

**BHARAT HEAVY ELECTRICALS LIMITED  
TRANSMISSION BUSINESS GROUP  
CONSTRUCTION MANAGEMENT  
LODHI ROAD, NEW DELHI -110003**



**TENDER DOCUMENTS**

**FOR**

**1no 230kV, 15MVAr reactor unloading, custom clearance at port, transportation upto site and placement on plinth (Including shifting of old reactor tank aside in Semera switchyard) at Semera in Ethiopia**

**CUSTOMER**

**ETHIOPIAN ELECTRIC POWER CORPORATION**

**TENDER SPEC. NO.:- TBNS/ETHIOPIA/REACTOR**

**DATED: - 20-07-2012**

**TRANSMISSION BUSINESS GROUP**  
**SUBCONTRACTS MANAGEMENT**

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**BHARAT HEAVY ELECTRICALS LIMITED**  
**TRANSMISSION BUSINESS GROUP**  
LODHI ROAD NEW DELHI 110003

TELEPHONE: -011-41793252, FAX: 011-24369509,  
e-mail:-krishna@bhelindustry.com

**NOTICE INVITING TENDER**  
**NIT\_12331**

REF.: TBNS/ETHIOPIA/REACTOR/TENDER

DATE: 20.07.12

**SUB:- 1No 230kV, 15MVA reactor unloading, custom clearance at port, transportation up to site and placement on plinth (Including shifting of old reactor tank aside in Semera switchyard) at Semera in Ethiopia.**

Dear Sirs,

1. Sealed tenders are invited for the following:

NAME OF WORK	TIME OF COMPLETION	TENDER SUBMISSION DATE AND TIME	TENDER OPENING DATE & TIME
Unloading, custom clearance at port, transportation up to site and placement on plinth (Including shifting of old reactor tank aside in Semera switchyard) at Semera in Ethiopia. of 1no 230kV, 15MVA reactor (Detailed as per Annexure-1)	15 days from the date of LOI	31.07.12 15.00 hrs.	31.07.12 15.30 hrs. (Technical bid only) And Price bid opening date will be intimated later to Techno commercially acceptable parties

2. ADDRESS FOR SUBMISSION AND OPENING OF TENDER:

**2.1 by Post**

**BHARAT HEAVY ELECTRICALS LIMITED,**  
**TRANSMISSION BUSINESS GROUP,**  
**LODHI ROAD, NEW DELHI -110003**  
**ATTN: Krishna Swaroop Singh (Sr. Manager/TBNS)**  
**Phone: 011-41793252, Fax: 011-24369509**  
**E-mail: krishna@bhelindustry.com**

**2.2 by e-mail**

**[tenderbox@bhelindustry.com](mailto:tenderbox@bhelindustry.com)**

3. The prospective bidders who have downloaded the tender documents from our website are requested to send their acknowledgement and willingness to participate in the tender to the undersigned, through fax or email.
4. In case an offer is not being submitted by the prospective bidders against this tender, they may send their “regret” letter to this office, for information.
5. Offers should be strictly in accordance with the Tender Specifications and General Instructions to Tenderer enclosed herewith.
6. As such, the bidders should submit their best prices in the ‘Sealed Price Bid’. However, bidders are required to confirm their acceptance of “General terms and conditions”. In case bidders choosing the email option, bidders should clearly mention the subject line as **“Offer for against NIT\_12331- Price Bid”** or **“Offer against NIT\_12331- Technical bid”** only on [tenderbox@bhelindustry.com](mailto:tenderbox@bhelindustry.com)
7. Clarifications, if any, can be obtained from the undersigned but such requests should be submitted well before the due date for submission of tenders. Due date for submission and opening of tenders will not be extended on such grounds.
8. Technical Bid will be opened at BHEL, Integrated Office Complex, Lodhi Road, New Delhi-110003, India. If required, technical discussions will be held with only those bidders who have taken any deviations. Bidders representative may be present during technical bid opening for technical discussion, if required. The price bids will be opened subsequently, after Technical Bids of all the Bidders have been evaluated and finalised. Bidders should quote their most competitive rates as there will not be any price negotiation. However if felt necessary by BHEL, price negotiation will be held with lowest bidder (L-1) only. IT WOULD BE PREFERRED THAT YOUR OFFER IS WITHOUT ANY DEVIATION w.r.t. TENDER SPECIFICATIONS AND THE SAME MAY BE CLEARLY MENTIONED ON THE COVERING LETTER ACCOMPANYING THE TECHNICAL BID. Offers with deviations are likely to be rejected. However if the bidder insists on any technical or commercial deviations, from the specification and/or tender conditions, the price implication if any, of withdrawing the deviations must be submitted along with the price bid in a separate sealed envelope superscribed “Price Implication for withdrawal of deviations”.
9. The Bidders are advised to visit Site to have better understanding of job.
10. Work schedule committed by the contractor in their offer, to match the scheduled completion, shall be submitted by contractor and mutually agreed with site In-charge immediately after the award of work.
11. first time bidders to submit the credentials proving the capability to execute such works alongwith technical bid (part-1)

