

## **SECTION - 1**

### **SCOPE, SPECIFIC TECHNICAL REQUIREMENTS & QUANTITIES**

#### **1.0 SCOPE & GENERAL INFORMATION**

The scope of work under this specification is system design (excluding tower design & testing), supply, civil works, erection testing and commissioning of **220kV D/C Transmission line between 400/220kV switchyard at North Karanpura STPP & 220kV substation at Chatti Bariatu & Kerandari-A mine** along with associated equipment & accessories on turnkey basis. Approximate length of the line is 9.4 Km (Switchyard gantry to gantry),

The 220kV double circuit transmission line equipment is required for the following project:

Name of customer : NTPC Ltd

Name of the project : North Karanpura Super TPP (3x660MW)

#### **1.1 SYSTEM DESIGN**

The works shall generally include, *but not limited to*, following:

##### **1.1.1 Design - General**

- (i) Preparation & submission of transmission line system drawings/ design documents like, stringing charts, erection key diagram, BOM of all stringing materials (conductor, earth wire/OPGW along with accessories, stringing hardware, disc insulators etc), Erection Key Diagram plan & sections etc along with any other drawing/document required by customer/BHEL and getting approval from customer/BHEL for design drawings/documents
- (ii) Submission of drawings, test reports & quality plans of supply items like conductor, earth wire, clamps & connectors, conductor accessories & earth wire accessories, earthing materials etc.
- (iii) Getting approval from customer/BHEL for all design drawing and documents required for the successful completion of job prior to the execution of work.
- (iv) Submission of drawing/document, Quality Plans, inspection reports in soft copies and hard copies (03sets) at each stage for customer/BHEL use. Transmission line documentation as per NTPC requirement is attached as Annexure II. Bidder to note that this is minimum documentation and any other drawing/ document required by BHEL/ NTPC shall be submitted

### 1.1.2 Design of 220kV Towers

- (i) **BHEL shall provide following drawings/documents** - Structural drawing of normal 220kV transmission line towers along with extensions, bill of material (BOM) including extension, drawing of foundation of towers including extension (max. 8 nos. per tower i.e. for soil type – Dry, Wet, partially submerged, fully submerged, dry fissured rock, wet fissured rock, wet black cotton & submerged Fissured rock) and foundation loads, stub setting templates, sag tension calculation, sag templates drawing, tower spotting data.

### 1.1.3 Supply

- (i) Supply of 220kV Transmission Line towers including extensions, bolts and nuts, stub setting template including all tower accessories (phase plate, caution plate, number plate, circuit plate, anti climbing device, bird guard, aviation signal etc).
- (ii) Supply of ACSR zebra conductor as per NTPC/ BHEL specification.
- (iii) Supply of conductor accessories - Vibration dampers, Clamps (tension, suspension, cleat), Preformed armour rod, Mid span compression joint, Repair sleeves, rigid & flexible spacers etc to complete.
- (iv) Supply of earthing materials - Earthing materials includes electrodes and counterpoise type earthing for all type of towers.
- (v) BHEL / customer / third party shall inspect equipment / material before dispatch. Stage inspection during manufacturing may also be carried out. Material shall be dispatched only after getting dispatch clearance from BHEL. Supplier shall send inspection call on prescribed format (web site) only, with an advance notice of 15 days.
- (vi) Make of items should have NTPC/ BHEL approval before supply. Bidder should consider NTPC approved make of all supply items (**NTPC approved vendor list for this project is enclosed as Annexure- I**). In case the offered make is not approved by NTPC/ BHEL, bidder has to submit required documents for getting the sub-vendor approval of alternate make components without any commercial/ time of delivery implication to NTPC/ BHEL.
- (vii) The materials shall conform to all the type tests as per relevant standards and NTPC/ BHEL specification. The acceptance, routine tests and tests during manufacture shall be carried out on the line materials as per relevant standards & customer technical specification.

