Wiring from lighting panel to switch boards, from switchboard to junction boxes for light points with 2.5/4.0/6.0 mm <sup>2</sup> copper wire as per technical specification, complete in all respect. 1.5 mm <sup>2</sup> copper wire (green) will be used for earthing inside conduits	LS	1						
c	<b>Telephone sockets</b>								
c.1	Single socket outlet comprising RJ-11 socket	Nos.	32						
c.2	Dual socket outlet comprising RJ-45 socket	Nos.	16						
8	Junction boxes with 4 nos. of terminal blocks for indoor lighting excluding junction box supplied alongwith lighting fixture	Nos.	5						
9	Lighting Transformer 100 kVA, 415/415, 3 phase, 50 Hz dry type as per Tech. Specification.	Nos.	3						



Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
10	Self supported aluminium ladder as per technical specification	Nos.	1						
L ii	<b>FFPH Building</b>								
1	Lighting fixtures and receptacles (including accessories/ materials etc. as per requirement like junction box, cable/wires, flexible conduits (if required) from junction box to lighting fixtures, mounting arrangements)								
a	Lighting fixture <b>Type- F1:</b> as per Tech. Specification	Nos.	25						
b	Lighting fixture <b>Type- IF:</b> as per Tech. Specification	Nos.	7						
c	Lighting fixture <b>Type- FB:</b> as per Tech. Specification	Nos.	12						
d	Lighting fixture <b>Type- PF:</b> as per Tech. Specification	Nos.	3						
e	5/15 A, 240V: Indoor Receptacles 3 pin type ( <b>type RI</b> )	Nos.	5						
2	<b>Switchboards</b>								
a	Modular switch board with 4 nos. 5Amp. Switches and 1 no. 5/15 Amp. receptacles	Nos.	7						
b	Modular switchboard with 6 nos. 5Amp. Switches	Nos.	5						
c	Modular switchboard with 2 nos. 5Amp. Switches	Nos.	5						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
3	Ceiling fans								
a	1400 mm sweep with electronic step regulator	Nos.	5						
4	Exhaust fans	Nos.	2						
5	Wall mounted fans 400 mm sweep	Nos.	4						
6	<b>Conduits &amp; wires</b>								
a	Heavy duty PVC conduits as of 20/25/32 mm size complete with all accessories for point wiring for Light points, Fans power points 5/15 amps. With 2.5 sq.mm/4 mm2/6.0 mm2 copper for circuit wiring and 1.5 mm2 copper earth wire PVC insulated in green color including wiring for submains i.e. wiring from Lighting panel to switch board.	LS	1						
b	Wiring from lighting panel to switch boards, from switchboard to junction boxes for light points with 2.5/4.0/6.0 mm2 copper wire as per technical specification, complete in all respect. 1.5 mm2 copper wire (green) will be used for earthing inside conduits	Lot	1						
7	Junction boxes with 4 nos of terminal blocks for indoor lighting excuding junction box supplied alongwith lighting fixtures.	Nos.	2						
L. III	Outdoor lighting (Switchyard and street lighting)								

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
1	Lighting panel								
a	Lighting panel (Outdoor) Type ACP - 2	Nos.	8						
b	Lighting panel (Outdoor) Type ACP - 3	Nos.	3						
2	Lighting fixtures and receptacles (including accessories/ materials etc. as per requirement like junction box, cable/wires, flexible conduits (if required) from junction box to lighting fixtures, mounting arrangements)								
a	Lighting fixture <b>Type- SF1:</b> as per Tech. Specification	Nos.	20						
b	Lighting fixture <b>Type- SF2:</b> as per Tech. Specification	Nos.	30						
c	Lighting fixture <b>Type- MP:</b> as per Tech. Specification	Nos.	6						
d	Lighting fixture <b>Type- SC:</b> as per Tech. Specification	Nos.	35						
e	15A, 240V : Outdoor receptacles 2 pole, 3 pin type ( <b>Type RO</b> )	Nos.	10						
f	63A, 415V: Interlocked switch socket outdoor receptacles ( <b>Type RP</b> )	Nos.	10						
3	Lighting poles Type A1	Nos.	50						
4	Lighting poles Type E1	Nos.	5						
5	Cart wheel mounted aluminium ladder as per Tech. Specification	Nos.	1						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
M	Cables alongwith associated accessories like clamps, glands, lugs and straight joints etc.								
1.1	<b>Power cables (XLPE) 1.1 kV</b>								
a	1C X 630 mm <sup>2</sup>	Lot	1						
b	3.5C X 300 mm <sup>2</sup>	Lot	1						
c	3.5C X 150 mm <sup>2</sup>	Lot	1						
d	1C X 150 mm <sup>2</sup>	Lot	1						
1.2	<b>Power cables (PVC) 1.1 kV</b>								
a	3.5C X 70 mm <sup>2</sup>	Lot	1						
b	3.5C X 35 mm <sup>2</sup>	Lot	1						
c	4C X 16 mm <sup>2</sup>	Lot	1						
d	4C X 6 mm <sup>2</sup>	Lot	1						
e	2C X 6 mm <sup>2</sup>	Lot	1						
1.3	<b>Control cable (PVC) 1.1 kV</b>								
a	2C X 2.5 mm <sup>2</sup>	Lot	1						
b	3C X 2.5 mm <sup>2</sup>	Lot	1						
c	5C X 2.5 mm <sup>2</sup>	Lot	1						
d	7C X 2.5 mm <sup>2</sup>	Lot	1						
e	10C X 2.5 mm <sup>2</sup>	Lot	1						
f	14C X 2.5 mm <sup>2</sup>	Lot	1						
g	19C X 2.5 mm <sup>2</sup>	Lot	1						
h	27C X 2.5 mm <sup>2</sup>	Lot	1						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
N	Materials for earthing mat with all materials and accessories as well as spikes as per requirement of design as per IEEE standards for complete earthing of grid Sub-Station with the followings. (The quantity is tentative and final quantity will depend on actual design):-								
1	<b>40 mm MS rod for main earth mat</b>	MT	120						
2	<b>75x12 mm G.I Flats for risers for equipments, columns and structures</b>	MT	40						
3	<b>50x6 mm G.I flats for risers for all other equipments etc.</b>	MT	20						
4	<b>Materials for Earthing pits with supply of all earthing materials including base plate.</b>	LS	1						
O	<b>Sub- Station galvanized Steel structure (220 kV, 132 KV &amp; 33 KV) (The quantity is tentative and final quantity will depend on actual design):-</b>								
1	<b>Lattice structure with fasteners etc.</b>	MT	211						
2	<b>Standard structure for equipment support (other than CB)</b>	MT	44						
P	<b>Mandatory spares for (L.S items break up of spares furnished separately).</b>								
1	220/132/33 kV, 150 MVA Transformer	LS	1						
2	132/33 KV 50 MVA Transformer	LS	1						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
3	220 kV CB	LS	1						
4	132 kV CB	LS	1						
5	33 kV CB	LS	1						
6	220 kV Isolator	LS	1						
7	132 kV Isolator	LS	1						
8	33 KV Isolators	LS	1						
9	220 kV CT, 1600A, 120% extended current rating	Nos.	1						
10	220 kV CT, 1600A, 150% extended current rating	Nos.	1						
11	132 kV CT, 1200A, 120% extended current rating	Nos.	1						
12	132 KV CT 600A 120% extended	Nos.	1						
13	33 KV CT, 1200A,	Nos.	1						
14	33 KV CT, 600A,	Nos.	1						
15	220 kV CVT, 4400 pF	Nos.	1						
16	132 kV CVT, 8800 pF	Nos.	1						
17	216 kV surge arrester	Nos.	1						
18	120 kV surge arrester	Nos.	1						
19	30 kV Surge arresters	Nos.	1						
20	C&R Panels	LS	1						
21	PLCC	LS	1						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
22	LT Transformer, 630 KVA	LS	1						
23	Batteries (220V & 48V)	LS	1						
24	Battery Charger (220 V & 48 V)	LS	1						
25	DG Set	LS	1						
26	LT Switchgear	LS	1						
27	Fire fighting System	LS	1						
28	Erection Hardware	LS	1						
29	33 KV Potential Transformer	Nos.	1						
30	Illumination	LS	1						
Q	<b>Maintenance &amp; Testing equipment for CB and transformer comprising of the following equipments:</b>								
1	BDV Test kit (2.5/4 mm) - <u>100 KV Microprocessor based</u>	No.	1						
2	Megger 5 kV /Insulation tester, <u>Micro processor based of Meggar make</u>	No.	1						
3	Digital multimeter (3½ digit)	No.	1						
4	Oil sampling bottle	Nos.	3						
5	Portable SF6 gas refilling device	No.	1						
6	Capacitance and tan delta kit of <u>Megger/Eq. make</u>	No.	1						
7	Transformer winding resistance meter	No.	1						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
8	Automatic Transformer turns ratio meter (Micro processor based) of Meggar make.	No.	1						
9	Kalfisher Dew point kit for SF6 gas.	No.	1						
10	SF6 gas evacuating, filtering and drying plant	No.	1						
11	Transformer oil filtration plant (4 KL / Hr. capacity) <u>complete with all accessories</u>	No.	1						
12	Circuit breaker analyser	No.	1						
13	Primary current injection kit	No.	1						
14	Secondary current injection kit	No.	1						
15	Relay operation timer	No.	1						
16	Selective level meter	No	1						
17	Selective level generator	No.	1						
<b>R</b>	<b>Cable Racks as per design requirement.</b>	MT	25						
<b>S</b>	Sub- Station automation system comprising of necessary equipments & materials with networking and interfacing, complete in all respect (Break up of item to be given by contractor in technical data sheet with Part-I of the tender)wherever applicable, the communication protocol shall be preferably IEC61850.	LS	1						
<b>T</b>	<b>Overhead shielding</b>								



Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
i.	Overhead shielding against lightning by galvanized steel wires and fittings as per requirement and design (excluding lighting cum lightning mast)	LS	1						
ii.	Lighting cum lightning masts as per design	Sets.	4						
<b>U</b>	<b>CIVIL WORKS (as per specification)</b>								
1	Foundation works for all equipments & structures including transformers (furnish schedule)	LS	1						
2	Concrete road (including all crossings) as per drawing including reinforcement and concrete								
a	Road 3.75 Mtr.	LS	1						
3	Construction of new cable trenches including all types of crossing, cable trench covers (RCC) as per design.	LS	1						
4	All civil works as per drawing and specification for the following buildings (Complete with finishing):								
a)	Construction of complete Control Room Building (double storied ) of requisite size (27X19 Mtr), with floors as per specification, Aluminium doors and windows, glass panels, lavatory, provision for lifting heavy equipment to first floor, collapsible gate, grills, water storage tank etc. as per tender specification.	LS	1						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
b)	Ventillation System	LS	1						
c)	FF cum PH building with provision of guest house at first floor and furniture.	LS	1						
d)	Construction of self contained rest house over the pump house minimum 2 rooms with toilets with all fittings, 2 nos. Godrej make double beds, 2 mattress, 4 pillows, 2 tables & 4 Chairs, one no. dressing table	LS	1						
e)	Water tank for fire fighting.	LS	1						
f)	Parking shed	LS	1						
5	Rain water harvesting including reinforcement and concrete as per drawing.	LS	1						
i.	Construction of complete water drainage system with drain inside switchyard area, water sump. supply and installation of 3HP dewatering pumps (furnish separate schedule)	LS	1						
6	Water supply arrangement (from borewell to fire water tank & other use.)								
i	6"dia deep tube well complete with piping for supply for water supply	LS/ Lot	2						
ii	7.5 H.P. motor and pump set with associated piping, construction of Pump house for water supply purposes	LS/ Lot	1						
iii	Hand pump with separate boring with 1.5" pipe	LS/ Lot	1						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
7	Septic tank and soak pit complete as per the drawing	Lot	1						
8	Construction of sand pits 15' X 10' X 5' size with sand.	LS	1						
9	Complete work of Construction of store shed (100ftX30ft). With Two MS galvanized racks to be provided each of 5ft. wide, 20ft long and 9ft height with minimum three rows	LS	1						
10	Construction of room for DG set of requisite size (Minimum 6m X 6m)	LS	1						
11	Construction of Transformer oil soak pit as per drawing and CBIP recommendation (furnished schedule).	LS	1						
12	Soil investigation, contour mapping, layout details etc. (furnished schedule)	LS	1						
13	Land cleaning incl. cutting shrubs & bushes, leveling, anti-weed treatment, (furnished schedule).	LS	1						
14	Gravel filling in switchyard area including PCC and provision of cement slurry. The gravel filling shall be done in the complete switchyard area.	LS	1						
15	Chain link fencing of switchyard (galvanized wires and angles) with requisite foundation work, necessary earthy with painting with Aluminium paint of standard quality.	LS	1						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
16	Construction of 5.5 meter concrete approach road up to switchyard gate with culvert etc (furnish schedule)	LS	1						
17	Construction of main gate suitable for movement of heavy vehicals , trailers with transformers of upto 150 MVA and small gate for movement of staffs with check post, dormatory accomodation for eight Guards with "Chowki", beds, pillows & bedsheets, toilets etc.	LS	1						
18	Supply of Godrej make furniture for control room and office in charge of Grid Sub-station & computers ( two desktops with scanner and printer & one laptop) (Minimum 12 nos. of chairs, 2 tables and 2 steel Almirahs)	LS	1						
19	Landscaping of the area with plantation, lawn etc.	LS	1						
20	Painting of boundary wall with weather free paint of standard and approved make.	LS	1						
21	Land development, earth filling after contour mapping, land grading, land cleaning incl. cutting of shrubs & bushes, levelling, antiweed treatment, - upto FGL=HFL+300mm (as per requirement) and Construction of boundary wall with expended metal fencing and barbed wire and painting (as per specification)	LS	1						

Sl. No.	Item Description	Unit	Qty	Freight & Insurance Charges				Erection Charges	
				Unit Rate for freight including service tax, if any(Rs)	Total Price for freight including service tax if any (Rs)	Unit Rate for Insurance including service tax if any (Rs)	Total price for for Insurance including service tax if any (Rs)	Unit Prices for Erection & commissioning including service tax(Rs)	Total Erection and comm charges including service tax(Rs.)
1	2	3	4	5	6 (4x5)	7	8 (4x7)	9	10 (4x9)
22	Any other item.	LS	1						
<b>TOTAL</b>									
<b>GRAND TOTAL (Erection Charges)</b>									

## **1.2.5 WORKS AND SERVICES:**

- 1.2.5.1 Unless otherwise agreed upon the following services shall be provided by the purchaser at the purchaser's usual rate of charges. Power supply of 3 phase, 415 V, 50 HZ at one central point within the work site.
- 1.2.5.2 The tenderer shall inform the purchaser, the quantum of power required at least one month in advance of commencement of work at site.
- 1.2.5.3 The purchaser shall not be responsible for any inconvenience or delay caused due to failure of power supply and no compensation for such failure or delay in works on this account can be claimed by the tenderer.
- 1.2.5.4 Contractor shall have to arrange his own workshop, as required within the work site.
- 1.2.5.5 All security arrangements for watch and guard at work site shall be made by the tenderer at his cost.
- 1.2.5.6 The following works and services shall also be provided by the contractor.
  - a) Unloading the equipments from the rail or road transport and moving those to storage area. Demurrage charge, if any, incurred shall be paid by the contractor.
  - b) Opening of packing cases, inspection and checking of materials for any damage or loss in transit. All claims with the concerned authorities e.g. rail, transport, insurance etc. shall be lodged by the contractor.
  - c) Complete erection of equipments, structures etc. covered under the contract, final preparation for testing, commissioning, final run and acceptance tests and putting the plant into operation.
  - d) All consumable stores required for the above erection and commissioning works.
  - e) Watch and guard to ensure security and safety of materials under his custody and at work site.
  - f) All erection tools, lifting tackles, also all equipment, tools and tackles for transportation at site and putting the sub-station in operation.
  - g) All ladders, platforms, temporary supports and facilities required for handling heavy packages and for erection, commissioning of the equipment at site and putting the sub-station in operation.
  - h) Third party insurance at site and insurance of personnel employed at site as required under workmen's compensation Act.
  - i) Necessary Engineers and supervisory personnel with approved licenses as per provisions of I.E. Rules as amended up-to-date.
  - j) Contractor shall take all safety precautions during work and the workmen must use safety belts, hand gloves, masks and other devices as may be necessary for safety of personnel.
  - k) Contractor shall provide identity cards for his employees. This should be properly displayed during working hours.
  - l) Contractor shall employ competent and skilled workmen, fully experienced and capable of performing duties assigned to them. When local laws require, the employee shall be required to acquire certificates of company for his work from the competent authority.
  - m) The contractor shall provide operating personnel's during trials tests and till the Grid Sub-Station is taken over by the JUSNL, specified in taking over clause defined later.