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## 2. Procedure for submission of sealed Tenders

AA) By courier/ Post

Envelop one superscribed as “Technical bid” and contains all the papers and credential without mentioning the prices. Except prices every condition and comments (if any) to be mentioned in this part. Both envelops can be submit in single large envelop for ease of dispatch.

**Part-1 Technical bid Offer against NIT 12331**

To,  
BHARAT HEAVY ELECTRICALS LIMITED,  
TRANSMISSION BUSINESS GROUP,  
LODHI ROAD, NEW DELHI -110003  
ATTN: Krishna Swaroop Singh (Sr. Manager/TBNS)  
Phone: 011-41793252, Fax: 011-24369509  
E-mail: [krishna@bhelindustry.com](mailto:krishna@bhelindustry.com)

From:.....

**Part-2 Price bid Offer against NIT 12331**

To,  
BHARAT HEAVY ELECTRICALS LIMITED,  
TRANSMISSION BUSINESS GROUP,  
LODHI ROAD, NEW DELHI -110003  
ATTN: Krishna Swaroop Singh (Sr. Manager/TBNS)  
Phone: 011-41793252, Fax: 011-24369509  
E-mail: [krishna@bhelindustry.com](mailto:krishna@bhelindustry.com)

From:.....

BB) By email: the email must mentioned the subject as “Technical bid Offer against NIT 12331” or “Price bid Offer against NIT 12331” and submit the scanned documents as attachement or in text to the email as below

**[tenderbox@bhelindustry.com](mailto:tenderbox@bhelindustry.com)**

### 3. SCOPE OF WORK

- 1) Hiring of crane of at least 60MT capacity for loading of transformer at Djibouti Port.
- 2) Loading of Reactor by at least 60 MT lifting capacity crane on low bed trailer suitable to carry at least 60 MT load.
- 3) Unloading and placement of Reactor brought from Djibouti port on Foundation/Plinth of Reactor at Samera by crane of at least 60 MT capacities as per instruction of site in charge. Unloading and keeping the accessories within in substation boundary.
- 4) Transportation of Reactor from Djibouti port to Samera site through trailer suitably to carry at least 60 MT loads.
- 5) Endorsement on the relevant documents from relevant authorities, including BHEL representatives is to be obtained by the contractors.
- 6) A copy of shipping list of materials is enclosed at Annexure -1 & 2.
- 7) Coordination including compliance of all formalities required with all government authorities including Customs, Port authorities and with shipping lines, other agencies (if any) for getting goods cleared.
- 8) Obtaining permits at Djibouti Port and for en route (if any) required for transportation of materials.