**1.1.4 Services – Civil works & ETC**

- (i) Providing stringing charts, rigging charts, FQP for erection and other details as required for civil works & erection including stringing of all lines.
- (ii) Technical support and revision of documents including recheck survey as and when required during the execution of the transmission line contract till completion of work.
- (iii) Civil work for 220kV transmission line tower foundation including excavation including dewatering, shoring, strutting, and filling under and around structures, backfilling with suitable available excavated earth around completed structures, disposal of surplus soil, backfilling, formwork, providing necessary steel embedment and other setting of template, stub fixing including supply of all material, labour etc. complete as per approved drawing.
- (iv) Erection of 220kV Transmission Line towers including extensions, bolts and nuts, stub setting template including all tower accessories (phase plate, caution plate, number plate, circuit plate, anti climbing device, bird guard, aviation signal etc).
- (v) Complete erection of 220kV double circuit transmission line including erection of tower, stringing of conductor, ground wire and their accessories, earthing of tower, insulator hoisting, String hardware, OPGW etc. for successful commissioning of line.
- (vi) Erection of OPGW & its accessories includes – erection of OPGW cable on towers, installation of Indoor-type, Rack-mounted, 12F Fibre Optic Distribution Panel (FODP) including pigtailed and FCPC coupling, erection of clamps for OPGW (tension, suspension, PG, grounding clamps etc.), erection of vibration dampers, flexible copper bonds with clamps, armor rods, x way joint boxes, laying of approach cable along with installation of hardware set including ties/clips/cleats, conduits, ducts, supports, fittings, accessories etc.
- (vii) Tack welding of bolts & nuts along with supply & subsequent application of zinc coating on the welded portion as required.
- (viii) Tree/ bush enumeration & cutting etc. as required for line work shall be as per customer specification.
- (ix) Bidder may note that (NTPC/BHEL) shall not pay any compensation for any damage or loss of material including the free issue items during storage, transportation & erection work. Further, any other loss or damage to the properties during work of execution of transmission line job or for tree cutting due to bidder's work shall not be compensated by NTPC/BHEL.
- (x) All equipment, tools-tackles shall be organized by contractor
- (xi) Obtaining clearance from electrical inspector & submitting any relevant drawing/document shall be responsibility of bidder.

### 1.1.5 Exclusions

- (i) **Free issue items-** The following items shall be free issued to the successful bidder. Bidder shall estimate the quantity required for successful completion of the full scope of works and furnish the breakup of quantity of all these items. BHEL shall handover these free issue items to bidder at North Karanpura site. Thereafter their storage, handling, loading, unloading, transportation from storage yard upto required locations & local storage shall be in the scope of the bidder.
  - Insulators with stringing hardware for 220kV line.
  - OPGW along with its accessories
- (ii) 220kV tower and foundation design as per cl. No. 1.1.2 (i).
- (iii) Right of way and way leave clearance is not in Bidder's scope. However necessary document/drawings required for right of way and way leave clearances shall be submitted by bidder to NTPC/BHEL. Bidder shall also facilitate in getting such clearances.

**Notes: -**

- (i) Any other work/ supply required for the successful commissioning of 220kV Transmission Line

### 1.2 SPECIFIC TECHNICAL REQUIREMENT

The specific technical requirements for the execution of transmission line works shall be as per NTPC/BHEL Specifications and the relevant standard IS/IEC/CBIP Manual/IEEE.

Refer Section 2 for NTPC specification of 220kV Transmission Line & BHEL specification for lattice structure supply

Refer Section 3 for Project Details and general specification.

### 1.3 TECHNICAL QUALIFYING REQUIREMENTS

Please refer pre-qualifying requirement of NIT

### 1.4 BILL OF QUANTITY

The distance between North Karanpura STPP & 220KV substation at Chatti Bariatu & Kerandari-A mine end (gantry to gantry) may be considered as approx. 9.4 km for bidding purpose.

Tentative BOQ for transmission line is enclosed as Annexure-A & bidder has to provide price against each item of BOQ. However, payment will be done on actual executed quantity. Quantity of any item may vary upto any extent but the overall contract value may vary by  $\pm 30\%$ .

**PROJECT: North Karanpura Super TPP (3x660MW)**  
**CUSTOMER: NTPC LTD.**

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**Technical Specification of 220 kV Double Circuit Transmission Line**  
**Section-1: Scope, Specific Technical Requirements & Quantities**

**TB-316-369-031TL**  
**REV.02**

Any item(s)/ work(s) not covered specifically in the following BOQ but is(are) required for successful completion of transmission line shall be deemed to be included in the package.

## **1.5 METHOD OF MEASUREMENT :**

Excavation shall be measured in cubic meters. The lateral dimensions to be considered for working out excavation quantity shall be the PCC dimension below the footing as per approved drawing. Nothing extra shall be paid for slope cutting, etc. Backfilling & disposal quantities shall be worked out based on the above dimensions only.

For other items, unless otherwise described the method of measurement as described in 'Method of Measurement of Building and Civil Engineering Works'-IS 1200(Part I to XXV) latest edition of BIS shall be followed.