## **1.2.6 TARGET DATE FOR COMPLETING WORK:**

- 1.2.6.1 The completion period of the total work of commissioning of Grid Sub - Station shall be **18 (eighteen) calendar months from the date of Letter of Intent**. This shall include supply of all equipments, materials and erection, testing, commissioning of the same.
- 1.2.6.2 The work shall be considered to be completed only when all the supply, delivery, installation, testing and commissioning of all necessary parts and equipments along with spares parts shall be made and the Electrical Superintending Engineer, **Transmission Circle, Dhanbad** under whom the work is being carried out will issue a certificate to this effect.

## **1.2.7 EARNEST MONEY**

- 1.2.7.1 The amount of EMD shall be 2% of estimated cost of project for projects/works having estimate cost upto Rs. 5.00 Cr. For project cost beyond Rs. 5.00 Cr, the EMD shall be Rs. 10.00 Lakhs plus 1% of estimated cost exceeding Rs. 5.00 Cr. The EMD shall be either in form of Bank Draft or Bank Guarantee. EMD amounting to Rs. 5,000.00 or less may be deposited in cash. Validity of EMD will be 60 days beyond bid validity.
- 1.2.7.2 The tender must be accompanied by earnest money of **Rs. 73.86 Lacs (Rupees Seventy Three Lac Eighty Six Thousand) only** in the form of Bank Guarantee/ Demand Draft of the any Nationalized Bank of India in favour of **Accounts Officer, Jharkhand Urja Sancharan Nigam Limited, Ranchi** failing which the tender shall be summarily rejected. Validity of EMD will be 60 days beyond bid validity.
- Bank drafts / Bank Guarantee towards Earnest Money, Performance Guarantee, Payment Guarantee etc. issued by Nationalised bank shall be acceptable.
- 1.2.7.3 Cheque/Fixed deposit receipts are not acceptable towards deposit of earnest money. Tenders accompanied with above on account of Earnest Money will be considered as without Earnest Money.
- 1.2.7.4 No Earnest money will be accepted after opening of tender.
- 1.2.7.5 The Earnest money deposit will be refunded to each of the un-successful tenderer on application. In case of the successful tenderer or tenderers it will be retained and no interest on Earnest Money will be payable.
- 1.2.7.6 In the event, the successful tenderer fails to sign the contract Agreement with JUSNL within 30 days after receiving notice of award of contract and fails to submit a contract guarantee as specified in this document, Earnest Money deposited will be forfeited to compensate damage to JHARKHAND URJA SANCHARAN NIGAM LTD., Ranchi. The Earnest Money of the successful Tenderer shall be returned after they will furnish the contract guarantee.
- 1.2.7.7 The Earnest Money shall be furnished in a separate sealed cover and shall accompany with the commercial part of the tender bid.
- 1.2.7.8 Any bid/tender not accompanied by Earnest Money will be rejected as non responsive.
- 1.2.7.9 This Earnest Money is required to protect JUSNL against the risk of the bidder's conduct which would warrant the Earnest Money forfeiture under the conditions detailed in the specification.
- 1.2.7.10 **The Earnest Money shall be valid for a period of 240 days from the date of opening of the Part-I i.e, Techno-commercial part of the tender.**

## **1.2.8 RIGHT OF CHIEF ENGINEER (TRANSMISSION)**

- 1.2.8.1 The Chief Engineer (Trans.) reserves the right to accept or reject part or whole of any or all of the tender, without assigning any reason.

1.2.8.2 The Chief Engineer (Trans.) reserves the right to cancel whole or part of the awarded contract without assigning any reason of those firms which are found defaulter of delayed work.

### **1.2.9 INFORMATION REQUIRED WITH THE PROPOSAL :**

1.2.9.1 The tenderers must indicate the name of the manufacturer, the type or model of each principal item of equipments and/or materials proposed to be supplied. The tender shall also contain drawings and description of materials, indicating general dimension and the materials from which the parts are manufactured and principles of operation.

1.2.9.1 The above information's shall be provided by the tenderer in the form of separate sheets, drawings, catalogues etc. in four copies.

1.2.9.2 Any tender not containing sufficient description of material/ equipment and/or materials proposed will be treated as incomplete and hence rejected, Such description of materials and drawings submitted by the tenderer will be retained by the purchaser. Any major departure from these drawings and description of materials submitted will not be permitted during the execution of the contract without specific written permission of the purchaser.

1.2.9.3 Oral statements made by the tenderer at any time regarding quality, quantity or arrangement of the equipment and/or materials or any other matter will not be considered.

1.2.9.4 Standard catalogue and other documents may be used in the tender to provide additional information and data as deemed necessary by the tenderer.

1.2.9.5 The Tenderer/contractor shall strictly adhere to the work schedule. He will develop and furnish a detailed schedule in the form of a master network and bar chart clearly identifying key phases in various areas of the work like designs, drawings approval, manufacture, testing at works and ex-works delivery of the equipment and materials as covered under, this tender specifications based on the total time allowed for completion of complete work within 15 days from the date of the L.O.I.

### **1.2.10 UNDERSTANDING AND CLARIFICATIONS :**

1.2.10.1 The tenderer is required to carefully examine the specifications and documents and fully inform himself to all conditions and matters which may in any way affect the performance of the contract or cost thereof. If any tenderer finds discrepancies or omissions in the specifications and documents or is in doubt as to the true meaning of any part, he shall at once request in writing for an interpretation/ clarifications to the purchaser in triplicate. The purchaser will then issue interpretation and clarifications. The tenderer may submit tender but within the date and time as already specified in this specification. All such interpretations and clarifications shall form a part of the specifications and documents and accompany the proposal of the tenderer.

1.2.10.2 Verbal clarifications and information's given by the purchaser or his representatives shall not in any way be binding on the purchaser.

1.2.10.3 A pre-bid meeting shall be held in this regard for sorting out issues if any.

1.2.10.4 Schedule are enclosed with this specification to indicate the deviations present in the bid with respect to tender specification (Schedule –C for technical deviation and schedule –D for General and commercial deviation etc ).Only deviations quoted in above schedules would be considered for bid evaluation and other purpose. The deviation of any nature indicated elsewhere, not drawn out in above schedules, shall not be taken into cognizance.

1.2.10.5 It is the responsibility of contractor to point out discrepancy present in the specification/price schedule by way of clarification during pre-bid meeting or otherwise before scheduled opening date in writing. If not done so, the contractor would be bound to execute the work as per the standard practice /ISS/IEC/CBIP irrespective of



shortcoming present in tender specification, if any, or work order issued in line with tender specification.

#### **1.2.11 LOCAL CONDITIONS :**

- 1.2.11.1 It will be imperative on each tenderer to fully inform himself of all local conditions and factors which shall have any effect on the performance of the contract or cost thereof. The purchaser shall not entertain any request for clarifications from tenderer regarding such local conditions.
- 1.2.11.2 It is understood and agreed that such factors have properly been investigated and considered while submitting the proposals. No claim for financial adjustments to any contract awarded under these specifications and documents will be entertained by the purchaser neither any change in the time schedule of the contract nor any financial adjustments arising thereof shall be permitted to the contractor which are based on the lack of such clear information or its effect on the cost of contract.

#### **1.2.12 QUANTITY :**

1.2.12.1 The requirement/ quantity mentioned in the tender notice and general conditions is tentative and is subject to increase or decrease at the time of finalisation of the tender. No claim will be entertained for the decrease in quantity or elimination of items tendered. Any other work required and essential for completion of the Job and not mentioned in the tender specification shall be done by the contractor without extra cost to JUSNL

1.2.12.2 The scope of work under this tender/contract shall be generally as detailed under this tender specification. JUSNL reserves the right to increase or decrease the quantities of works/ items covered under this contract during its execution without any change in the rates, terms and conditions. There shall be no limit of quantity for the individual items but the total variations in all **such items shall be limited to plus twenty percent (+20%) of the contract prices without any change in unit rates, terms and conditions.**

#### **1.2.12.3 CHANGE OF QUANTITY**

1.2.12.3.1 The variation in quantities of the items for which quantities have been mentioned by JUSNL in the specification, shall be applicable as detailed under preceding para 1.2.12.2. However, no variation shall be admissible for the quantities of the items for which the tenderer shall specify the quantity, specified for the scope of work as per tender specification, or any additional items.

The unit rates and quantity will be specified in the work order to be placed on the successful tenderer. However, the payment shall be made for the actual quantity executed by the contractor.

1.2.12.3.2 Quantity variation will not be permitted in the following case:

- a) Items for which quantities have been indicated as lump-sum or lot or set and/or
- b) Items for which quantities are to be estimated by the tenderer, including additional items [Cl. 1.2.12.3.1 above] considered necessary by the tenderer for successful completion of the works as per technical specifications and indicated by tenderer in his tender shall remain constant unless there is change in scope of work by JUSNL The quantities and price (a) subsequently arrived while approving the Bill of quantities (BOQ)/ Billing breakup of lump-sum/lot/set quantity and (b) quantities estimated by the tenderer shall be for on account purposes only. In case additional quantities, over and above the quantities in BOQ/billing break-up and/or estimated by the tenderer/contractor, are required for the successful completion of the scope of work as per technical specification, **the contractor shall execute additional quantities of**

**these items for which no additional payment shall be made over and above lump-sum contract price**

- 1.2.12.3.3 In case quantities of these items supplied at site are in excess of requirement for successful completion of scope of work, such additional quantities shall be property of the contractor and they shall be allowed to take back the same from the site for which no deduction from the lump sum contract price shall be made.
- 1.2.12.3.4 In case, actual requirement of quantities for successful completion of scope of work is less than the quantities identified in the approved BOQ/billing break-up and/or estimated by the tenderer./contractor, the lump-sum contract price shall remain unchanged and no deduction shall be made from the lump-sum price due to such reduction of quantities. It shall be the responsibility of the tenderer to pay all statutory taxes, duties and levies to the concerned authorities for such surplus material which would otherwise have been, lawfully payable. The tenderer shall submit an indemnity bond to keep JUSNL harmless from any liability before release of such material to the tenderer by JUSNL

**JHARKHAND URJA SANCHARAN NIGAM LTD., RANCHI**  
**VOLUME-I**  
**SECTION-I (B)**

**CONDITIONS OF TENDERING**

**1.2.13 PREPARATION OF TENDER :**

1.2.13.1 Before submission of the tender, the tenderers are requested to make themselves fully conversant with General Conditions of contract, site conditions, specifications, schedules, drawings and other relevant information's so that no ambiguity may arise in these respects subsequent to the submission of the tender.

The bidder are advised to attend pre-bid meeting and get the matter sorted out if any. If no issues are raised by the scheduled time of pre-bid meeting, it shall be taken granted that the NIT terms and conditions are fully acceptable to the bidder and no claim shall be entertained in this regard at any point of time. Quantity and schedule of items or work for civil, structural and architectural works required for successful completion of the project up to commissioning are to be assessed by the tenderer through site inspection and discussion with JUSNL's personnel.  
**No claim for extra payment for extra work on any account after submission of tender or award of contract shall be entertained by the JUSNL**

1.2.13.2 Tenders must be submitted on the attached prescribed forms and/or copies thereof. The schedule shall be filled in, item wise in accordance with the instructions and notes supplementary thereof.

1.2.13.3 The tenderers should quote prices as mentioned in the specifications.

1.2.13.4 The tenders shall be submitted in two separate sealed covers. Cover-I shall include all technical information alongwith commercial terms and conditions, unpriced price schedule as well as different schedules with quantities duly filled up. Cover –II shall include price part.

**1.2.13.5 THE TENDERER SHALL FILL UP THE SCHEDULE :**

- i) The schedule of prices and delivery/erection schedule shall supplement the tender.
- ii) Information to be supplied by the Tenderer to supplement his tender.
- iii) Deviation sheets for any deviations, made either in the provisions of the general conditions of the specifications or technical specifications.
- iv) All other information's asked for in the specifications.

The tenderer shall submit his tender strictly in accordance with the tender specifications and terms and conditions laid down in the tender document.

1.2.13.6 Each tenderer must submit his tender together with the schedule duly filled in by ink or by typing, with the rate and amount (both in figures and words) of the prices and giving all the information's and particulars asked for in the schedule.

1.2.13.7 By the act of submitting a tender for the work, a tenderer will be deemed to have satisfied himself by actual inspection of the site and locality, of the work if so required, and that the rates quoted by him in the tender will be adequate to complete the work in all respects according to the specifications and other conditions and that he has taken into account all conditions and constraints that may be encountered during its progress whether or not expressly provided in the tender document but necessary for the completion of this work to the entire satisfaction of the JUSNL

1.2.13.8 Canvassing in any form is strictly prohibited and tenderer found to have re-ported to canvassing shall be liable to have his tender rejected summarily.

1.2.13.9 If the tenderer furnishes wrong information in his tender to create circumstances for the acceptance of his tender, the purchaser reserves the right to reject such tender.

- 1.2.13.10 Not more than one tender for a work shall be submitted by one tenderer or one Firm of contractors or one incorporated company.
- 1.2.13.11 No member of the Joint Venture is eligible to quote separately or to associate with other Joint Venture.
- 1.2.13.12 Tender documents submitted by a tenderer, shall become the property of the purchaser and the purchaser shall have no obligation to return the same to the Tenderer.
- 1.2.13.13 The purchaser shall not be liable for any expense incurred by the Tenderer in the preparation of tender whether his/her tender is accepted or not.
- 1.2.13.14 Along with the Techno-commercial part i.e. Part-I of the tender, the tenderer shall furnish an affidavit confirming that the details and documents furnished along with the tender are true copies of the originals.

### **1.2.13 SUBMISSION OF TENDER**

- 1.2.14.1 The Tender Bid shall be submitted in two copies. Each copy of the Tender shall contain two sealed envelopes. One sealed envelope shall contain “PREQUALIFICATION BID” (Packet A) having all the details as mentioned in clause 3 (c). THE SCHEDULE OF PRICES SHALL NOT BE INCLUDED IN THIS COVER, OTHERWISE TENDER SHALL BE REJECTED. Earnest money shall also be furnished in this envelop.
- 1.2.14.2 This envelop shall be clearly super scribed with “PREQUALIFICATION BID” (Packet A) along with tender no. & its description.
- 1.2.14.3 No alteration in the form of the tender will be permitted. All corrections/additions/alterations in the tender, must be attested by the Tenderer with his dated signature and official seal.
- 1.2.14.4 All pages of the tender papers, drawings and other accompanying documents shall be signed over official seal of the tenderer at the lower right hand corner with ink only and also similarly signed where required by the Tenderer or any person holding power of Attorney authorizing him to sign on behalf of the Tenderer before submission of the Tender.
- 1.2.14.5 Telegraphic Tenders will not be entertained.
- 1.2.14.6 The tender shall contain the name, address of residence and place of business of person or persons submitting the tender. All signatures shall be dated with official seal.

### **1.2.15 QUALIFICATION OF TENDERS :**

The conditions for participation and qualification of tenders shall be as per terms stipulated under this tender specification. The tenderers must furnish the proof of work experience presenting certified copies of letter of award with period and value of contract, completion and performance certificate etc. The tenders of only prima facie qualified tenderers shall be considered.

**Tenderers are requested to furnish only those documents which are specifically required and relevant as per the instant tender specification.**

**The documents should be clear especially about the prequalification requirements .**

### **1.2.16 VALIDITY OF TENDER :**

The tender submitted shall remain open for acceptance by the purchaser for a period of 180 days from the date, the Technical & Commercial parts of tenders are opened during which period the tenderer shall not withdraw his offer or amend, impair or derogate there from.