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Unconditionally accepted

Signature of Vendor

Official Stamp

## 4. GENERAL TERMS & CONDITIONS

- 1). Arrangement of cranes shall be the sole responsibility of the vendor at all locations and BHEL shall not bear any financial liability on this pretext. The vendor shall be responsible for safe loading of the Heavy Packages. In case of any damages during operations, it will be the sole responsibility of the contractor to make good the losses to the product and any other incidental damages.
  - 2). **FIRM** Price must be quoted separately for all the material mentioned at Annexure 1 & 2 in price schedule annexure-A on lumpsum basis
  - 3). The offer must be valid for a minimum period of 45 days from the date of opening of the tender
  - 4). No deviation from the scope of the work and terms and conditions is acceptable.
  - 5). The work is to be started immediately on receipt of instructions from BHEL.
  - 6). Contractor should ensure port handling, transportation & delivery of goods at site with utmost care and in a professional manner. Contractor should follow manufacture's lifting & handling instructions on packages. Contractor will be responsible for any damage due to negligence to follow manufacturer's instructions or due to use of wrong/defective lifting and handling equipments, wrong/inadequate trailer.
  - 7). 100% payment on successful completion of work and certification by BHEL representative.
  - 8). Payment can be consider in US\$/ETB/INR. The evaluation shall be made converting in INR as on State Bank Of India TT selling rate prevailing on date of tender opening. In case conversion rates are not available on date of tender opening, the rates earliest available (1 day prior, 2 days prior, as the case may be) shall be considered for evaluation.
  - 9). Payment shall be released with in 30 days of receipt of invoices supported with site delivery receipts.
  - 10). The price must be quoted in the price format enclosed here with Annexure-A.
  - 11). The rate must be quoted lump sum for the complete work strictly as per price schedule (Annexure-A). No variation in rates on any account shall be acceptable at a later date.
  - 12). In case of delay due to BHEL, the contractor will have to deposit the demurrage charges at Djibouti and will submit their bill along with the invoice / receipt of port / shipping company for reimbursement from BHEL on actuals basis without any overhead/ facilitation charges. However, in case Delay is due to contractor the same shall be borne by the contractor only.
  - 13). Taxes / duties statutory levies (i.e. with holding tax) shall be payable in Ethiopian Birr as per prevailing rule.
  - 14). The payment shall be made after deduction of all taxes and duties and on submission of VAT invoice as per Ethiopian tax laws.
  - 15). No overrun payment shall be paid and no idle charges or extra kilometres are to be paid.
  - 16). All the payment shall be made in ETB/INR/USD.
  - 17). **Official Government** charges paid by the contractor in port handling, customs clearance shall be reimbursed subject to production of actual receipts from Port Authorities, shipping lines, customs authorities and other government authorities. No expense of any other nature shall be reimbursed
  - 18). Evaluation shall be made on the basis of total cost to BHEL considering both price schedule of Annexure 1 & 2.
  - 19). **Law of Contract & Arbitration:** - Indian Law of arbitration to apply.
  - 20). **Force Majeure:** To apply for both sides.
- Contractor to ensure effective coordination with BHEL's project manager at Addis Ababa and BHEL's site team for planning of movement of goods, supply of documentation and smooth delivery of goods at site.

Regd.Office : BHEL House, Siri Fort,

Unconditionally accepted

Signature of Vendor

Official Stamp

## **5. No Deviation CERTIFICATE**

### **TO BE FILLED BY TENDERER**

Certified that General Instructions and Information for tenderer have been read/ complied/ agreed to and each page of tender offer has been initialled and stamped. No deviation has been taken on any account in this tender. In case any deviation is observed in any document enclosed with the tender, the deviation shall be considered null & void.

(Signature of Tenderer)

Name and Designation of Authorised person (s)  
signing the tender on behalf of the tenderer.

Unconditionally accepted

Signature of Vendor

Official Stamp

## 6. Price Bid

**(to be submit priced copy alongwith technical bid after deleting the price)**

**ANNEXURE- A**

**1no, 15MVA reactor unloading, custom clearance at port, transportation up to site and placement on plinth  
(Including shifting of old reactor tank aside in Semera switchyard)**

Name of project: 220/33kV substation Semera, CSD project Ethiopia

Sl. No	Description	Unit	Qty	Price ETB/INR/US \$ (pl strike whichever not applicable)
1	Custom clearance on Duty free basis, of 1no 15MVA, 220kV shunt Reactor of Areva Make sl. No C-1-125 at Djibouti port as well as in Ethiopia	Nos	1	
2	<p>Loading of 15MVA, 220kV shunt reactor on Trailer at Djibouti Port, transportation of the reactor and unloading at 220/33kV substation at Semera, Ethiopia on its foundation as per the instruction of BHEL/EEPCO Engineer. Prices for Sl. No C-10125 from Djibouti to Samera as details below.</p> <p>The approx distance would be 300km The approx transportable weight is 32MT Length : 6250mm Height : 3300 mm Width : 2710 mm OGA drawing enclosed</p>	Nos	1	
3	<p>Loading at Port, Transportation and unloading at Semera as per the instruction of Engineer for accessories &amp; Oil drums of 1x15MVA, 220kV shunt reactor from Djibouti to Semera as details below.</p> <p>The approx distance would be 300km. The approx transportable weight is 24MT. The total number of package are approx. 26nos, and 31nos oil drum pallets details are as per annexure. (Minor variation is to be absorbed by vendor)</p>	LOT	1	
4	Shifting of damaged Existing reactor from plinth to other place inside switchyard as per the instruction of Engineer –In- Charge of BHEL	lumpsum	1	

### General note

- 1 The accessories are also placed in the vicinity of the reactor.
- 2 Bidders are advised to visit the site before submitting their offers.