### **1.2.17 TENDERING :**

- 1.2.17.1 Tendered prices in the "schedule of prices" and where ever they appear in the Tender shall be written both in words and figures. In case of any discrepancy between unit prices and amount, the unit price will govern. In any discrepancy between words and figures words shall prevail. The prices shall be quoted in Indian Rupee.
- 1.2.17.2 In the "Schedule of Prices " and also wherever price appear, no erasing and/or over writing shall be made. Every correction shall be made by crossing the pen across the incorrect or un-required portion. Any correction shall bear the dated signature of the tenderer with official seal. No alteration or modification shall be made in the various schedules and enclosures which form part of the contract. Any tender that is not accompanied by the date and information specified herein or that does not include rates for all the items, shall be considered incomplete and is liable for rejection.
- 1.2.17.3 The tenderer may state in the letter forwarding the tender, any point he may wish but the purchaser reserves the right to reject the same or the tender itself if the same becomes a conditional tender thereby.
- 1.2.17.4 The purchaser reserves the right to award this contract on the basis of unit price of items to be supplied/erected and also for a lump sump price.
- 1.2.17.5 The tenderers, whose tender has been accepted and so notified shall become the "Successful Tenderer".
- 1.2.17.6 F.O.R. destination prices including all duties & taxes, octroi etc. and insurances should be quoted as per enclosed schedule. While quoting prices, following conditions must be taken care of :
- i) F.O.R. destination prices should be quoted as per enclosed schedule.
  - ii) Prices quoted for each activity for erection, testing & commissioning should include supply wherever necessary of all materials required for erection purpose including transport to sites, packing, unpacking, storing at site. All labours, erection materials for electrical, civil foundation, structural and architectural work for installation, supervision, inspection, testing and commissioning costs should be covered in prices quoted under the column "Erection and commissioning". This should include the charges/expenses to be incurred on testing commissioning of the entire system. This price also includes all risks, liabilities, contingencies, insurance and obligations imposed or implied by the Contractor and payment of taxes/duties.
  - iii) The tenders shall be submitted exactly in the format on the schedules endorsed with all items there included and priced clearly. No items shall be deleted or left blank. Any item of the tender which is not priced shall be deemed to have been included in price of other items.
  - iv) **Tenderer should take proper action for assessing the actual financial involvement of all items of work specially for Civil, structural and architectural work associated with each and every schedule of items of work for installation, erection, commissioning etc. for fixing the prices for individual activities of erection, commissioning etc.**

**This shall include all works covered in the scope of work. The tenderer may furnish prices of any other item which may be necessary to complete the work as mentioned in the scope of work but not mentioned in the price schedule.**

The Schedule of items for civil structure & architectural work are given but the actual quantities are to be assessed by the tenderer before finalisation of the L.S. price for each and every items of work. The details for arriving the said L.S. prices are to be submitted by the Tenderer separately.

- v) Tenderer shall offer prices in schedules for supply of specified essential spares.
- vi) Prices for optional items of purchaser's requirement wherever called for in relevant schedules shall be indicated separately and not included in total price of the concerned activity schedule. Purchaser reserves the right to adopt these options as alternative to corresponding items, during evaluation and order placement.
- vii) It is deemed that the tenderer has understood the site conditions, environment, transport facilities, involvement of civil, Structural and architectural work etc., while preparing the price Schedule and has adequately provided for them in their quoted prices.

**No claim of extra compensation will be payable for items and situations not foreseen and not incorporated by him in the schedules.**

- viii) **There shall be no price variation due to any changes or variation in custom duty or import duty, raw materials labour index, etc.**

1.2.17.7 All modvat benefits should be extended to JUSNL account.

**1.2.18 AWARD OF CONTRACT :**

The acceptance of a tender and awards of contract to one or more than one tenderer, if considered necessary, rests with the purchaser. It shall not be obligatory on the part of the purchaser to accept the lowest or otherwise, in whole or in part and to reject any or all the tenders received, without assigning any reason, and no explanation can be demanded of him by any tenderer in respect thereto.

**1.2.19 TIME OF COMPLETION OF WORK :**

This shall be strictly as per clause 1.2.6 of this tender i.e. **18 (Eighteen) Calendar months** from the date of issue of Letter of Intent.

**1.2.20 SALES TAX CLEARANCE CERTIFICATES :**

The tenderer shall enclose an attested copy of up-to-date sales tax clearance certification or relevant documents not more than six months old from the date of opening of tender i.e the part-I of the tender. State & Central Sales Tax registration no. of the tenderer should also be stated in the tender. However, this shall be as per the latest practice being adopted.

**1.2.21 ALLIANCES**

The tenderer may arrange alliances/JV with qualified partners as specified in the specification under relevant clauses and should furnish paper conforming alliances in the tenders. **The tenderer should furnish the copy of agreement of association on stamp paper.**

**1.2.22 DISCOUNTS / REBATES**

All discounts / rebates, if any, should be furnished along with main price schedule containing original price schedule. No such discounts, rebates etc should be furnished in separate envelopes. Such attempt of tenderers may lead to outright rejection of their offers.

- 1.2.22.1 All discounts and rebates shall be given in the original price part only. Any discount or rebate given after submission of original offer or in a separate envelope shall not be considered during evaluation of the tenderer's position with respect to their prices. However, if the tenderer is considered lowest without considering above separate rebates or discounts, then order will be placed at the reduced or discounted rates.

**JHARKHAND URJA SANCHARAN NIGAM LTD.**  
**VOLUME-I**  
**SECTION-I (C)**

**General Conditions of contract**

General Conditions of Contract for detailed Engineering, Manufacture, Supply Delivery, Erection, Testing & Commissioning etc. of all equipments and materials for construction of 220/132/33 KV Grid Substation, IN JAINAMORE (BOKARO) (new).

**1.3.1 APPLICATION :**

Unless otherwise provided in the Contract Agreement, these General Conditions of Contract shall govern the work of the annexed Specifications and form part of the contract.

**1.3.2 DEFINITION OF TERMS :**

In constructing these General Conditions and the annexed Specifications the following words shall have the meanings herein assigned to them unless there is something in the subject inconsistent with such construct :

JUSNL "Purchaser"/"Owner" shall mean JHARKHAND URJA SANCHARAN NIGAM LTD. , a successor company of erstwhile JSEB whose Registered Office is situated at Engineering Building, HEC, Dhurwa, Ranchi – 834004, Jharkhand, India and shall include its successor in office and permitted assignees.

JUVNL shall mean Jharkhand Urja Vikas Nigam Ltd., Ranchi whose registered Office is situated at Engineering Building, HEC, Dhurwa, Ranchi – 834004, Jharkhand, India and shall include its successor in office and permitted assignees.

Chief Engineer (Transmission) shall be considered competent authority to grant approvals etc on behalf of the Board.

The "Contractor "/"tenderer"/"successful tenderer" shall mean person, or a company firm or an incorporated company whose tender has been accepted by the Purchaser and shall include his/its heirs, executors, administrators, representatives and assignees.

The "Engineer " shall mean an Officer of the Purchaser as may be only appointed and authorised in writing by the Purchaser to act as the Engineer on its behalf for the purpose of the Contract.

The 'Inspector' shall mean any firm or person or a company duly appointed and authorised in writing by the Purchaser to inspect plant, equipment and works included in the Contract.

" Plant ""Equipment", " Work" or " Works" shall mean and include tools, plant, machines, stores and materials of all kinds to be provided and work to be done and services to be rendered by the Contractor.

The "contract" shall mean and include the various terms and conditions contained in the tender specifications, the tenderer's offer against such specifications and the results arrived at during subsequent deliberations as mutually agreed upon and embodied in the LOI/Order/Agreement and also all amendments/ additions thereof.

The word 'Site' shall mean the site of proposed work as detailed in the specification or any other place where the work is to be executed under the contract.

"Tests on completion" shall mean such tests as are prescribed in the Specification, JUSNL's Standards, I.E. rules, I.S.S. etc. and/or tests mutually agreed upon by the Purchaser and the Specification. Performance guarantees of the plant and equipment shall mean the guarantees given by the Contractor before taking over of the plant and equipment by the Purchaser.

"Acceptance Tests" shall mean such Tests as are required to prove the performance guarantees of the plant given by the Contractor before taking over of the Plant by the Purchaser.

"Commissioning" shall mean the first successful operation of the equipments as per specifications after all initial adjustments, trials, cleaning as reasonable required at site, if any, have been completed.

"Initial Operation" or "Reliability Run" shall mean operation of the contract plant and materials on load to prove satisfactory operation for specified period, which shall not be less than two weeks after commissioning of complete transmission line.

"Commercial use" shall mean that standard of service efficiency and performance, the equipments are required to attain as contemplated in the specification/contract.

"Guarantee period" shall mean the period of guarantee as explained under clause "Guarantee" or these General conditions.

"Month" shall mean calendar month.

"Letter of Intent" shall mean the Purchaser's letter conveying his acceptance of the Tender subject to such reservations as may be stated therein.

"Erection Supervision" mean the Supervision services rendered or exercised by the Contractor during the erection of the Plant and equipment as explained under clause "Erection Supervision Service" of these General Conditions.

"Writing" shall include any manuscript, typewritten or printed statement under or over dated signature with seal as the case may be.

"Approved" shall mean as approved by the Purchaser.

"F.O.R. Destination Price" shall mean delivery free of expenses to the Purchaser, inclusive of insurance charge, taxes, duties, entry tax etc. at the works site stores including unloading and proper stacking.

"Tonner" shall mean 1000 kilogram Weight. " Gallons" shall mean imperial gallons, unless mentioned specifically.

"SAS" shall mean complete sub-station automation system with all accessories, equipments, software etc.

### **1.3.3 CONTRACTOR TO INFORM HIMSELF FULLY**

The contractor shall be deemed to have carefully examined the General conditions, supplemental conditions, specifications, schedules and drawings and also to have satisfied himself as in the nature and character of the work to be executed and, where necessary of the site conditions and other relevant matters and details. Any information thus obtained from the Purchaser, the Consulting Engineer or the Inspector shall not in any way relieve the Contractor from his responsibility for supplying the equipment and executing the work in terms of the specification including all details and incidental works and supply of all accessories or apparatus which might not have been specifically mentioned in the specification or drawings, but otherwise necessary for ensuring complete erection and safe and efficient commercial working of the equipment.

### **1.3.4 DESIGN REQUIREMENT :**

A) All equipment and materials shall be designed and manufactured in conformity with Standards stated hereinafter. All provisions of Indian electricity Rules, concerned I.S., JUSNL's standard practices have to be complied with.

#### **B) WIND LOAD :**

Structure and outdoor equipment shall be designed to withstand a wind load as set forth in the latest revision of IS:875.



C) **EARTHQUAKE :**

The equipment shall be designed to resist lateral inertial forces developed in each corresponding mass centre due to seismic ground motion. The structural parts and their anchorages shall be designed to withstand earthquake range of the Zone.

D) **SAFETY FEATURES :**

The Contractor shall provide adequate guards for the equipment to prevent all sorts of hazard and to safeguard personnel and property.

All Safety devices shall be in accordance with the applicability of the Government regulations and statutory requirements in force.

E) **MEASUREMENT SYSTEM :**

All instrument/recorders etc. will be calibrated in the metric (C.G.S./MKS) system of units. In drawings or specifications wherever both Metric and British units are indicated, the contractor shall indicate the equipment dimension in both the units. Location Marking of all equipments shall be in C.G.S. (Metric) units.

F) **ACCESSIBILITY :**

Special attention shall be given to the design, arrangement and assembly of all equipment to ensure ease of maintenance and renewal of parts.

G) **STANDARD EQUIPMENT & MATERIALS AND ALTERNATES :**

i) Equipment, material and erection supervision and other services shall be complete in all respects and in strict accordance with the specification, except that alternative proposals may be submitted where stipulated provisions depart from the Contractor's standards, provided that the substitutions are approved as equivalent by the JUSNL and the reasons therefore are stated by the Contractor in his proposal together with the amount of money to be added or deducted in the proposal as a result of such substitutions.

ii) Any request for substitution after the contract is awarded, shall be accompanied with the difference in price and such substitution does not cause any addition to the contract price.

H) i) All work shall comply in all respects with the requirements of the latest edition of the relevant Indian Standards, International Electro Technical Commission (IEC) Standards, Central Board of irrigation and Power or any other equivalent better Standards and JUSNL Standard practices.

ii) Where conflicts occur between any of the laws, rules, regulations, standards, and so-forth, specified herein, the more stringent requirements shall govern the work.

**1.3.5 DUTIES AND TAXES**

1.3.5.1 All statutory taxes such as sales tax, T.O.T. Excise Duty etc. will be payable (which shall be included in quoted rates) as per the existing provisions of JUSNL & as applicable subject to submission of relevant papers and documentary evidence of the payment of duties and taxes and on actual basis. **The quoted price shall not include entry tax. Entry tax, if applicable shall be paid by JUSNL separately.**

1.3.5.2 Excise Duties, Sales taxes and other levies payable by the tenderers/bidders/contractors in respect of the transactions between the tenderers/bidders/contractors and their sub-suppliers/vendors for procurement of any equipment, parts,/components, sub-assemblies, raw materials etc. shall be included in the bid prices and no claim on this account shall be entertained by the Board.

1.3.5.3 However, Excise Duties, Sales tax, local taxes and other levies against the transaction between JUSNL and the bidder/tenderer/contractor under the contract, if any, shall not

be included in the tender price but they should be indicated separately, wherever applicable, in the price schedule.

- 1.3.5.4 Wherever applicable, the Modvat benefits should be extended to the Board.
- 1.3.5.5 The tenderer shall be responsible for payment of Income Tax, Surcharge on Income tax, corporate taxes etc. to the concerned authorities.
- 1.3.5.6 The tenderer shall furnish details in their price part about amount of excise duty, Sales tax, freight and insurance charges etc under separate head.
- 1.3.5.7 Statutory deductions such as Income tax and other taxes in accordance with the provisions of Income tax Act/other taxation laws as applicable from time to time shall be made from the contractors bill by the Board.
- 1.3.5.8 However, Concessional Sales tax declaration forms, as admissible, would be issued by JUSNL to the contractor, for all such items on request of the tenderer/contractor, for all such items, equipments and materials, as identified in the price schedules to be supplied directly by the contractor as well as for the items to be supplied by the sub suppliers as "Sale in Transit".
- 1.3.5.9 The tenderer/bidder shall include the Sales tax on work contract, turn over tax or any other similar taxes under the Sales tax Act, as applicable in their quoted price and JUSNL would not bear any liability on this account. JUSNL shall however, deduct such taxes at sources as per the rules and issue TDS certificate to the contractor as and where applicable.
- 1.3.5.10 For the transactions solely between JUSNL and the contractor (for the dispatches made from the contractor's works under the supply contract) Sales tax, Excise Duties, local taxes and other levies shall be reimbursed/paid by JUSNL at the applicable rate at the time of dispatch, scheduled or actual, whichever is lower. However, in case of advancement of supplies solely at the request of, JUSNL taxes and duties prevailing at the time of dispatch shall be payable by JUSNL
- 1.3.5.11 As regards payment or reimbursement of Duty & Sales tax in respect of dispatches made directly from the contractors works, the contractor will necessarily be required to produce a certificate from the jurisdictional central excise officer regarding proof of payment of duty on the bills/invoices under which the contractor has supplied the goods to. JUSNL Except incase of amendment in rates by the appropriate authority in the existing provisions of the Central Excise duty, Sales tax etc., payment at higher rates of excise duty Sales tax etc. will not be considered in any circumstance.
- 1.3.5.12 As such, documents regarding payment of duties and taxes for the transactions between the JUSNL and tenderer/contractor for the items manufactured by the contractors/tender itself shall be required to be furnished by them. However, these documents will not be required for bought out items.

**1.3.6 SECURITY DEPOSIT / CONTRACT PERFORMANCE GUARANTEE :**

An amount of 10% (ten percent) of total contract value will have to be deposited by the successful tenderers to guarantee faithful performance of the contract in accordance with the terms and conditions specified in tender specifications in the following manner. :-

- 1.3.6.1 Bank guarantee of the amount equivalent to 5% (five percent) of the total contract value shall be deposited after receipt of L.O.I. and before the execution of the agreement.
- 1.3.6.2 The balance amount of 5% (five percent) will be deducted from the running account bills of the contractor.
- 1.3.6.3 Alternatively, the contractor /tenderer may furnish one single Bank guarantee of the 10% of the total contract value as contract performance guarantee.

- 1.3.6.4 The amount of security money so deposited shall be refunded after successful completion of the work and taking over of the projects/grid sub-station by JUSNL. However, a Bank Guarantee equivalent to the amount of 5% (five percent) will have to be furnished as performance guarantee after the work is fully completed which will be refunded after successful operation of the project for a period of 12 months from the date of taking over.
- 1.3.6.5 The Bank guarantee shall be in the approved format of JUSNL
- 1.3.6.6 The Bank Guarantee shall be issued from a Nationalised Indian Bank / Scheduled Bank as detailed under specification only and shall become acceptable to JUSNL only after verification by a competent official of JUSNL
- 1.3.6.7 No Bank charges or interest shall be payable against the above Bank Guarantees.
- 1.3.6.8 Bank Guarantee of 5% (five percent) furnished against security deposit may be considered to be converted as performance guarantee on the request of the contractor.
- 1.3.6.9 The Bank Guarantee shall be valid up to 180 days after end of the guarantee period.

### **1.3.7 PERFORMANCE GUARANTEE :**

To ensure satisfactory performance of the works executed against this tender, the contractor shall, after the work is fully completed, furnish Bank Guarantee of the amount of (Five percent) 5% of the value of the order. This guarantee shall be issued by a Nationalised Indian Bank / scheduled bank as detailed under specification only and made payable to the Account Officer, JUSNL, Ranchi, and its terms and conditions shall be provided in the Bank Guarantee form attached. The performance guarantee shall be furnished immediately after the work is fully completed on non-judicial stamp paper of Rs. 100/- (one hundred) only. Delay in submission of Performance Guarantee shall entail delay in return of his 5% (Five percent) B.G. submitted against terms of contract guarantee.

The performance guarantee shall cover the following guarantee to JUSNL

The contractor shall warrant successful and satisfactory operation of the grid sub-station with all equipments constructed under the contract, under the condition and for the service specified. He shall further warrant the sub-station with all equipments as represented and specified against any and all defects in design, materials and workmanship and shall upon written notice by the JHARKHAND URJA SANCHARAN NIGAM LTD., Ranchi fully rectify, free of expense to JUSNL, such defects as developed under the normal use to the said equipment within one year of service from the date of taking over.

On due performance and execution of the order in all respects the B.G. will be returned to the contractor without any interest and on presentation of "No demand Certificate".

### **1.3.8 PAYMENT TERMS :**

#### **1.3.8.1 FOR SUPPLY OF EQUIPMENT/ MATERIALS:.**

1.3.8.1.1 **5% of the value for supply items** will be paid as **mobilization advance** after the effective date of Contract on submission of a Bank Guarantee for equal amount in JUSNL's enclosed proforma from any nationalized Bank of India. **This advance will be carry 13% interest p.a.**

- i) Acceptance of letter of Intent.
- ii) Submission of an irrevocable Bank Guarantee issued by any Indian Nationalised Bank / Schedule Banks as detailed under specification only covering the advance amount which shall be kept valid till 180 days (six month )after schedule date for successful completion of commissioning.

- iii) Submission of Bank Guarantee towards security Deposit/Contracts performance Guarantee valid up to 180 days (six month) after the end of the warranty period.
- 1.3.8.1.2 Submission of a detailed PERT NETWORK/BAR CHART based on the work schedule stipulated in the letter of Intent within 15 days of issue of the L.O.I. and its approval by the Chief Engineer (Transmission) on behalf of JUSNL .
- 1.3.8.1.3 **80% of the Contract value on pro-rata basis** payment shall be made (after proportionate) deduction of 5% advance and 5% on pro-rata basis Security Deposit from the running bills of the supplier against receipt of materials at site, joint verification, verification of invoice and counter signature by the concerned Electrical Superintending Engineer.
- 1.3.8.1.4 **10% of the contract value for supply portion** on erection, testing & commissioning of the equipment/ materials.
- 1.3.8.1.5 **5% of the Contract value for supply portion** after issue of Provisional Acceptance Certificate by the Purchaser and **5% of the contract value will be paid after submission of Bank Guarantee** which will be valid **upto 02 (two) months** beyond completion and taking over of the project.  
Such retention amount may be released on request of the contractor against submission of equivalent BG which will be valid upto 02(two) months beyond completion and taking over of the project.
- 1.3.8.2 **ERECTION & COMMISSIONING, CIVIL WORKS ETC :**  
This work includes foundation and erection testing & commissioning of materials/equipments etc., civil works etc.  
The payment shall be made in the following manner:
  - 1.3.8.2.1 **10% of the Contract value for erection portion as mobilization advance** after the effective date of Contract on submission of a Bank Guarantee for equal amount in JUSNL's enclosed proforma from nationalized Bank. This advance will carry 13% interest p.a. and will be paid after establishment of site office, unconditional acceptance of LOI and submission of security deposit.
  - 1.3.8.2.2 **85% (Eighty five percent) payment** (after proportionate deduction of 10% advance) and 5% (five percent security deposit) of the value of the work completed will be made on Pro-rata basis after submission of the running account bills and duly countersigned by the competent authority.
  - 1.3.8.2.3 **10% of the contract price for erection portion** on successful erection, testing & commissioning of the equipment/ installation.
  - 1.3.8.2.4 **5% of the Contract value for erection portion** after successful completion, testing and commissioning of the project duly certified by the purchaser and issue of Provisional Acceptance Certificate by the Purchaser against submission of Bank Guarantee which will be valid **upto 02 (two) months** beyond completion and taking over of the project.
- 1.3.8.3 Payment to be made after submission of following documents also.
  - (a) Copy of excise gate pass along with certificate of payment from excise department /or documentary evidence regarding payment of excise duties, sales tax etc (**applicable only for directly supplied items and not for applicable for bought out items**), as applicable and other relevant papers to be demanded by JHARKHAND URJA SANCHARAN NIGAM LTD. against the transactions between JUSNL and the contractor.
  - (b) All invoice to be submitted in quadruplicate stating the particulars of the work executed against the appropriate schedule of quantities and unit prices. The Engineer on receipt of the same shall certify the invoice appropriately and forward the same to the paying authority for payment to the extent due under the terms of the contract after being passed and counter signed by the concerned Electrical Superintending Engineer.

1.3.8.4 The payment shall be made by Account Officer, JUSNL, Ranchi, or the other paying officer to be decided by JUSNL, on submission of verified, bills, counter signed by concerned ESE and all other papers as demanded by JUSNL as per prevalent rules.

### **1.3.9 PRICES**

1.3.9.1 Price for the complete scope of work as given in schedule should be quoted. The prices for each item as per price schedule should be furnished along with the tender. These prices shall be considered for the purpose of on account payments as well as for deductions on account of deletions.

1.3.9.2 Not understanding anything mentioned anywhere in this specification, the prices of all the material and works shall remain FIRM in all cases and no price variation on account of any equipment/material/supply and erection work as well as civil works shall be payable.

1.3.9.3 It should be clearly understood by the tenderers that offers furnished on

1.3.9.4 Variable price basis, shall be out rightly rejected without any clarification/correspondence. Therefore, the tenderers should furnish their offers on FIRM price basis only.

### **1.3.10 LIQUIDATED DAMAGES ,STAGE PENALTY AND INCENTIVE**

1.3.10.1 If the contractor fails to perform the works within the specified period given in the letter of Intent/work order with respect to successful completion of testing and commissioning of the sub-station the contractor shall pay to the owner as Liquidated damages, a sum equivalent to 1/2 % (half percent) of the undelivered and unexecuted portion of the materials and works for each WEEK of delay or part thereof, incompleteness of works and handing over to JUSNL However, the amount of liquidated damages for the contract shall be limited to a maximum of 10% (ten percent) of the total contract price for the package.

1.3.10.2 Equipments and materials shall be deemed to have been delivered only when all of its components, parts are also delivered. If certain components are not delivered in time, the equipments and materials will be considered as delayed until such time the missing parts are also delivered.

1.3.10.3 Stage /Interim Penalty shall be levied and recovered from the bill for delay/failure in adhering to the specified work completion scheduled, stage penalty shall be levied and recovered from the bills @0.1% on account of delay per week on the unexecuted item of the supply or erection/civil works subject to the condition that limit of all penalties for delay shall not exceed the limit of liquidated damage for delay. This shall be calculated on the basis of program given in Bar-Chart/Pert duly approved by the Chief Engineer (Transmission) as part of contract. The bidders are required to furnish Bar-Chart/Pert indicating Milestones with completion program for all activities covered in the "price schedule" for calculation of Stage/Milestone Penalty. The deducted amount towards stage penalty shall be released immediately if that unexecuted item is completed subsequently by the scheduled completion time of project. The delay beyond scheduled period of completion shall be covered under liquidated damage clause"

### **1.3.11 IMPORT LICENCE AND FOREIGN EXCHANGE :**

No foreign exchange or import licence will be provided to the contractor in connection with this contract.

### **1.3.12 CONTRACTOR'S DOCUMENTS, DRAWINGS AND INSTRUCTIONS MANUAL :**

The Contractor shall be responsible for developing detailed drawing for Grid Substation along with equipments and materials including bay extension at remote end to the requirement as indicated.

### **1.3.13 MISTAKES IN DRAWINGS :**

The Contractor shall be responsible for and shall pay for any alterations of the work due to any discrepancies, errors or omissions in the drawings or other particulars supplied by him whether such drawings or particulars have been approved by the JUSNL or not.

If any dimension figured upon a drawing or a plan differ from those obtained by scaling the drawing or plan, the dimensions as figured upon the original drawing or plan shall be taken as correct.

**1.3.14 MATERIALS AND WORKMANSHIP :**

All materials used in the manufacture of the equipment shall be selected from the best available for the purpose, considering strength, durability and best engineering practice. Liberal factors of safety shall be used throughout the design and specially in the design of all parts subject to alternating stresses or shocks.

All the works shall be performed and completed in thorough workmanship like manner and shall follow the best modern practice. Casting shall be free from blow holes, flaws, cracks or other defects and shall be smooth, close-grained and of true forms and dimensions.

No plugged or filled-up holes or other defects will ordinarily be allowed. Such castings are liable to be rejected.

However, the Contractor may rectify minor casting defects in accordance with the standard practice provided such rectification does not affect the strength of the casting or impair the efficient working of the foundation and prior approval of the Purchaser is obtained for the same.

**1.3.15 SPARE PARTS AND SPECIAL MAINTENANCE TOOLS:**

- a) The Contractor shall supply spares specified in relevant clause and recommended spare parts and one set of testing tools for equipment under the scope of specifications. The spare parts together with their price shall be listed as per attached schedules in different sections.
- b) In case of Plant/equipment the contractor shall include provision for such tools as he recommends to be absolutely essential for proper erection, maintenance and repair of the plant. A detailed list of the tools alongwith the item wise prices shall be submitted alongwith the tender. In the absence of this list the tender is liable to be rejected. One new set of all special maintenance tools for each type of equipment shall be furnished by the contractor and shall be dispatched alongwith the equipment.
- c) The Contractor shall also undertake the supplies of necessary maintenance equipment and spare parts will be made available during the life of the plant and equipment through his Agents on a continuous basis and at reasonable price.

**1.3.16 COMPLETENESS OF EQUIPMENT:**

The equipment shall be complete in every respect with all mounting, fixtures and standard accessories, which are normally supplied even though not specifically detailed in the specification. The Contractor shall not be eligible for any extra payment in respect of such mountings, fittings, fixtures, and accessories-which are needed for safe operation of the equipment as required by applicable codes of the country though these might not have been included in the contract/tender specification.

All similar components parts of similar equipments supplied shall be interchangeable with one another. The various equipment supplied under this contract shall be subject to the Purchaser's approval.

**1.3.17 INSPECTION AND TESTING AT CONTRACTOR'S PREMISES :**

JUSNL and his duly authorised representative, shall have at all reasonable times access to the Contractor's premises or works, and shall have the power at all reasonable times to inspect drawings of any portion of the work or examine the materials and workmanship of the plant during its manufacture there and if part of the plant & equipment is being manufactured on some other premises the Contractor shall obtain for JUSNL and for its duly authorised representative, permission to inspect as if the plant and equipment is manufactured on the Contractor's own premises. JUSNL shall on giving seven (7) days notice in writing to the Contractor setting out any grounds of objections which he may have in respect of the work, be at liberty to reject any drawings and all or any plant & equipment or workmanship, which in his opinion are not in accordance with the contract. The Contractor shall give due consideration to such objections and –shall either make the modifications that may be necessary to meet the said objections or shall confirm in writing to the JUSNL giving reasons therein that no modifications are necessary to comply with the contract.

The Contractor shall give JUSNL and his duly authorised representatives notice of any material being ready for testing, and the JUSNL or the said representative shall (unless the inspection of tests is voluntarily waived), on giving twenty-four (24) hours previous notice in writing to the contractor, attend at the Contractor's premises (as the case may be) within thirty (30) days of the date on which, the material is notified as being ready. All standard shop tests, Physical and Chemical tests required by the Standards or as may be prescribed or approved by JUSNL shall be conducted by the Contractor. JUSNL reserves the right to waive any of the above test requirements and to prescribe new test required if found necessary to expedite the work or to conform the latest and best practice.

Definitions, methods of measurement, calibration of instruments and required procedure as referred to in the Standard, specifications and/or those approved by the Engineer as equivalent shall be followed. The contractors shall forthwith forward to the Engineer duly certified copies six (6) nos. of the test certificates for approval. Further nine (9) copies of the shop test certificates shall be bound with the Instruction Manuals referred to in clause – " Contractor documents, drawing and instruction manuals".

In all cases where the contract provides for tests, whether at the premises or works of the Contractor or any sub-contractor, the Contractor, except where otherwise specified, shall provide free of charge to the Purchaser, such labour, materials, electricity, fuel, water, stores, apparatus and instruments as may reasonably be demanded to carry out efficiently such tests of the plant & equipment in accordance with the contract and shall give facilities to the Engineer or his authorised representative to accomplish such testing (For attending to any or every test at the Contractor's works, the purchaser shall bear the cost of to & fro travelling for each Engineer to the manufacturer's factory).

When the tests have been satisfactorily completed at the Contractor's/ sub-contractor's works, JUSNL shall issue a certificate to that effect within thirty (30) days after completion of tests, but if the tests were not witnessed by the Engineer or his representative, the such certificate would be issued within thirty (30) days of the receipt of the test certificates by JUSNL

No plant/equipment/material shall be transported before such a certificate has been issued. The satisfactory completion of these tests or the issue of this certificate, shall not bind the Purchaser to accept the plant & equipment/materials should it, on further tests after erection be found not complying with the contract provisions.

1.3.18 **TESTS ON COMPLETION AND COMMISSIONING AT SITE :**

1.3.18.1 All tests on equipments at works shall be carried out before dispatch as per technical specification & standards like I.E.C., Indian Electricity rule, I.S.S. etc.

1.3.18.2 All pre-commissioning test of all equipments and plants shall be carried out at site as per the specifications and standard, I.E.C. specifications, Indian Electricity rule I.E.C. etc.

1.3.18.3 Inspection and tests at site during erection and on completion of erection shall be carried out under supervision of contractor's engineer in presence of the JUSNL representative on any plant and/or equipments to satisfy the guaranteed performance of each equipment and the whole installation. Immediately after the plant & equipment is ready for commissioning, it shall be put on trial load for two weeks to furnish proof of satisfactory working and performance.

1.3.19 **TAKING OVER :**

When all performance tests & acceptance tests have been successfully carried out for the grid sub-station for satisfactory performance for the period of 2 weeks from the date of commissioning, the concerned Electrical Superintending Engineer shall issue an acceptance certificate and take over the complete project. Issue of taking over certificate shall not absolve the contractor of their /his/her contractual obligation of completing the work of grid sub-station for guaranteed operation and performance of the same as per the specifications.

1.3.20 **REJECTION OF DEFECTIVE PLANT AND EQUIPMENT :**

If the completed plant equipment or any portion thereof, before it is taken over under clause "Taking Over" be found defective or fails to fulfil the requirements of the Contract, the engineer shall give the Contractor notice setting forth particulars of such defects or failure and the Contractor shall forthwith make good the defective plant/equipment/material or alter the same to comply with the requirements of the contract at his cost. Should he fail to do so within a reasonable time, the Purchaser may reject and replace at the cost of the Contractor the whole or any portion of the plant/equipment/material as the case may be which is defective or fails to fulfil the requirements of the contract. Such replacement shall be carried out by the Purchaser within a reasonable time and at a reasonable price during the period and wherever possible to the same specifications and under competitive condition. The Contractor's full and extreme liability under this clause shall be satisfied by the payment to the Purchaser of the original contract price including charges for erection and/or supervision of erection plus the difference, if any, between the replacement price of the equipment including charges and/or supervision of erection and the original contract price including charges for erection and/or supervision of erection in respect of such defective plant/equipment/material within a reasonable time the contractor's full and extreme liability under this clause will be satisfied by the repayment of all money paid by the Purchaser to him in respect of such plant.