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- 3 The bidders are requested to verify the scope of work and material required at site, any material/ service required to execute the above work necessary but not included above shall be in the scope of bidder without any cost implication.
- 4 The completion period for the above work is 15days. Efforts are to be made to avoid levy of demurrage at port. Waiting charges/ detention period not to be paid in any circumstances

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Unconditionally accepted
Signature of Vendor
Official Stamp

**6. Price Bid for additional item (to be dispatch separately)  
(to be submit priced copy along with technical bid after deleting the price)**

**ANNEXURE- A1**

**Transformer Oil unloading, custom clearance at port, transportation up to site and unloading at Dichoto site**

Name of project: 220/33kV substation Dichoto, CSD project Ethiopia

Sl. No	Description	Unit	Qty	Price ETB/INR/US\$ (pl strike whichever not applicable)
1	Custom clearance on Duty free basis, of Transformer Oil in drums at Djibouti port as well as in Ethiopia	Nos	20	
3	<p>Loading at Port, Transportation and unloading at Dichoto as per the instruction of Engineer for Transformer Oil drums from Djibouti to Dichoto as details below.</p> <p>The approx distance would be 250km upto Dichoto.                      The approx transportable weight is 3930kgs                      Each drum containing 209litres of oil and total 20nos drums containing 4kL oil approx.                      (Minor variations to be absorbed by vendor)</p>	Nos	20	

**General note**

- The completion period for the above work is 15days. Efforts are to be made to avoid levy of demurrage at port. Waiting charges/ detention period not to be paid in any circumstances.

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<p>Unconditionally accepted</p>  <p>Signature of Vendor</p>  <p>Official Stamp</p>
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**7. Shipping List- Annexure 1**

**TENTATIVE SIZE AND WEIGHT LIST FOR 15 MVAR, 230 KV SHUNT REACTOR SL NO. C-10125**

<b>Pkg No</b>	<b>EQUIPMENT</b>	<b>Unit Dimensions in mm</b>			<b>Gross Weight KG</b>	<b>Net Weight KG</b>
C-10125	15MVAR, 220kV shunt reactor sl. No C-10125.- Main tank	6250mm	3300 mm	2710 mm	OGA drawing enclose d	32000 kg

Unconditionally accepted

Signature of Vendor

Official Stamp

### 8. Shipping List- Annexure 2

#### TENTATIVE SIZE AND WEIGHT LIST FOR 15 MVAR, 230 KV SHUNT REACTOR SL NO. C-10125

CUSTOMER : ETHIOPIAN ELECTRIC POWER CORPORATION							