In the event of such rejection, the Purchaser shall have the right to operate any or all equipment as soon as and as long as it is in operating conditions, to enable him to obtain necessary replacement except that this shall not be construed to permit operation of any equipment which may become damaged by such operation before any required alterations or replacement has been made by the Contractor at such times as directed and in such manner as will cause the minimum interruption in the use of the equipment by the Purchaser. Nothing in this clause shall be deemed to deprive the Purchaser or affect any rights under the contract which he may otherwise have in respect of such defects or deficiencies or in any way relieve, the contractor of his obligations under the Contract.

1.3.21 **ENGINEER'S DECISION :**

In respect of all matters which are left to the decision of the Engineer, including the granting or withholding of certificate, the Engineer, shall, if so required to do so by the contractor, give in writing decision thereon.

1.3.22 **CERTIFICATES NOT TO AFFECT THE RIGHTS OF THE PURCHASER OR THE CONTRACTOR :**



No certificate of the Engineer nor any amount of payment made by the Purchaser nor any extension of time for the execution of the works by the contractor, shall affect or prejudice the right of the Purchaser against the Contractor or relieve the Contractor of his obligations for the due performance of the contract or be interpreted as approval of the work done or of the materials supplied and no certificate shall create liability on the Purchaser to pay for alterations, amendments, variations or additional work, not ordered in writing by the purchaser or discharge the liability of the Contractor for payment of damages, losses etc. nor shall any such certificate nor the acceptance by him of any sum paid on account or otherwise, affect or prejudice the rights or the contractor against the purchaser.

### 1.3.23 **GUARANTEE :**

The Contractor shall guarantee in respect of all plants/equipments and materials to be supplied by him and works done as following :

- a) All material/equipments shall be free from any defect due to faulty design, defective materials and/or workmanship,
- b) The equipments/materials shall operate satisfactorily and the performance and efficiencies of the several equipments shall not be less than the respective guaranteed particulars.
- c) The efficiencies, temperature rise and other performance data furnished for the equipment.
- d) Compliance of technical specifications of JUSNL

The guarantees have to be furnished on forms approved by the Purchaser and shall be signed by the Contractor. If the Contractor finds, after his tender is accepted, that a variation in work, construction technique or the quality of materials is necessary to fulfill the guarantees called for, such variations may be made with the approval of the purchaser, the changes are to be made with-out any increase in the contract price.

The above guarantees shall be valid for a period of twelve (12) calendar months after successful completion of commissioning of grid sub station. This period of the guarantee shall be called the "Guarantee period". During this period, the contractor's liability shall be limited to the replacement/repair of any defective parts that may develop in plant/ equipments of his own manufacture or those of his sub-contractor's under the conditions provided for the contract provided always that such defective/damaged part are not repairable at site, and are not essential for the commercial operation of the plant, are promptly returned to the contractor's works unless otherwise arranged. All such replacement/repairs of defective/damaged parts mentioned above shall be made free of cost at site by the contractor and the return of the defective parts to the contractor's works shall be the Contractor's responsibility and shall be made at his expense. The purchaser will however, render such assistance in this matter and will expedite the same. In the case of defective/damaged parts not repairable/replaceable at site but essential in the meantime for the commercial use of the plant/equipment, the contractor shall replace/repair at site free of cost to the purchaser, the said defective/damaged parts before the same are removed to his works.

If for rectification or replacement of any part of equipment or work due to defective materials, manufacture or design, the services of the contractor's personnel are requisitioned within the guarantee period, such services shall be made available free of any cost to the Purchaser.

It becomes necessary for the Contractor to replace or renew any defective portions of the plant/equipment under this clause, the provisions of this clause will apply to the portions of the plant & equipment so repaired, replaced or renewed until

the expiry of six (6) months from the date of such replacement, renewal, repaired or until the end of the above mentioned period of twelve (12) months, whichever may be later. If any defect be not remedied within a reasonable time, the Purchaser may undertake to do the work at the Contractor's risk and expenses but without prejudice to any other rights which the Purchaser may have against the Contractor in respect of such defects. Until the final certificate has been issued, the Contractor or his duly authorised representative shall have the right for inspection of all necessary parts at all reasonable working hours and for taking notes therefore and, if he desires at his own expenses making any tests, subject to the approval of the Engineer that will not be unreasonably, withheld.

After expiry of guarantee period, the liability of the contractor ceases, in respect of goods not covered by the first paragraph of this clause, the Purchaser shall be entitled to the benefit of any guarantee given to the contractor by the original supplier/manufacturer of such goods.

The contractor/bidder shall bear the cost of all modifications, additions or substitutions that may be considered necessary due to faulty material, design or workmanship for the satisfactory working of the equipments/plants, supplied or works done for smooth operation of the grid sub-station.

1.3.24 **NEGLIGENCE :**

If the contractor shall neglect to execute the work with due diligence and expedition or shall refuse or neglect to comply with any reasonable orders given to him in writing by the Engineer/ JUSNL in connection with the work, or shall contravene the provisions of the contract, the Purchaser may give notice in writing to the Contractor calling upon him to make good the failure, neglect or contravention complained of. Should the Contractor fail to comply with such notice within a period considered reasonable by the Purchaser from the date of service thereof, in the case of a failure, neglect or contravention, incapable of being made goods within that time, or otherwise within such time as may in the opinion of purchaser be reasonable necessary for making it good then and in such case the Purchaser shall have the option and be at liberty to take the work wholly or in part, out of the Contractor's hand and may carry on the work envisaged in the contract-either by himself or by his agents or may recontract at reasonable price with any other person or persons to execute the same or any part thereof and provide other materials, tools tackle or labour for the purpose of completing the works or any part thereof. In such event, the Purchaser shall without being responsible to the Contractor for fair wear and tear of the same, be entitled to seize and take possession and have free use of all materials, tools, tackles or other things which may be available at the site, for use at any time in connection with the work to the exclusion of any right of the Contractor over the same and the Purchaser shall be entitled to retain and apply the balance sum which may otherwise be the due on contract to Contractor or such part thereof as may be necessary, to the payment of the cost of execution of such work as aforesaid.

If the cost of executing the work as aforesaid shall exceed the balance due to the contractor and the Contractor fails to make good the deficit, the said materials, tools, tackles construction plant/equipment or other things, the property of the Contractor as may not have been used up in the completion of the works, may be sold by the Purchaser and the sales proceeds of such sale shall be paid by the Contractor on the certificate of the Engineer, but when all expenses, costs and charges incurred in the completion of the work are paid by the contractor all such materials, tools, tackles, construction plant or other things not used up in the completion of the work and remaining unsold shall be removed by the Contractor.

1.3.25 **POWER TO VARY OR OMIT WORK**

No alterations, under the contract shall be made by the contractor except as directed in writing by the Purchaser, but the purchaser shall have full power subject to the provision hereinafter contained from time to time during the execution of the contract by notice in writing, to instruct the Contractor to make such variation without prejudice to the contract and the contractor shall carry out such variations and be bound by the same conditions as far as applicable, as though the same variation occurred in the contract.

If any suggested variations would, in the opinion of the contractor, if carried out, prevent him from fulfilling any of his obligations, or guarantees under the contract, he shall notify the Purchaser thereof in writing and the Purchaser shall decide forthwith whether or not the same shall be carried out and if the Purchaser confirms his instructions, the Contractor's obligations and guarantees shall be modified to such an extent as may be justified.

1.3.26 **TERMINATION OF CONTRACT:**

1.3.26.1 At any time during the term of this contract the purchaser may terminate the contract due to change in policies of Government of India and/or the State Government for any other reason, by issuing notice to the contractor to that effect. In respect of such of the materials that is complete and ready for transportation within thirty (30) day after such notice, Purchaser may or may not agree to accept delivery thereof at the contract price and terms.

In the event of termination of contract as aforesaid, the purchaser shall have the absolute right to encash & appropriate all sums pledged by the contractor to the purchaser for the due fulfilment of the contract.

1.3.26.2 All costs, damage or expenses which the purchaser might have paid for which under the contract the contractor is liable, may be deducted by the purchaser from any money due or becoming due to the contractor under the contract, or may be recovered by action of law or otherwise from the contractor.

In the event of recovery to the necessary extent becoming impossible owing to insufficiency of the performance bond and amount withheld, the balance due to the purchaser, may be recovered in any way the purchaser may deem fit.

1.3.27 **DEDUCTION FROM CONTRACT PRICE :**

Deductions from the contract price shall be made for the items which are executed less than the quantity specified in tender/specifications/order.

1.3.28 **SUBLETTING OF CONTRACT :**

The contractor shall not without the consent in writing of the purchaser's sublet any substantial part of the contract other than for minor details, or for any part of the works of which the makers are named in the contract, provided that any such, content shall not relieve the contractor from any obligation, duty or responsibility under the contract.

1.3.29 **PATENT RIGHTS :**

The contractor shall be fully responsible for and wholly indemnify the purchaser for all cost, damages and losses caused to him for infringement of patent Rights of any other manufacturer in respect of materials, equipment, design etc manufactured or supplied by the contractor. The forgoing paragraphs state entire liability of the contractor for patent infringement.

1.3.30 **DEATH, BANKRUPTCY ETC..**

If the contractor shall die or dissolve or commit any act of Bankruptcy or being a Corporation to be wound up except for reconstruction purposes or carry on its business under a receiver, the executors, successors or other representatives in law of

the state of the contractor or any such receiver, liquidator, or any person in whom the contract may become vested, shall forth with give notice thereof in writing to the purchaser and shall for one month, during which he shall take all responsible steps to prevent stoppage of the work, have the option of carrying out the contract subject to his or their providing the value of works for the time being remaining unexecuted, provided however that nothing above said shall be deemed to relieve the contractor or his successors of his or their obligations under any circumstances. In the event of stoppage of the works, the period of the option under this clause shall be four teen (14) days only. Provided that, should the above option be not exercised, the contract may be terminated by the purchaser by notice in writing to the contractor, and the same power and provisions reserved to the purchaser in clause 'Negligence' in the event of taking workout of the contractor's hands shall immediately become operative.

1.3.31 **AGREEMENT :**

1.3.31.1 The successful tenderer(s) upon notice from JUSNL shall have to execute an agreement with JUSNL in contract agreement form appended with this specification, before issue of regular order. The agreement shall be submitted in three copies non-judicial stamp worth Rs. 100.00 (Rs. One Hundred) only. These documents/ agreements shall have to be prepared and produced by the tenderer free of cost.

1.3.31.2 The tenderer shall have to furnish the Bank Guarantee toward Security Deposit/Contract performance guarantee as detailed under clause 1.3.6 before execution of the agreement.

1.3.31.3 **SUBMISSION OF PERT NETWORK/BARCHART**

The contractor shall submit a detailed PERT Network/Barchart, within the time frame agreed consisting of adequate number of activities covering various key phases of the work such as design, procurement, manufacturing, shipment and field erection, testing & commissioning activities within 15 (fifteen) days of the date of issue of the Letter of Intent for approval of the Chief Engineer (Transmission) on behalf of JUSNL This network shall also indicate the interface facilities to be provided by the Board/owner and dates by which such facilities are needed. The network/ bar chart after approval of the Chief Engineer (Transmission) of JUSNL shall form part of the contract Agreement.

The finalization of the Networks/Bar charts shall be the precondition to release any advance payment to the contractor.

During the performance of the contract, if in the opinion of the Engineers, proper progress is not maintained, suitable changes will be made in the contractor's operations to ensure proper progress without any cost implications to JUSNL The interface facilities to be provided by JUSNL/ owner in accordance with the agreed network shall also be reviewed while reviewing the progress of the contractor.

The progress of work vis-à-vis Bar Chart shall be constantly reviewed and the delay would be counted for stage penalty (clause 1.3.10).

1.3.32 **CORRESPONDENCE :**

1.3.32.1 No correspondence shall be entertained with the tenderers after the opening of the price part of the tender nor any letters which imply any change in the equipment or in the price thereof shall be entertained after opening of the price part of the tender. Any approach from the Tenderer's representative or his agents trying to influence the decision of the tender officially or otherwise shall render the tender liable to be summarily rejected.

1.3.32.2 Queries which are raised from this office regarding materials offered should be replied within fifteen (15) days of the date despatch of such letters from this office failing which tenders will be finalised on the basis of information received alongwith the

tenders only. Hence, it will be in the interest of the tenderers to give complete technical particulars and to strictly adhere to the time schedule in sending replies.

1.3.32.3 Regarding tenders all correspondence shall be addressed to Chief Engineer (Trans.,) JUSNL, Engineering Building, HEC, Dhurwa, Ranchi-834004.

1.3.33 **COMPLIANCE WITH ACT.:**

All equipments and materials supplied and all works carried out shall comply in all respects with the requirement of the Indian Electricity Act 1910, Indian Electricity Rules, 1955 or any revision thereof which may be issued during the currency of the order and with the requirements of any other regulations and Act in India to which the purchaser may be subjected as well as JUSNL general specifications and practices.

1.3.34 **COMPLETENESS OF THE TENDER :**

Any fittings, accessories which might not have been in the specifications but which are usual or necessary in for equipment of similar nature are to be provided without extra cost. All equipments/materials etc. must be complete in all respects whether mentioned in the specification or not.

1.3.35 **INSURANCE :**

1.3.35.1 Insurance for all works, materials covered under this tender specifications shall be arranged by the contractor.

1.3.35.2 All the equipments and materials to be supplied by the contractor shall be kept completely insured by the contractor at their own cost from the time of despatch from the manufacturer's works upto the completion of erection, testing, commissioning at site and taking over of the sub-station by JUSNL in accordance with the contract.

1.3.35.3 All the materials equipments, installations etc. covered under the scope of this tender specifications shall be kept insured by the contractor against any loss, damage, pilferage, theft, fire etc. from the point of unloading upto the time of taking over by the JUSNL including handling, transportation, storage, erection, testing & commissioning etc. The premium shall be paid to the insurance Co. by the Contractor. The prices quoted by the contractor for supply & erection, shall include insurance charges, However details of insurance charges to be paid shall be furnished in a separate Schedule.

1.3.35.4 It will be the responsibility of the tenderer/contractor to lodge, pursue and settle all claims with the insurance company in case of any damage, loss, theft, pilferage, fire etc. and JUSNL will be kept informed about it. The tenderer/Contractor shall be responsible for the replacement of losses, damages etc. in the execution of the contract to any equipment/materials either supplied by them or received by them from JUSNL irrespective of the time of receipt of amount on insurance claim. Any loss on this shall be to the contractor's account. The contractor shall be totally responsible in regard to maintenance of all insurance cover.

1.3.35.5 Insurance of the employees & workers of the Contractor shall be arranged by the contractor as per labour law, wherever applicable.

1.3.36 **FIRE FIGHTING AND SAFETY EQUIPMENTS :**

During construction period all necessary equipments and materials for firefighting shall be arranged by the contractor at his own cost. The details of firefighting equipments & materials to be supplied against this tender specification shall be furnished in the tenders (Part-I) separately.

1.3.37 **JURISDICTION OF COURT :**

All disputes/claims/counter claims for and/or against JUSNL arising out of agreement/contracts/orders between JUSNL and the firms shall be subject to the exclusive jurisdiction of Civil Court, Ranchi only and **NO OTHER COURT OR ARBITRATOR.**

1.3.38 **NATURE OF THE CONTRACT :**

1.3.38.1 Notwithstanding anything stated elsewhere in the tender documents, this contract to be entered into will be treated as a divisible supply & Erection contract.

1.3.38.2 Order shall be placed on the successful tenderer as detailed below :

D) **CONTRACT FOR SUPPLY OF EQUIPMENTS AND MATERIALS :**

This shall cover for the Ex-works supply of all materials and equipments required for completion of the project.

II) **CONTRACT FOR SERVICES**

This shall cover for providing all other services e.g. inland transportation, insurance for delivery at site, unloading, storage handling at site, installation, including associated civil works, foundations, erection, stringing, testing and commissioning including performance testing of all the equipments supplied under the supply contract and any other services specified in the tender document.

1.3.38.3 Both these orders/contracts shall contain interlinking breach clause specifying that breach of one contract will constitute breach of the other contract.

1.3.38.4 The equipments shall be handed over to the contractor for execution/erection. The contractor shall at the time of taking delivery of the equipment/despatch documents will be required to execute on Indemnity Bond in favour of JUSNL in the form acceptable to JUSNL for keeping the equipment in safe custody and to utilise the same exclusively for the purposes of the said contract.

1.3.38.5 The contractor shall follow the Indian laws and the contract shall in all respects be construed and governed according to Indian laws.

1.3.38.6 The intent of the contracts has been divided into various parts only for convenience of payment of advance under the contracts and for the assessment of deviations or modification suggested/offered under the contracts/orders.

1.3.39 **ELIGIBILITY CRITERIA /QUALIFYING REQUIREMENT**

1. The Bidder should be a registered company under Company Act of India (Both firms in case of JV).
2. The Bidder should have valid EPF & ESI registration (Both firms in case of JV).
3. The Bidder should have valid Electrical License (Both firms in case of JV) and at least one supervisor with electrical license for the requisite voltage class issued/ recognized by any State Government of India for executing the electrical works. But it will be mandatory to get electrical license of Jharkhand before issuance of LOI in case electrical license from Jharkhand is not available. In this regard bidder should submit an affidavit.
4. **Joint Venture:** Joint venture is acceptable up to two firms only and both the firm should jointly qualify for the technical & commercial criteria.
  - i. The agreement of the consortium must be duly signed by CEO of their respective organization duly approved by their respective Board. The consortium agreement must clearly define lead partner of the consortium. It will also be required under the agreement that all the members of the consortium shall be jointly responsible for obligations arising out of this bidding and award of subsequent contract if awarded. The consortium agreement must be valid till expiry of the contract for which this bidding is being made.
  - ii. The bid needs to be signed by either all member of the consortium or the lead partner. If only lead partner signs the offer then power of attorney from each member for authorization is required and will accompany the bid.
5. The Bidder (anyone/ both in case of JV) should have experience of successfully completing Design, Engineering, Supply of Materials/ Equipments, Foundation, Erection,

Testing and Commissioning of 220 kV or higher voltage class Sub-Station in last 5 years from any state/ Transmission Utility.

6. The bidder (jointly in case of JV) should have financial capability to take up and execute the work successfully.
7. The net worth of the bidder (both firms in case of JV) during last three years should be positive.
8. The minimum average annual turnover during best three years out of last five financial years (2010-11 to 2014-15) should not be less than Rs. 20.00 Crores. The tenderer should submit audited balance sheet and Profit and Loss Account for last 5 years in the commercial part of the tender.
9. Tender without earnest money will be summarily rejected.

#### 1.3.42 **DOCUMENTS ESTABLISHING GOODS ELIGIBILITY AND CONFORMITY.**

1.3.42.1 The Tenderers are requested to furnish a compliance statement along with the technical bid. This statement shall indicate degree of compliance (Fully compliant, partially compliant or non compliant) to all clauses and sub clauses of both Technical specifications and General Terms and Conditions and a cross reference with relevant details to their bid shall also be given by tender.

1.3.42.2 The tenderer shall submit a level 1 (Summary) Critical Path Network and horizontal Bar Chart identifying all major activities, mile stones and time scales to enable him to meet the Time for Completion. This should take account of the programme given in this specification and the tenderer should highlight any difference between this and his proposed programme in his tender submission. The programme shall show the following for each major item of plant.

- a) Period during which the contractor will design the work/plant, prepare the drawings and submit for the Engineer's approval.
- b) Earliest date by which contractor requires access to the site or other designated areas.
- c) Dates on which erection will commence.
- d) Dates on which erection will be completed.
- e) Period for commissioning and acceptance test.

Electronic copy of the programme in two copies on CD's submitted must be provided, such as to allow data to be directly transferred in the Engineer's Schedule, produced on Microsoft Project Software.

The layout of the chart shall clearly indicate each item of plant forming the contract works. The chart shall be based on weekly intervals from the date of order placement Inter faces with other activities shall be clearly shown giving limiting start and stop dates and interruptions of work whilst other items are completed.

#### 1.3.43 **BASIS OF AWARD AND BID PRICE**

Bidder has to quote for the complete scope of work under the package as stated in the specification.

The bidder shall quote in appropriate schedule (Schedule A) of the tender specifications, the lump sum price for entire scope of works. The work will be

awarded on total price quoted in Schedule after evaluating comparative position of different bids taking Transformer's loss capitalization into account.

Also the unit rates of the goods it proposes to supply and the erection and construction works it proposed to take up shall be indicated in price schedule. The unit rate for civil works should be quoted to supplement the cost for civil works quoted in Schedule.

The summation of break up price indicated in Schedule should match with lump-sum price quoted in Schedule of tender specification. In case of mismatch, the quoted lump-sum price will prevail and the case of mismatch will be dealt in following manner:

**1.3.44 BASIS OF COMPARISON**

1.3.44.1 Bids shall be compared on the basis of lump sum prices (i.e. for supply portion and prices for services to be rendered as quoted by the bidder) for the entire scope of proposal as defined in the tender specification with all applicable taxes and duties on the transactions between the contractor and JUSNL and octroi duty on bought out finished items which are directly dispatched from sub- vendor's works to project site considering loss capitalisation of transformers into account.

The tenderers shall not include entry tax in their quoted prices. In case of unquoted items if any, the highest rate quoted by the bidder for that item shall be loaded for comparison of bids.

**1.3.45.1** The capitalization of transformer losses (for 2 no. of 150 MVA, 2 nos. of 50 MVA) shall be considered for comparison of bids and deciding the lowest bidder.

**1.3.45.2 THE PRICE SHALL INCLUDE:**

- i) F.O.R. destination (site) price.
- ii) Erection & commissioning price.
- iii) The prices of tools and plants as specified
- iv) The prices of spares as specified.

**1.3.46 TESTS ON COMPLETION AND COMMISSIONING AT SITE :**

1.3.46.1 All tests on equipments at works shall be carried out before dispatch as per technical specifications & standards like I.E.C., Indian Electricity rule, I.S. S. etc.

1.3.46.2 All pre-commissioning test of all equipments and plants shall be carried out at site as per the specifications and standard, I.E.C. specifications, Indian Electricity rule etc.

1.3.46.3 Inspection and tests at site during erection and on completion of erection shall be carried out under supervision of Contractors engineer in presence of the Board's representative on any plant and/or equipments to satisfy the guaranteed performance of each equipment and the whole installation. Immediately after the plant & equipment is ready for commissioning, it shall be put on trial load for two weeks to furnish proof of satisfactory working and performance.

1.3.46.4 The contractor shall give to the Engineer 21 days notice of the date after which he will be ready to make the Tests on completion (herein after called as the Tests) unless otherwise agreed, the tests shall take place within 14 days after the said date on such day or days as the Engineer shall notify the contractors.

1.3.46.5 If the tests are being unduly delayed by the contractor, the Engineer may by notice require the contractor to make the tests within 21 days after the receipt of such notice. The contractor shall make the Tests on such days within that period as the contractor may fix and of which he shall give notice to the Engineer.

If the Contractor fails to make the Tests within 21 days, the Engineer may himself proceed with the tests. All tests so made by the Engineer shall be at the risk and cost of the contractor and the cost there of shall be deducted from the contract price. The tests



shall then be deemed to have been made in the presence of the contractor and result of the tests shall be accepted as accurate.

- 1.3.46.6 If the works or any section fails to pass the tests, the Engineer or the contractor may require such tests to be repeated on the same terms and conditions. All costs to which the Employer may be put by the repetition of the tests under this sub clause or under other relevant clause shall be deducted from the contract price.
- 1.3.46.7 If the Engineer and the Contractor disagree on the interpretation of the test results, each shall give a statement of his views to the other within 14 days after such disagreement arises. The statement shall be accompanied by such evidence.
- 1.3.46.8 If the works on any section fails to pass the tests on the repetition there of under clause above, the Engineer, after due consultation with the Employer and the contractor, shall be entitled to
- a) Order one further repetition of the tests under the conditions of sub clause above or
  - b) Reject the works or section in which event the Employer/Purchaser shall have the same remedies against the contractor as are provided under sub clause regarding failure to remedy defects., OR
  - c) Issue a taking over certificate, if the Employer/Purchaser/JUSNL so wishes, notwithstanding the works are not complete. The Contract price shall then be reduced by such amount as may be agreed by the Employer and the Contractor or, failing agreement, as may be determined by arbitration.
- 1.3.46.9 As soon as the works or any section thereof has passed the tests, the Engineer shall issue a certificate to contractor and Employer to that effect.

#### 1.3.47 **FORCE MAJEURE**

1.3.47.1 Force majeure is here in defined as any cause which is beyond the control of the Contractor or the Owner as the case may be, which they could not foresee or with a reasonable amount of diligence could not have been foreseen and which substantially affects the performance of the contract, such as:

- i) Natural phenomena, including but not limited to floods, droughts, earth quakes and epidemics.
- ii) Acts of any Government, domestic or foreign, including but not limited to war, declared or undeclared, act of foreign enemies, priorities, guaranties, embargoes.
- iii) Ionizing radiation or contamination by radio-activity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosives or other hazardous properties of any explosive nuclear assembly or nuclear component thereof.
- iv) Rebellion, revolution, insurrection, military or usurped power and civil war,
- v) Riot, commotion or disorder, except where solely restricted to the employees of the contractor.

1.3.47.2 The contractor or owner shall not be liable for delays in performing his obligations resulting from any force majeure cause as referred to and/or defined above.

The date of completion will, subject to hereinafter provided, be extended by a reasonable time even though such cause may occur after contractor's performance of obligation has been delayed due to other causes.

1.3.47.3 If either party considers that any circumstances of force majeure have occurred which may affect the performance of his obligations he shall promptly notify the other party and the Engineer thereof.

#### 1.3.48 **CONTRACTOR'S DEFAULT**

- 1.3.48.1 If the contractor shall not be executing the works in accordance with the contract or neglect to execute the works with due diligence and expertise or shall refuse or neglect to comply with any reasonable order given to him by the Engineer in connection with works or shall contravene the provisions of the contract, the Owner/**JUSNL** may give notice in writing to the contractor to make good the failure, neglect or contravention complained of. Should the contractor fail to comply with the notice within 30(thirty) days from the date of serving the notice, then and in such case the Owner shall be at liberty to employ other workmen and forthwith execute such part of the works as the Contractor may have neglected to do or if the Owner shall think fit, without prejudice to any other right he may have under the Contract to take the work wholly or in part out of the Contractor's hands and recontract with any other person or persons to complete the works or any part there of and in that event the owner shall have free use of all contractor's equipment that may have been at the time on the site in connection with the works without being responsible to the Contractor for fair wear and tear there of and to the exclusion of any right of the Contractor over the same, and the Owner **JUSNL/** shall be entitled to retain and apply any balance which may otherwise be due on the contract by him to the contractor, or such part thereof, as may be necessary, to the payment of the cost of the executing the said part of the Works or of completing the Works as the case may be. If the cost of completing the works or executing a part there of as aforesaid shall exceed the balance due to the contractor, the Contractor shall pay such excess. Such payment of excess amount shall be independent of the liquidated damages for delay which the contractor shall have to pay if the completion of works is delayed.
- 1.3.48.2 In addition, such action by the owner as aforesaid shall not relieve the contractor of his liability to pay the liquidated damages for delay in completion of Works as defined in this specification.
- 1.3.48.3 Such action by the owner as aforesaid and/or the termination of contract under this clause shall not entitle the Contractor to reduce the value of the Security Deposit/ Contract Performance Guarantee nor the time thereof. The Contract Performance Guarantee shall be valid for the full value and for the full period of the Contract including guarantee period.
- 1.3.48.4 It shall be considered as contractor's default if the contractor.
- a) Assigns the contract or subcontracts the whole of the works without the Employer's written consent, or.
  - b) Becomes bankrupt or insolvent, has a receiving order made against him or compounds with creditors, or carries on business under a receiver, trustee or manager for the benefit for his creditors or goes into liquidation.
  - c) Is in breach of his obligations under the contract in respect of his obligations as per specification in such a manner as to cause the Employer to lose all trust in the contractor's ability to perform the contract to completion, the employer may, after having given 7 days notice to the contractor, terminate the contract and expel the contractor from the site.
- Any such expulsion and termination shall be without prejudice to any other rights or powers of the Employer, the Engineer or the contractor under the contract.
- 1.3.48.5 The Engineer shall, as soon as possible after such termination, certify the value of works and all sums then due to the contractor, if any, as at the date of termination in accordance with payment terms.
- 1.3.48.6 The Employer shall not be liable to make any further payments to the contractor until the works have been completed. When the works are so complete, the Employer shall be entitled to recover from the contractor the extra costs, if any, of completing the

works as per the contract . If there is no such extra cost, the Employer shall pay any balance due to the contractor.

- 1.3.48.7 If the Employer is unable to obtain Payment of extra costs from the contractor, the Employer shall be entitled (and is hereby authorised by the contractor) to sell any contractor's Equipment owned by the contractor or by any firm or corporation in which the contractor has a controlling interest and apply the net proceeds in or towards the satisfaction of such extra cost.

1.3.49 **TERMINATION OF CONTRACT ON OWNER'S INITIATIVE**

The Owner/ **JUSNL** reserves the right to terminate the contract either in part or in full due to the reasons other than those mentioned under clause of contractor's default. The Owner shall, in such an event give 15(fifteen) days notice in writing to the contractor of his decision to do so.

The contractor on receipt of such notice shall discontinue the work on the date and to the extent specified in the notice, make all reasonable efforts to obtain cancellation of all orders and contracts to the extent they are related to the work terminated and terms satisfactory to the Owner, stop all further sub-contracting or purchasing activity related to the work terminated, and assist the Owner in maintenance, protection and disposition of the works under the contract by the Owner.

1.3.50 **SAFETY PRECAUTIONS**

The contractor shall observe all applicable regulations regarding safety on the site. Unless otherwise agreed upon, the contractor shall from the commencement of work on site until taking over provide:

- a) Fencing, lighting, guarding and watching of the works.
- b) Temporary road ways, footways, guards and fences which may be necessary for the accommodation and protection of Owners and Occupiers of adjacent property, Public and others.

1.3.51 **COMPLIANCE WITH STATUES, REGULATION AND LAWS**

- 1.3.51.1 The contractor shall, in all matters arising in the performance of the contract, comply in all respects with, give all notices and pay all fees required by the provisions of any National or State statute, ordinance or other law or any regulation or bye-law of any duly constituted authority.

- 1.3.51.2 The contractor shall comply with the laws of the country of manufacture of the plant, and the laws of the country where the plant is to be erected so far as such laws concern the manufacture, erection and operation of the works.

1.3.52 **OBTAINING CLEARANCES, CONSENTS AND LICENCES**

The contractor shall be responsible for obtaining, with the agreement and assistance of the Engineer, all necessary clearance, consents, licenses and permissions. These shall be obtained in sufficient time to ensure that the construction and commissioning programme can be achieved within the time for completion.

1.3.53 **LIABILITY DUE TO LABOUR WAGES, LAWS ETC.**

In case, the employer becomes liable to pay any wages or dues to the labour or any Government Agency under any of the provisions of the Minimum wages act, Workmen compensation Act, Contract Labour Regulation Abolition Act or any other law due to act of omission and commission of the contractor, the Employer may make such and shall recover the same from the contractor's bills.

1.3.54 **MANNER OF EXECUTION**

All plants/materials to be supplied shall be manufactured and all works to be done shall be executed in the manner set out in the contract.

Where the manner of manufacture and erection is not set out in the contract the work shall be executed using the degree of skill, diligence and care which would be reasonably and ordinarily expected from a skilled and experienced National contractor or equipment manufacturer engaged in the same type of under taking under the same or similar circumstances.

In either case, all plants/ materials to be supplied shall be manufactured and all works to be done shall be executed to the satisfaction of the Engineer.

**1.3.55 MAKE List.**

As per the provisions made in section of Section III.

Guarantee of all equipments and materials will be obtained from the manufacturer and furnished to the purchaser.