Pkg No	EQUIPMENT		Unit Dimensions in mm			Gross Weight KG	Net Weight KG
	Description	Qty	L	W	H		
BOX 1	HV LINE BUSHING 245KV , 1250 AMPS., 600 MM CT ACCOMODATION OIP 25 MM / KV CREEPAGE ( IT. NO. 10 ) WITH TERMINAL HEAD & OIL SEAL	1	4500	710	1000	1070	480
BOX 2	HV LINE BUSHING 245KV , 1250 AMPS., 600 MM CT ACCOMODATION OIP 25 MM / KV CREEPAGE ( IT. NO. 10 ) WITH TERMINAL HEAD & OIL SEAL	1	4500	710	1000	1070	480
BOX 3	HV LINE BUSHING 245KV , 1250 AMPS., 600 MM CT ACCOMODATION OIP 25 MM / KV CREEPAGE ( IT. NO. 10 ) WITH TERMINAL HEAD & OIL SEAL	1	4500	710	1000	1070	480
BOX 4	NEUTRAL BUSHING 72.5 KV , 800 AMPS., 300 MM CT ACCOMODATION OIP SOLID STEM TYPE 25 MM / KV CREEPAGE ( IT. NO. 11 ) WITH TERMINAL HEAD & OIL SEAL	1	2000	560	770	300	70
BOX 5	NEUTRAL BUSHING 72.5 KV , 800 AMPS., 300 MM CT ACCOMODATION OIP SOLID STEM TYPE 25 MM / KV CREEPAGE ( IT. NO. 11 ) WITH TERMINAL HEAD & OIL SEAL	1	2000	560	770	300	70
BOX 6	NEUTRAL BUSHING 72.5 KV , 800 AMPS., 300 MM CT ACCOMODATION OIP SOLID STEM TYPE 25 MM / KV CREEPAGE ( IT. NO. 11 ) WITH TERMINAL HEAD & OIL SEAL	1	2000	560	770	300	70
BOX 7	TRANSFORMER MANUAL	3	1450	1250	770	500	150
	OTI 2 SETS OF CONTACT WITH POTENTIOMETER 15 MTR. CAPILLARY TYPE : PC 252 MICRO SWITCH ( IT. NO. : 57 )	2					
	WTI 4 SETS OF CONTACT WITH POTENTIOMETER 15 MTR. CAPILLARY TYPE : PC 252 MICRO SWITCH ( IT. NO. 58 )	1					
	MIG THERMOMETER	1					
	REMOTE WINDING TEMPERATURE INDICATOR	1					
	PRESSUIRE GAUGE ( 0 – 100 M BAR )	1					
	SHIPPING LIST	1					
	MOLG 250 DIAL WITH HOLA LOLA CONTACT & FLOAT ARM LENGTH = 1060 MM LONG FOR 1000 MM DIA. CONSERVATOR ( IT. NO. : 33 )	1					
	PRESSURE RELIEF DEVICE 150 MM 2 NO + 2 NC ( IT. NO. : 19 )	2					
	RAPID PRESSURE RELAY WITH CONNECTING LEAD & MS adapter	1					
	ADAPTER WITH INJECTION KIT FOR FLEXIBLE SEPARATOR WITH 15 M.M. OEF VALVE & HOSE NIPPLE	1					
	22 KV PORCLAIN POST INSULATOR	3					
	BUCHHOLZ RELAY , 80 BORE TYPE : GOR -3 DOUBLE FLOAT	1					
	SILICAZEL BREATHER DTO - 9 ( FOR MAIN CONSERVATOR )	1					
BOX 8	2.5 SQ. M.M. 2 CORE CABLE	50 MTR.	1020	1020	780	370	200
	2.5 SQ. M.M. 3 CORE CABLE	10 MTR.					
	2.5 SQ. M.M. 4 CORE CABLE	100 MTR.					
	4.0 SQ. M.M. 2 CORE CABLE	250 MTR.					
BOX 9	DRAIN VALVE GUN METAL GATE 80 BORE BEF WITH LOCKING ROD ( ITEM NO. : 14 )	1	1450	1250	770	440	300
	BOTTOM FILTER VALVE GUN METAL GATE 50 BORE BEF WITH LOCKING ROD ( ITEM NO. : 15 )	1					
	TOP FILTER VALVE GUN METAL GATE 50 BORE BEF WITH LOCKING ROD ( ITEM NO. : 16 )	1					