**MANDATORY POINTS TO BE CONSIDERED BY TENDERERS WHILE FILLING UP  
PRICE SCHEDULE – I**

- (i) No material shall be supplied by the JUSNL
- (ii) Line isolators should be considered with Earth blades
- (iii) Isolators shall be double break/ tandem type as applicable.
- (iv) The Bus system is Main I & Main II and Transfer bus type for 220 KV transfer bus system for both system & Main and 132 KV & 33 KV system having adequate bus section arrangement conforming to CBIP standard layout scheme. **Moose conductor shall be supplied by the Contractor.**
- (v) Construction of approach road and road inside the grid switchyard area is covered under the scope of work.
- (vi) P.L.C.C. Systems have been proposed for 220 KV & 132 KV system DOUBLE CIRCUIT lines for communication.  
Carrier equipments shall be suitable for speech & protection as well as speech and data.
- (vii) The fire fighting system shall include pump system conforming to CBIP recommendation as well as portable fire extinguishers.
- (viii) All materials for Earthing of the switchyard with all necessary materials as per requirement of design according to IEEE 80/ Eq stds will have to be supplied and erected. The tenderer shall furnish design calculations for the same, which shall be approved by JUSNL and the work shall be completed accordingly.
- (ix) Double storey air conditioned Control Room is to be constructed as per specification. Approximate minimum size of control room has been furnished. However, the actual size will be based on the actual requirement to accommodate all equipments. The complete proposal based on the requirement as per design will have to be furnished by the tenderer with the bid. The air-conditioning of control Room and ventilation system is also included in the scope of work.
- (x) The substation automation system shall be housed in the control room. The control units shall be located in Relay and Control Panel with required interfacing and connectivity/networking. One separate and enclosed air-conditioned cubicles shall be made by glass separation inside the Control Room to house the Human Machine Interface(HMI), servers and other automation hardwares. The operation of GSS shall be controlled by the operator sitting in the cubicle. For details , section project may referred to in Vol-I & III
- (xi) Construction of new expanded metal fencing, Aluminium painting of the complete expanded metal fencing is included in the scope of work.
- (xii) Construction of complete water drainage system with drains, water sump, supply and installation of 5 HP dewatering pumps is included in the scope of work. Construction of new cable trenches as and where required included in the scope of work.
- (xiii) Soil investigation, land cleaning, land grading, land development, earth filling after contour mapping and anti weed treatment, provision of PCC and cement slurry as well as gravel / stone filling is included in the scope of work.
- (xiv) Overhead shielding of the Grid Sub-station has to be done.
- (xv) All interconnections required for charging the Grid substation is included in the scope of work.
- (xvi) Construction of boundary wall with barbed wire fencing has been excluded from scope of this tender. The same will be constructed separately. However, provision of main gate is covered in present scope.
- (xvii) Where the tender quantity is shown in LS or Set, the corresponding break quantity of that item is to be assessed by the bidder as indicated.

- (xviii) Not understanding anything mentioned anywhere in the tender specifications, the following specifications shall be considered and prevail for execution of the contract .
- (a) Control room shall be constructed on top floor, wherever applicable, railing shall be of Stainless Steel only.
  - (b) L.T Switchgears as well as AC & DC Distribution Board shall be provided with Copper bus bar only.
  - (c) Wherever applicable, semaphore indicators shall be LED type.
  - (d) Wherever applicable, the communication protocol shall comply to IEC 61850 only. Any other protocol mentioned in spec. e.g. IEC 870-5-103, IEC-103 etc stands modified.
  - (e) The bus bar protection shall be of low impedance type. The bus bar protection relay will be integrated type and will have 4 Zone protection.
  - (f) Time Synchronization equipment will have dual Ethernet with RJ45 port.
  - (g) Bus CVT in 220KV system shall be provided with Isolators.
  - (h) All CVT , PT & CT of 0.2 Class only are to be supplied.
  - (i) Breaker shall be of C2-M2 duty with Spring-Spring type mechanism.
  - (j) All LA's shall be of discharge Class-III only.
  - (k) 220KV Bus CVT shall be provided with Isolator.
  - (l) Indicating meters shall be of 0.2 s Class accuracy and Communication Type only.
  - (m) 0.2s class energy meter with maximum demand shall be provided for Sub-Station transformer on 0.4 KV Side.
  - (n) All drawings are for reference purpose only. The final design and drawing shall be prepared based upon the soil test report, Soil testing is to be done by the contractor and test reports duly verified by the work incharge, shall be furnished to this office as well as to CE(CIVIL).
  - (o) The Control Room is to be located on the 1<sup>st</sup> Floor. The floor of Control Room, Staircase and other places except Battery Room and Toilet shall be made of Granite slabs having thickness 20mm or above. Acid proof tile to be provided in Battery Room and Vitrified Tiles in Toilet.
  - (p) The price quoted for Substation Automation System to be indicated at Item Sl. No. "S" of P2 and "S" of P3 should be complete in all respects. Such rate shall be considered by JUSNL as unit reference rate for SAS System as a whole. JUSNL is at discretion, may use such rate for automating other operational or upcoming Grid Sub Station. all the roads in the switchyard will be concrete road.
  - (q) 100 mtr long 5.5 m wide road from property line to switchyard entry/fencing may be considered for tender purpose.

## **PRICE SCHEDULE**

1. The price schedule must be duly filled in and furnished in Part-II i.e. price part by the tenderer and submitted.
2. The tenderers shall furnish details about each and every item/materials/works for which prices have been quoted by them as in the price schedules. The above details shall cover specific description, quotation, Volume, scope of work etc. for the particular item/head.
3. Schedule for general civil works for sub-station has been provided. This has to be furnished for each and every material/equipments/work separately as well as total values for all the items shall be added and furnished in one sheet also. This schedule shall cover all construction works.
4. The schedules for completion of control room including separate cubicle (air-conditioned and glass panelled for control of substation SAS) is to be furnished separately. The materials schedule for control room, quantity of materials under each head, total volume of work, rate and total prices (final price) shall be furnished by the tenderer.
5. Design for electric wiring and lighting of control room and switchyard lighting shall be furnished along with prices for wiring. The schedule for the above work is provided in the tender specification. The tenderer may furnish details of any other item, which is not included in the schedule but which is essential for proper lighting in the switchyard & Control room as per CBIP recommendations.
6. Approach road may have to be constructed. The above road shall be suitable for transport of heavy equipments like 150 MVA transformers, 245 KV breakers etc.
7. No material for civil works for construction of sub-station shall be supplied by the purchaser.
8. The item wise details about the prices for supply i.e., Gantry Beam, Gantry Column, A-frame, Bus Support etc. shall be furnished by the tenderer. The bill of quantity shall be approved by the purchaser and drawings for each item will be furnished by the purchaser.
9. Items wise details of all hardware fittings, clamps & connectors necessary for sub-station shall be furnished by the tenderer along with details such as type, quantity, rate and total prices for supply & erection in a separate schedule.
10. Item wise details of all recommended spares for Operation & Maintenance of grid sub-station have been mentioned in the price schedule. For recommended spares other than the above, required for 5 years operation & Maintenance as per the recommendations of the manufacturer/ tenderer, the tenderer shall furnish the details in a separate schedule provided in the specification.
11. Details regarding type, rating, make special features of type offered for all tools and plants shall be furnished by the tenderer in separate schedule.
12. Details of suitable fire fighting equipments for fighting different type of fire hazards in grid sub-station as per CBIP recommendations should be furnished by the tenderer in a separate schedule. Different equipments their capacity, rating, type, make, rate and total prices shall be furnished in the above schedule.
13. Details of all foundation works including design for equipments and sub-station structures (as and where required) to be supplied and erected by the tenderers, shall be furnished in a separate schedule by the tenderer and then it shall be added to the schedule of general civil works. Un-priced price schedule shall be furnished along with the part I of the tender.
14. Only type tested equipments and materials of the same or higher rating as specified in JUSNL specification shall be accepted. The type test certificates must be furnished.

15. Make and list of all the major and critical equipments, such as, transformers, breakers, C.T., P.T. etc. and line materials shall be as per the vendor approval given by JUSNL/Purchaser in accordance with the provisions made under Section III of the specification. Any deviation therefrom shall not be accepted.
16. The make of materials/equipments must be mentioned clearly and specific.
17. Only dead tank type CT's and PT's shall be accepted.
18. Isolaters of turn-twist type, gang operated, Horizontally mounted double break type are to be offered.
19. Strom Drain, culvert, Bay marshalling kiosk, C.T. Junction Boxes, P.T. Junction Boxes as well as supplying laying, welding etc of earthing mat with Main Mat conductor, electrodes etc. shall be considered to be included in the scope of work whether specifically mentioned in the specification or not. The total rock bottom Lump-sum prices shall be quoted considering total scope of work for complete operation of the grid sub-station and price schedule may be furnished accordingly.
20. The figures furnished, under price break up schedules should match total prices.
21. Service tax/work contract tax, VAT as applicable for supply as well as erection and civil works shall be considered included in the total price.
22. In case of discrepancy between the unit price and total price, the unit price shall prevail.
23. Additional supplementary schedules may be furnished as and where required.
24. Furniture of Gogrej make (Chairs , Tables and Almirahs etc.) should be provided for control room and office purpose of GSS . Their quantity is specified in technical specification, duly approved by the purchaser .  
Two desktops with printers and scanners & one laptop, of reputed make and latest configuration, should be supplied.
25. Entry tax shall not be quoted by tenderers.
26. Un-priced price schedule should be furnished along with part I of the tender. This is mandatory.
27. The prices for “supply” and “erection” component for sub station automation system including mandatory spare shall be quoted in complete shape as system as a whole. This shall be considered for tender evaluation.  
The item and unit cost of additional spare required for successful operation of SAS for a period of 5 years beyond the guarantee period of SAS should also be quoted in separate schedule. This however shall not be considered for evaluation purpose.
28. The Control and Relay panel shall house the “Bay Control Unit”. Therefore, control panel should be supplied without “Event Logger”, ”Synchronising Trolley”, and “Mimic Diagram”. Pricing of C & R Panel is to be done accordingly. These features are already covered in SAS.



**FORM FOR EARNEST MONEY DEPOSIT**

(To be issued by Nationalized Banks)

To,  
Accounts Officer, JUSNL  
Engineering Building,  
HEC, Dhurwa, Ranchi

Whereas .....(Name of Bidder) (hereinafter called “the Bidder”) has submitted his bid dated.....(date) for the construction / supply of.....(name of contract) (hereinafter called “the Bid”) against NIT No ...../PR/JUSNL/2015-16 Know all People by these presents that We.....(name of the Bank) of .....(name of country) having our registered office at .....(hereinafter called “the Bank”) are bound unto.....Accounts Officer, JUSNL, Ranchi (hereinafter called “the purchaser) the sum of Rs.....\* for which well and truly to be made to the said Purchaser the Bank binds itself, his 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 after Bid opening the Bidder withdraws his Bid during the period of bid validity specified in the Bid,

Or

2. If the Bidder having been notified of the acceptance of his Bid by the Purchaser the period of Bid validity,

- a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required,

or

- b) fails or refuses to furnish the Performance Security, in accordance with the instructions to Bidders,

or

c) does not accept the correction of the Bid Price pursuant to relevant clause of the bid.

We undertake to pay the Purchaser up to the above amount upon receipt of his first written demand, without the Purchaser having to substantiate his demand, provided that in his demand the Purchaser will note the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including the date .....\*\* months after the deadline for submission of Bids as such deadline is stated in the instruction to Bidders or as it may be executed by the Purchaser, notice of which extension(s) to the Bank not later than the above date.

We, .....bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the JUSNL in writing.

Date the .....day of .....20

For .....Bank

Signature of the Bank.....

Witness.....Seal.....

(Signature, name and address).....  
.....  
.....

- \* The Bidder should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in relevant clause of the Bidding Document.
- \*\* .....Months after the end of the validity period of the Bid. Date should mentioned by the Purchaser in relevant clauses of the Bidding Document.

**FOR SECURITY DEPOSIT” / “PERFORMANCE GUARNATEE”/ CONTRACT  
GUARANTEE.**

**FORM OF GUARANTEE BOND**

(To be issued by nationalized Banks)

This deed of Guarantee is made this ..... days of  
.....between .....  
(Name of the bank and its.  
.....

Constitution with detailed address including its head office) (hereinafter called the Bank “ which expression shall, where the context so admits include its successor and permitted assign) of the one part and the Jharkhand Urja Sancharan Nigam Limited being the JUSNL constituted under Section-5 read with Section –12 of the Electricity (supply) Act., 1948 (Act No. LIV of 1948) having its head office at Engineering Building , Dhurwa, Ranchi – 834 004 (hereinafter called “the Nigam” which expression shall, where the context so admits include its successor and permitted assign) of the other part.

1. Whereas .....(name of the contractor or supplier if a Co.) being a company registered under the Indian Companies Act having its registered office at .....(name of the contractor’s) or supplier (s), if a partnership firm).....bearing registration no. .... of the year .....with the registrar of firms at .....and having its registered office at .....(Name of contractor or supplier if individual .....father’s name.....and having his principal place of business at .....(hereinafter called “The said contractor (s)/the said supplier(s) entered into an agreement No.....dated .....for the JUSNL (hereinafter called” he said purchase order” work order”.

2. Whereas, in accordance with clause.....of the said agreement/ the said purchase order, the JUSNL has agreed to make a payment to the said contractor(s)/ said supplier (s) of Rs. ....being cost of equipment/project to .....percent of value of contract under the said agreement/ the said purchase order on presentation by the said contractors(s)/ the said supplier (s) of the Bank Guarantee duly approved by the JUSNL for Rs. ....(Rs.....) only being.....percent of the value of the contract,

AND WHERE AS , in accordance with clause..... Of the said agreement/ the said purchase order, the Bank has at the request of the said contractor (s) / the said supplier (s) agreed to give their guarantee and the JUSNL has agreed to accept the said Bank Guarantee for the aforesaid sum.

NOW THESE PRESENT WITNESETH AS FOLLOWS : In consideration of the JUSNL having agreed to make a payment to the said contractor(s)/ the said supplier(s) of Rs. ....as per terms and conditions mentioned in the said agreement/ the tems and conditions mentioned in the said agreement/ the said purchase order, on presentation of Bank guarantee for Rs. ....(Rupees.....) only, we .....Bank Limited do hereby undertake to pay to he JUSNL an amount not exceeding s. ....against any damage or non-payment or .....suffered or would be caused to be suffered by the .....reason of any breach by the said contractor(s) / supplier(s) of the terms and conditions contained in the said agreement / the said purchase order.

3. We .....bank do hereby undertake to pay the amount due and payable under this guarantee without any demur, merely on a demand, from the JUSNL stating that amount claimed is due to way of loss or damage caused to or would be closed to or suffered by the JUSNL stating by reason of any breach of the said contractor(s) / the said supplier (s) of any of the terms and condition contained in the said agreement/ the said purchase order or by reason of the said contractor's (s) the said supplier's failure to perform the said agreement/ the said purchase work order. Any such demand on the bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However our liability under this guarantee shall be restricted to an amount not exceeding Rs. ....

4. We, .....Bank further agree that the guarantee herein contained remain in full force and effect during the period that would be taken for the performance of the said agreement/ the said purchase order/ work order and that it shall continue to be enforceable till all the dues of the JUSNL under or by virtue of the said agreement the said purchase order/ work order has been fully paid and its claims satisfied or discharged or till the JUSNL certifies that the terms and conditions of the said agreement / the said purchase order/ work order are fully and properly carried out by the said contractor(s) the said supplier (s) and accordingly discharges the guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before .....we shall be discharged from all liability under this guarantee thereafter.

5. We, .....Bank further agree with JUSNL that the JUSNL shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement / the aid purchase order / work order or to extent time of performance by the said contractor (s) the said supplier (s) from time to time or to postpone for any time or from time to time, any or the powers exercisable by the JUSNL against the said contractor (s) the said supplier (s) the said supplier (s) and to forbear or enforce any of the terms and conditions relating to the said agreement/ the said purchase order / work order and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said contractor (s) the said supplier (s) or for any forbearance act of commission on the part of the JUSNL or any indulgence by the JUSNL to the said contractor (s) the said purchase order / work order or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

6. We, .....Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the JUSNL in writing.

Date the.....day of .....19

For .....Bank

## CONTRACT FORM FOR AGREEMENT

This contract made this .....only of .....of Two Thousand .....  
..... between the Jharkhand Urja Sancharan Nigam Limited, constituted under  
Section 5 of the Electricity (Supply) Act., 1948 (herein after referred to as “the JUSNL”) on the  
one part and Sri .....in his own behalf and on behalf of other member of the Joint  
family/proprietor of the firm ..... S/O. Sri..... by  
religion.....P.O.....P.S.....District.....(in the State  
of ..... ) P.S.....District..... or  
.....as partnership firm/Joint stock company duly registered  
under the Indian partnership Act. 1932/Indian company Act., 1913/1956 bearing registration No.  
..... with the Registrar of Firms/Registrar of Joint Stock companies at  
.....acting through its.....namely  
Sri.....S/O.....permanent resident of village/Town...  
.....P.O.....P.S.....Distr  
ict.....in the State of .....at present  
residing at Village/Town.....P.O. ....  
.....P.S.....District..... (hereinafter  
referred to as the “contractor/Supplier”, which expression, shall unless excluded by or repugnant  
to the context, including his heirs, legal representatives, successors, executors, administrators  
and permitted assigns on the other part.