	CONSERVATOR. SHUT OFF VALVE GUN METAL GATE 80 BORE BEF WITH LOCKING ROD ( ITEM NO. : 20 )	2						
	PRE STRESSED NON RETURN VALVE 80 BORE ( ITEM NO. 23 ) ctr make	1						
	AIR RELEASE VALVE GUN METAL GLOBE ON MAIN CONSERVATOR 25 BORE BEF LOCKING ROD ( ITEM NO. : 31 )	1						
	CONSERVATOR DRAIN CUM FILLING VALVE GUN METAL GLOBE 25 BORE BEF WITH LOCKING ROD ( ITEM NO. : 32 )	1						
	VALVE FOR OIL SAMPLE REMOVAL FROM CONSERVATOR GUN METAL GLOBE 25 BORE BEF WITH LOCKING ROD ( ITEM NO. : 35 )	1						
	VALVE FOR AIR RELEASE FROM TANK GUN METAL GLOBE 25 BORE BEF WITH LOCKING ROD ( ITEM NO. : 36 )	1						
	ISOLATING VALVE FOR RADIATOR HEADER GUN METAL GATE 150 BORE BEF WITH LOCKING ROD ( ITEM NO. : 52 )	4						
	RADIATOR HEADER DRAIN CUM FILTER VALVE GUN METAL GLOBE 25 BORE BEF WITH LOCKING ROD ( ITEM NO. : 55 )	2						
	ISOLATING VALVE 80 BORE BUTTERFLY FOR PNRV	1						
BOX 10	<b>ERRECTION GASKET ( SRBC )</b>	<b>1 SET</b>	1250	1250	600	410	70	
	GASKETS FOR HV LINE BUSHINGS 245 KV , 1250 AMPS.	3						
	GASKETS FOR NEUTRAL BUSHINGS 72.5 KV , 800 AMPS.	3						
	GASKET FOR MOLG 250 MM DIAL	1						
	GASKET FOR PRV WITH BEND PIPE ( 2 SETS )	4						
	GASKET FOR BOCHHOLZ RELAY ATVAS	2						
	GASKET FOR 80 DIA PIPE	10						
	GASKET FOR 25 DIA PIPE	10						
	MAIN COSERVATOR INSPECTION COVER	1						
	GASKET FOR RADIATOR HEADER	4						
	GASKET FOR HEADER CONNECTING PIPE	8						
	GASKET FOR 80 BORE GUN METAL VALVE FOR B/RELAY	5						
	GASKET FOR 80 M.M. BUTTERFLY ISOLATING VALVES FOR RADIATORS	15						
	GASKET FOR VALVES 150 MM (10), 80 M.M. (1), 50 M.M (2) , 25 M.M (10),15 MM (2)	25						
	GASKET FOR PNRV	2						
	GASKET FOR SPR & ADOPTER	2						
	GASKET FOR F – 75 BORE BUTTERFLY VALVE	2						
	SRBC GASKET SHEET 6 M.M. THK. ( 900 x 900 )	2						
	SRBC GASKET SHEET 10 M.M.THK. ( 900 x 900 )	1						
	NYLON WASHER	10						
	NITRILE O RING FOR 25 MM PIPE	20						
	NITRILE O RING FOR 80 MM PIPE	10						
	NITRILE O RING FOR 150 MM PIPE	15						
	<b>NITRILE CORD FOR HV &amp; NEUTRAL INSPECTION COVERS ( 6 ), MAN HOLES IN TANK COVER &amp; BODY ( 3 ) AND TURRETS ( 6. ) :</b>							
	8 MM DIA CORD	15 MTRS.						
	10 MM DIA CORD	25 MTRS..						
	ADHESIVE ( LOCKTITE )	2						
BOX 11	TOUCH - UP PAINT PU SHADE : RAL 7032	24 LITR	4620	550	700	730	410	
	RADIATOR TIE BARS 40 MM X 10 THK X 830	4						
	RADIATOR TIE BARS 40 MM X 10 THK X 780	4						
	RADIATOR VALVE OPERATING HANDLE	2						
	FOUNDATION BOLT M 24 X 3.0 X 380 MM LONG HOT DIP GALVANISED	20						
	FOUNDATION BOLT M 16 X 2.0 X 280 MM LONG HOT DIP GALVANISED	4						
	BIMETALIC CONNECTOR FOR HV BSG. DRG. NO. : A3 30349	3						
	BIMETALIC CONNECTOR FOR HV NEU. BSG. Item 59	3						