Where as the JUSNL agrees to award the complete work of .....  
Materials and the Supplier / Contractor has agreed to execute the said work in accordance with  
Jharkhand Urja Sancharan Nigam Limited’s notice inviting Tender No. .... general  
conditions of tenders and the bill of quantity and Contractor/ Supplier proposal No.  
.....dated .....and .....on the  
following terms and conditions.

- i) The contractor/ supplier agrees to execute the above work and deliver the above said materials conformity with the provisions of the general conditions of NIT and other documents referred to above which forms a part of this contract within.....months from execution of this contract.
- ii) The JUSNL hereby agrees to pay to the Contractor/Supplier on due performance of the contract, price of Rs. ....from the JUSNL’s fund in the manner and in accordance with

terms specified in the NIT as also in the P.O./WO No.....dated .....to be issued.

iii) Other conditions, if any, to be mentioned.

In witness whereof the said Parties hereto have hereunto set and subscribed their respective hand and seal the day and year first above written.

I signed by/ or on behalf of the contractor/supplier .....Authorised by the Contractor/ supplier under deed of .....dated .....(Strike off the works not needed. Where the signature is made under authorization made by a deed resolution, the consumer should furnish an attested copy of such deed. Resolution).

Signature on behalf of the JUSNL

Signature of the behalf of the Supplier/ Contractor  
Supplier/Contractor  
(Seal of the Contractor/ Supplier

1. Witness

2. Witness

1. Witness

2. Witness .

**STANDING INDEMNITY BOND FOR 'PAYMENTS OF MATERIALS'**  
(stamp value of Rs. 100/-only)

We, M/s \_\_\_\_\_ hereby undertake that we held at our stores depots at \_\_\_\_\_ for and on behalf of the Jharkhand Urja Sancharan Nigam Limited acting in the premises through the Chief Engineer (Transmission \_\_\_\_\_ JUSNL \_\_\_\_\_ hereinafter referred to as "the Purchaser") all materials for which 'Payment of Materials' payments have been made to us against the contract for Design, Engineering, Supply, Erection, Testing & Commissioning of 220/132/33 KV Grid Sub-Station at Bokaro (Jainamore) on the JUSNL also referred to as vide Letter of Acceptance of Tender No. \_\_\_\_\_ dated \_\_\_\_\_ and materials handed over to us by the Purchaser for the purpose of execution of the said contract, until such time the materials are duly erected for otherwise handed over to him.

We shall be entirely responsible for the safe custody and protection of the said materials against all risk till they are duly delivered as erected equipment to the purchaser, or as he may direct otherwise and shall indemnify the purchaser against any loss, damage, or deterioration whatsoever in respect of the said materials while in our possession and against disposal of surplus materials. The said materials shall at all times be open to inspection by any officer authorized by the Chief Engineer (Transmission), in charge of the Jharkhand State Electricity JUSNL or his successor (whose address will be intimated in due course).

Should any loss, damage or deterioration of materials occur or surplus materials disposed off and refund becomes due, the purchaser shall be entitled to recover from us the full cost as per prices included in Schedule rate to the Contract (As applicable) and in respect of other materials as indicated in loss or damage, if any, alongwith the amount to be refunded without prejudice to any other remedies available to him by deduction from any sum due or any sum which at any time hereafter become due to us under the said or any other Contract.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 20

(for and on behalf of)

M/s \_\_\_\_\_ (Contractor)

Signature of Witness :

Name of witness IN BLOCK LETTER

ADDRESS

## FORM OF POWER OF ATTORNEY FOR JOINT VENTURE

### (On Non-judicial Stamp Paper of appropriate value to be purchased in the name of Joint Venture

KNOW ALL MEN BY THESE PRESENTS THAT WE, the Partners whose details are given hereunder \_\_\_\_\_ have formed a Joint Venture under the laws of \_\_\_\_\_ and having our Registered Office(s)/ Head Office(s) at \_\_\_\_\_ (hereinafter called the Joint Venture' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) acting through M/s \_\_\_\_\_ being the Partner in-charge do hereby constitute, nominate and appoint M/s. \_\_\_\_\_ a Company incorporated under the laws of \_\_\_\_\_ and having its Registered /Head Office at \_\_\_\_\_ as our duly constituted lawful Attorney (hereinafter called "Attorney "Authorised Representative" or "Partner In-charge") to exercise all or any of the powers for ad on behalf of the joint Venture in regard to Sub-Station/associated line Package for \_\_\_\_\_ (Specification No. : ) \_\_\_\_\_ of Jharkhand Urja Sancharan Nigam Limited having its Registered Office at Engineering Building, H.E.C. Dhurwa, Ranchi – 834 004 Jharkhand (hereinafter called the "Employer") and the bids for which have been invited by the Employer, to undertake the following acts :

- i) To submit proposal and participate in the aforesaid Bid Specification of the Owner on behalf of the "Joint Venture".
- ii) To negotiate with the Employer the terms and conditions for award of the Contract pursuant to the aforesaid Bid and to sign the Contract with the Employer for and on behalf of the "Joint Venture".
- iii) To do any other act or submit any documents related to the above.
- iv) To receive, accept and execute the Contact for and on behalf of the "Joint Venture".

It is clearly understood that the Partner In-charge (Lead Partner) shall ensure performance of the Contract(s) and if one or more Partner fail to perform their respective portion of the Contract(s), the same shall be deemed to be a default by all the Partners.

It is expressly understood that this Power of Attorney shall remain valid binding and irrevocable till completion of the Defect Liability Period in terms of the Contract.

The Joint Venture hereby agrees and undertakes to ratify and confirm all the whatsoever the said Attorney/ Authorised Representative/ Partner In-charge quotes in the bid, negotiates and signs the Contract with the Employer and /or proposes to act on behalf of the Joint Venture by virtue of this Power of Attorney and the same shall bind the Joint Ventures as if done by itself.



IN WITNESS THEREOF the Partners constituting the Joint Venture as aforesaid have executed these presents on this \_\_\_\_\_ day of \_\_\_\_\_ under the Common Seal(s) of their Companies.

For and on behalf of the Partners of Joint Ventures

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The Common Seal of the above Partners of the Joint Venture :

The Common Seal has been affixed there into in the presence of :

**WITNESS:**

1. Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Designation \_\_\_\_\_  
Occupation \_\_\_\_\_

2. Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Designation \_\_\_\_\_  
Occupation \_\_\_\_\_

## FORM OF JOINT VENTURE AGREEMENT

**(On Non-judicial Stamp Paper of appropriate value  
to be purchased in the name of Joint Venture with embossing seal of both firms)**

PROFORMA OF JOINT VENTURE AGREEMENT BETWEEN \_\_\_\_\_  
AND \_\_\_\_\_ FOR BID SPECIFICATION NO. \_\_\_\_\_ OF  
Jharkhand Urja Sancharan Nigam Limited.

THIS joint venture agreement executed on this \_\_\_\_\_ day of \_\_\_\_\_  
Two thousand and \_\_\_\_\_ between M/s. \_\_\_\_\_ a  
company incorporated under the laws of \_\_\_\_\_ (hereinafter called the  
“Lead Partner” which expression shall include its successors, executors and permitted assigns),  
M/s. \_\_\_\_\_ a company incorporated under the laws of  
\_\_\_\_\_ and having its registered office  
at \_\_\_\_\_ (hereinafter called the “Partner” which expression shall  
include its successors, executors and permitted assigns) and M/s. \_\_\_\_\_ a  
company incorporated under the laws of \_\_\_\_\_ and having  
its office at \_\_\_\_\_ (hereinafter called the “Partner” which expression shall  
include its successors, executors and permitted assigns) for the purpose of making bid and entering  
into a contract (in of award) for Construction of Sub-Station/associated line Package for  
\_\_\_\_\_ (Specification No. : \_\_\_\_\_) of Jharkhand Urja  
Sancharan Nigam Limited having its Registered Office at Engineering Building, H.E.C. Dhurwa,  
Ranchi – 834 004 Jharkhand (hereinafter called the “Employer”).

WHEREAS the Employer invited bids as per the above mentioned Specification for the design,  
manufacturer, supply, erection, testing and commissioning of Equipment/ materials stipulated in  
the bidding documents under subject Package which is sub-Station/ associated line Package for  
\_\_\_\_\_(Specification No.:  
\_\_\_\_\_).

AND WHEREAS (Qualifying Requirements of the Bidder), page no. 5 para 12 forming part of the  
bidding documents, stipulates that a Joint Ventures are acceptable up to two firms only and both  
the firms should jointly qualify of two or more qualified firms as partners, meeting the requirement  
of para 12 page no. 5, as applicable may bid, provided the Joint Venture fulfills all other  
requirements of NIT in such a case, the Bid shall be signed by all the partners so as to legally bind  
all the partners of the Joint Venture, who will be jointly and severally liable to perform the  
Contract and all obligations hereunder.

The above clause further states that the Joint agreement shall be attached to the bid and the Contact performance Guarantee will be as per the format enclosed with the bidding documents without any restriction or liability for either for party.

AND WHEREAS the bid has been submitted to the Employer vide NIT No. \_\_\_\_\_ by Lead Partner based on the Joint Venture agreement between all the partners under these presents and the bid in accordance with the requirements of (Qualifying Requirements of the Bidder as per NIT), has been signed by all the partners.

**NOW THIS INDENTURE WITNESSETH AS UNDER:**

In consideration of the above premises and agreements all the Partners to this Joint Venture do hereby now agree as follows:

1. In consideration of the award of the Contract by the Employer to the Joint Venture partners, we, the partners to the Joint Venture agreement do hereby agree that M/s. \_\_\_\_\_ shall act as Lead Partner and further declare and confirm that we shall jointly and severally be bound into the Employer for the successful performance of the Contract and shall be fully responsible for the successful performance of the Contract and successful performance of the equipment in accordance with the Contract.
2. In case of any breach of the said Contract by the Lead partner or other Partner(s) of the Joint Venture agreement, the Partner(s) do hereby agree to be fully responsible for the successful performance of the Contract and to carry out all the obligations and responsibilities under the Contract in accordance with the requirements of the Contract.
3. Further, if the Employer suffers any loss or damage on account of any breach in the Contract or any shortfall in the performance of the equipment in meeting the performance guaranteed as per the specification in terms of the Contract, the Partner(s) of these presents, undertake to promptly make good such loss or damages caused to the Employer, on its demand without any demure. It shall not be necessary or obligatory for the Employer to proceed against lead Partner to these present before proceeding against or dealing with the other Partner(s).
4. The financial liability of the Partners of this Joint Venture agreement to the Employer, with respect to any of the claims arising out of the performance of non-performance of the obligations set forth in the said Joint Venture agreement, read in conjunction with the

relevant conditions of the Contract shall, however, not be limited in any way so as to restrict or limit the liabilities of any of the partners of the Joint Venture agreement.

5. It is expressly understood and agreed between the Partners to this Joint Venture agreement that the responsibilities and obligation of each of partners shall be as delineated in Appendix-I (*\*to be incorporated suitably by the Partners*) to this agreement. It is further agreed by the partners that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities of the Partners under this Contract.
6. This Joint Venture agreement shall be construed and interpreted in accordance with the laws of India and the courts of Ranchi, Jharkhand shall have the exclusive jurisdiction in all matters arising thereunder.
7. In case of an award of a Contract, We the Partners to the Joint Venture agreement do hereby agree that we shall be jointly and severally responsible for furnishing a Contact Performance Security from a bank in favour of the Employer in the forms acceptable to purchaser for value of five(5%) of the Contract Price in the currency / currencies of the Contract.
8. It is further agreed that the Joint Venture agreement shall be irrevocable and shall form an integral part of the contact, and shall continue to be enforceable till employer discharges the same. It shall be effective from the date first mentioned above for all purposes and intents.

IN WITNESS WHEREOF, the Partners to the Joint Venture agreement have through their authorized representatives executed these presents and affixed Common Seals of their companies, on the day, month and year first mentioned above.

1. Common Seal of \_\_\_\_\_ For Lead Partner  
has been affixed in my/our presence  
pursuant to the JUSNL of Director's \_\_\_\_\_ (Signature of authorized  
resolution dated \_\_\_\_\_ representative  
  
Name \_\_\_\_\_  
Signature \_\_\_\_\_ Designation \_\_\_\_\_  
\_\_\_\_\_  
Name \_\_\_\_\_ Common Seal of the company

Designation \_\_\_\_\_

\_\_\_\_\_

2. Common Seal of \_\_\_\_\_

For other Partners

Has been affixed in my/our presence  
pursuant to the JUSNL of Director's  
resolution dated \_\_\_\_\_

(Signature of authorized  
representative

Name \_\_\_\_\_

Signature \_\_\_\_\_ Designation \_\_\_\_\_

Name \_\_\_\_\_

Common Seal of the company

Designation \_\_\_\_\_

**WITNESS:**

1. \_\_\_\_\_

2. -

(Signature)

(Signature)

Name \_\_\_\_\_ Name \_\_\_\_\_

\_\_\_\_\_

(Official address)

(Official address)

**PROFROMA OF LETTER OF UNDERTAKINGS**

(To be submitted by the Bidder alongwith his Bid)

(To be executed on non-judicial paper of requisite value)

Ref. ....

Date .....

To

Chief Engineer (Transmission)  
JHARKHAND URJA SANCHARAN NIGAM LTD.  
Engineering Building, HEC, Dhurwa, Ranchi

Dear Sir,

I/We have read and examined the following bid documents relating to the  
..... (Full scope of work)

- a) Notice Inviting Tender.
- b) Conditions of Contract
- c) All the terms and conditions stipulated in the tender documents.
- d) Technical Specification.

I/We hereby submit our Bid and undertake to keep our Bid Valid for a period of six  
(6) months from the date of bid i.e. up to ..... I/We hereby further undertake  
that during said period I/We shall not vary/alter or revoke my/our Bid.

This undertaking is in consideration of JUSNL agreeing to open my Bid and consider and  
evaluate the same for the purpose of award of work in terms of provision of tender  
specifications.

Should this Bid be accepted, I/We also agree to abide by and fulfill all the terms &  
conditions of provision of the above mentioned bid documents.

Signature along with Seal of Co. ....

(Duly authorized to sign the Tender on behalf of the Contractor)

Name .....

Designation .....

Name of Co. ....

(in Block Letters.)

**WITNESS**

Signature .....

Date & Postal Address

Date .....

.....

Name & Address .....

.....

.....

Telegraphic Address

.....

.....

.....

Telephone No.....

Telex No. ....

**FORMAT FOR WORK COMPLETION SCHEDULE FOR SUBSTATION WORK**

We hereby declare that the following work completion schedule shall be followed by us in supply and erection of the equipments for **Sub station**. The period indicated below from the date of order of the contract to us :

<b>Sl. No.</b>	<b>Description of Work</b>	<b>Period of Months</b>
1.	Finalisation of Sub - Vendors	
2.	Completion of detailed engineering	
3.	Procurement of raw materials / bought out items	
	i) Commencement	
	ii) Completion	
4.	Manufacturing	
	i) Completion	
	ii) Commencement	
5.	Type testing (if required)	
	i) Commencement	
	ii) Completion	
6.	Despatch and receipt at site	
	i) Commencement	
	ii) Completion	
7.	Soil investigation	
	i) Commencement	
	ii)Completion	
8.	Establishment of site office	
9.	Erection in during civil / works	
	i) Commencement	
	ii) Completion	
10.	Testing & Commissioning	
	i) Commencement	
	ii)Completion	
11.	Commissioning & issuance of taking over	

Place : \_\_\_\_\_ Signature  
 Date : \_\_\_\_\_ Name  
 Status  
 Whether authorised attorney of the tendering company.  
 Name of the tendering company