	GAS COLLECTING DEVICE WITH 10 MTR. COPPER TUBE FOR BUCHHOLZ RELAY	1 SET						
	<b>NEUTRAL BUSHING TO SURGE ARRESTOR &amp; SURGE ARRESTOR TO GROUND EARTHING BUSBAR &amp; FLEXIBLES AS PER DRG. NO. : A2 20005 REV ' 02</b>							
	COPPER FLAT 75 MM X 10 MM X 4430 MM LONG	1						
	COPPER FLEXIBLE 75 MM X 0.3 THK X 33 IN // X 1390 MM DEV. LENGTH OF EACH	1						
	COPPER FLAT 75 MM X 10 MM X 1560 MM DEV. LENGTH	1						
	COPPER FLAT 75 MM X 10 MM X 2450 MM LONG	1						
	CONNECTING LUG SUITABLE FOR 72.5 KV 800 A BSG TO DRG NO. A4 25667	3						
	COPPER FLAT 75 MM X 10 MM X 332 MM DEV LONG	2						
	COPPER FLAT 75 MM X 10 MM X 260 MM LONG	1						
BOX 12	BUCHHOLZ RELAY PIPE CONNECTION ( PART NO. 201 TO 205 ) 206 also required	6	3150	1250	800	1090	570	
	EQUALISER PIPE CONNECTION ( PART NO. : 210 TO 220 )	11						
	FROM TANK AIR RELEASE VALVE PIPE & IT'S SUPPORT WITH U CLAMP FITTED ( PART NO. : 221 , 222 )	2						
	BREATHER , AIR RELEASE & DRAIN PIPES ( PART NO. : 225 TO 236 ) & IT'S SUPPORT WITH U CLAMP FITTED ( PT NO. : 237 TO 240 )	16						
	PRV BEND PIPES ( PART NO. : 246 , 247 )	2						
	TOP COOLER PIPES ( PT NO. 263 , 264 )	2						
	REACTOR MOUNTING BRACKET ( PT NO. 280 TO 283 )	4						
	POST INSULATOR FIXING BRACKETS ( 286 , 287 , 288 )	3						
BOX 13	MARSHALLING BOX.	1	1250	750	2250	580	190	
BOX 14	RADIATOR WITH LIFTS AIR RELEASE & DRAIN PLUGS 520 MM X 2500 XCRS. X 24 ELEMENTS	2	2900	1500	1350	1900	1300	
BOX 15	RADIATOR WITH LIFTS AIR RELEASE & DRAIN PLUGS 520 MM X 2500 XCRS. X 24 ELEMENTS	2	2900	1500	1350	1900	1300	
BOX 16	RADIATOR WITH LIFTS AIR RELEASE & DRAIN PLUGS 520 MM X 2500 XCRS. X 24 ELEMENTS	1	2900	1500	800	1250	650	
BOX 17	LADDER WITH ANTI CLIMBING ARRANGEMENT ( PT NO. : 250 )	1	3750	600	770	450	35	
BOX 18	280 DIA BI DIRECTIONAL ROLLARS SINGLE ( ITEM NO. : 39 )	4	1750	650	780	1160	800	
BOX 19	CONSERVATOR SUPPORT ( PT NO. : 241, 242 )	2	4500	1250	900	1530	970	
BOX 20	TOP & BOTTOM RADIATOR HEADER ( PART NO. 255 , 256 ) WITH LIFT,THERMOMETER POCKET,AIR RELEASE PLUG, RADIATOR ISOLATING SQUARE BUTTERFLY VALVE 80 BORE BORE 5 NOS. IN EACH HEADER	2	3650	1400	650	1280	540	
BOX 21	TOP & BOTTOM RADIATOR HEADER SUPPORT ( PART NO. : 257 TO 260 )	4	1250	850	1100	500	170	
BOX 22	HV BUSHING TURRETS ( PART NO. 268 TO 270 ) WITH CT & CT TERMINAL BOX	3	2750	1050	1150	1380	750	
BOX 23	NEUTRAL BUSHING TURRETS ( PART NO. : 271 TO 273 ) WITH 1 NO. INSPECTION COVER & CT WITH CT TERMINAL BOX	3	2220	1000	1150	930	600	
BOX 24	SURGE ARRESTOR MOUNTING BRACKET ( PART NO. : 285 )	1	1000	900	650	380	105	
BOX 25	MAIN CONSERVATOR WITH LIFTS, AREVA MONOGRAM PLATE ,PRISMATIC OIL LEVEL GAUGE & FLEXIBLE SEPARATOR FITTED INSIDE	1	4050	1650	1800	2350	1280	
BOX 26	SURGE ARRESTORS	1 SET	1150	550	600	400	120	
-	TRANSFORMER OIL TO BE DESPATCH IN TERMS OF NO. OF DRUMS (CONTAINING 209 LITERS IN EACH DRUM ) = 25916 LITRES INCLUDING SPARE OIL	<b>124 DRUMS</b>	1150	1150	1020	786	760	

Another lot of Transformer oil to be dispatch separately for Dichoto substation containing 4kl oil in 20nos drums of 209litre each (the items may be loose drums

**Note - Weight & Dimension of oil is given in table is of 1 Pallet.**

Unconditionally accepted



Signature of Vendor

Official Stamp



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DESCRIPTIONS OF FITTINGS										
A	PT. NOS.		DESCRIPTIONS	DRG.NO.	QTY.	PT. NOS.	DESCRIPTIONS	DRG.NO.	QTY.	A
	FIX.	REM.								
	1		AREVA MONOGRAM PLATE		3	51	LOCKING ARRANGEMENT ACTIVE PART TO COVER		3SETS	
	2		COMBINED RATING AND DIAGRAM PLATE	A119951	1	52	ISOLATING VALVES FOR RADIATOR HEADERS 150 BORE (GATE)		4	
	3		STORAGE INSTRUCTION PLATE		1	53	TOP RADIATOR HEADER WITH LIFT, THERMOMETER POCKET AND AIR RELEASE PLUG.		2	
	4		VALVE SCHEDULE PLATE	A119956	1					
	5		LIFTING BOLLARDS		4	54	BOTTOM RADIATOR HEADER WITH LIFT, THERMOMETER POCKET AND AIR RELEASE PLUG.		2	
	6		JACKING PADS		4					
	7		EARTHING PAD		2	55	RADIATOR HEADER DRAIN CUM FILTER VALVE. 25-BORE BEF (GLOBE)		2	
	8		LASHING LUG		8	56	MARSHALLING BOX WITH INSTRUMENTS & TEMPERATURE INDICATORS	A329380	1	
B	9		HAULAGE LUGS		8	57	OIL TEMPERATURE INDICATOR		1	
	10		HV LINE BUSHINGS 245kV 1250A BHEL/AREVA MAKE	A329378	3	58	WINDING TEMPERATURE INDICATOR		1	B
	11		HV NEUTRAL BUSHINGS 72.5kV,800A BHEL/AREVA MAKE	A329379	3	59	CONNECTOR FOR NEUTRAL BUSHINGS		3	
	12		CT TERMINAL BOX FOR H.V.& HVN		7	60	SHORTING ARRANGEMENT OF NEUTRAL & CONNECTION WITH L.A.		1 SET	
	13		VAPOUR PHASE DRAIN PLUG		1	61	LIGHTENING ARRESTOR FOR NEUTRAL BUSHINGS		1 SET	
	14		DRAIN VALVE 80 BORE BEF (GATE)		1	62	EARTHING OF LIGHTENING ARRESTOR. WITH POST INSULATORS		1 SET	
	15		BOTTOM FILTER VALVE 50 BORE BEF (GATE)		1					
	16		TOP FILTER VALVE (50 BORE BEF) (GATE)		1	63	IMPACT RECORDER		1 SET	
	17		TOP SAMPLING VALVE (15 BORE BEF) (GLOBE)		1	64	FLEXIBLE SEPARATOR		1 SET	
	18		BOTTOM SAMPLING VALVE (15 BORE BEF) (GLOBE)		1	65	BIMETALLIC CONNECTOR FOR HV BUSHINGS		3 SETS	C
C	19		PRESSURE RELIEF DEVICE		2					
	20		CONSERVATOR SHUT OFF VALVE (80 BORE) (GATE)		2					
	21		BUCHHOLZ RELAY 80 BORE - DOUBLE FLOAT 'ATVUS' MAKE		1					
	22		GAS COLLECTING DEVICE FOR BUCHHOLZ RELAY.		1					
	23		NON RETURN VALVE (80 BORE)		1					
	24		BUSHING FOR CORE EARTHING WITH EARTHING LINK.		1 SET					
	25		ACCESS FOR EARTHING		1					
	26		RADIATORS WITH LIFTS,AIR RELEASE & DRAIN PLUGS		5					
	27		RADIATOR ISOLATING VALVE-80BORE(TOP & BOTTOM)BUTTERFLY		10					
D	28		OFF CIRCUIT SWITCH		1					
	29		CONSERVATOR WITH LIFTS		1					
	30		SILICAGEL BREATHER FOR CONSERVATOR		1					
	31		AIR RELEASE VALVE FOR MAIN CONSERVATOR:25 BORE BEF(GLOBE)		1					
	32		CONSERVATOR DRAIN CUM FILLING VALVE (25 BORE BEF)(GLOBE)		1					
	33		250 DIAL MOLG FOR CONSERVATOR		1					
	34		PRISMATIC OIL LEVEL GAUGE FOR MAIN CONSERVATOR		3					
	35		VALVE FOR OIL SAMPLE REMOVAL FROM CONSERVATOR (25 BORE BEF)(GLOBE)		1					
	36		VALVE FOR AIR RELEASE FROM TANK (25 BORE BEF) (GLOBE)		1					
E	37		AIR RELEASE PLUG		1					
	38		EARTHING LINK		2					
	39		280ø BIDIRECTIONAL ROLLER SINGLE		4SETS					
	40		REACTOR LOCKING BRACKETS WITH PLINTH		4SETS					
	41		LADDER WITH ANTI-CLIMBING ARRANGEMENT		1					
	42		INSPECTION COVER FOR HV LINE BUSHINGS		3					
	43		INSPECTION COVER FOR HV NEUTRAL BUSHINGS		3					
	44		MAN HOLE ON TRANSFORMER TANK		1					
	45		INSPECTION COVER FOR OCTC		1					
	46		INSPECTION OPENING WITH A COVER ON THE TOP COVER		1					
F	47		NITROGEN CYLLINDER WITH PRESSURE GAUGE FOR TRANSPORT		1SET					
	48		BATH FOR THERMOMETRE POCKET		2					
	49		BATH FOR OTI		1					
	50		BATH FOR WTI		1					

00	11-11-07	P.S.	T.S.	M.V.K.	Original Issue
Rev	Date	Draw	Chk.	App.	Description
General tolerances: ISO 2768		Surface texture: ISO 1302		All dimensions in millimetres unless otherwise stated	
 <p><b>AREVA</b> TRANSMISSION &amp; DISTRIBUTION Power Transformers, High Voltage Products</p>			<b>IF IN DOUBT - PLEASE ASK !</b>		
			Project BHEL A/C ETHIOPIAN ELECTRIC POWER CORPORATION Combolcha-Semera-Dichoto 230kV Power, Transmission project, contract CSD-1 PO No.: 4578151. Dated: 26.09.2007	Filename 670700597	
Title LIST OF FITTINGS FOR 15 MVAR , 230 kV ,SHUNT REACTOR			Scale		
AREVA T&D INDIA Limited Naini Works , Allahabad - 211008 ( U.P. )			Drawing n°	Sheet n°	Total
			A329409	1	1
					Size <b>A3</b>