Annexure -I LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL											DOC.NO :4410-001-QOE-R-00 REV.NO. : 0	
AND SUB-SUPPLIER APPROVAL											DATE :11.12.2013 PAGE : 2 OF 8	
S.N.	Item Description	QP/ Insp. Cat	QP # 4410- 001-QVE- Q-	QP Sub. Schedule	QP Approval Schedule	Proposed sub-supplier	Place	Sub- supplier approval status / cat	Sub- supplier Details submission schedule	Remark		
7	BUS POST INSULATOR	I	070			MODERN INSULATOR IEC ADITYA BIRLA SARAVANA GLOBAL ENERGY	ABU ROAD BHOPAL HALOL CUDDALORE	A A A A				
8	CLAMPS & CONNECTORS & WELDING SLEEVES	II	080			KLEMMEN ENGG MILIND EMTT RASHTRIYA UDYOG PEE VEE ENGG EXALT ENGINEERING INDUSTRIES MEGHA ENGG	CHENNAI MUMBAI KOLKATA KOLKATA BANGALORE MUMBAI CHENNAI	A A A A A A A				
9	ACDB / DCDB (Fixed Type)	I	090				CHENNAI	A		Refer Switchgear List		
10	INSULATOR HARDWARE, CONDUCTOR ACCESSORIES & EARTHWIRE ACCESSORIES	II	100			RASHTRA UDYOG IAC ELECTRICAL ITPL KLEMENN ENGINEERING NUTAN ENGG TAG CORPORATION EMTT EMI	KOLKATA KOLKATA MUMBAI CHENNAI MUMBAI CHENNAI KOLKATA MUMBAI	A A A A A A A A				
11	BMK'S/ JB'S (ALL TYPES) / LIGHTING PANELS	II	110							Refer Switchgear List		
12	DISC INSULATOR	I	120			IEC ADITYA BIRLA WSI IMPERIAL CERAMICS MODERN INSULATOR BHEL	BHOPAL RISHRA (W.B.) CHENNAI BIKANER ABU ROAD BANGALORE	A A A A/DR A A		DR- FOR ABOVE 90KN		



Project : NORTH KARANPURA Package : EPC Pkg (440/220kV Switchyard Package, GT, ST, UT, Auxillary Transformer, IPBD and SPBD) Supplier : BHEL Contract No.: CS-4410-001-2		Annexure - I LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL						DOC NO :4410-001-QOE-R-00 REV.NO.: 0 DATE : 11.12.2013 PAGE : 3 OF 8		
S.N.	Item Description	QP/ Insp. Cat	QP # 4410- 001-QVE- Q-	QP Sub. Schedule	QP Approval Schedule	Proposed sub-supplier	Place	Sub- supplier approval status / cat	Sub- supplier Details submission schedule	Remark
13	GS FLAT/ 40MM DIA M.S. ROD/ M.S EARTH RODS /U CLAMP/ GI EARTH PIPE / GI PIPE / GI CONDUIT (INCLUDING BENDS) / PVC PIPES	III	*			MAIN CONTRACTOR APPROVED SOURCES		A		
14	ALUMINIUM TUBE	I	130			HINDALCO INDALCO JINDAL ALUMINUM TUBE ALOM EXTRUSIONS BALCO SUDAL	RENUKUT ALUPURAM BANGALORE KOLKATA KORBA NASIK	A A A A A A		
15	CABLE TRAY, BENDS, COUPLER PLATES	III	*							Refer Cable tray List
16	ACSR CONDUCTOR	I	140			HINDUSTAN VIDYUT PRODUCTS DIAMOND POWER HIREN ALUMINIUM JSK INDUSTRIES HIRA CABLES SHARAVATHY CONDUCTORS	FARIDABAD  VADODARA SILVASSA SILVASSA HIRAKUD BANGALORE	A  A A A A A		
17	GS EARTHWIRE / LIGHTING WIRE	III	*			MAIN CONTRACTOR APPROVED SOURCES				
18	CABLE GLANDS	III	*							Refer Cabling List
19	1.1KV GRADE POWER AND CONTROL CABLES	I	150							Refer Cabling List
20	CABLE LUGS	III	*							Refer Cabling List
21	LIGHTING FIXTURES & LUMINARIES	III	*							Refer Station Lighting list
22	LIGHTING POLE	III	*			BIS approved Vendors as per IS-2713*				*Vendor should have valid BIS licence.
23	INDUSTRIAL RECEPTACLES	III								Refer Cabling List



Annexure - I										
LIST OF ITEMS REQUIRING QUALITY PLAN										
AND SUB-SUPPLIER APPROVAL										
S.N.	Item Description	QI/ Insp. Cat	QP # 4410- 001-QVE- Q-	QP Sub. Schedule	QP Approval Schedule	Proposed sub-supplier	Place	Sub- supplier approval status / cat	Sub- supplier Details submission schedule	Remark
24	LEAKAGE CURRENT ANALYSER	III	*			ISA PGK ELECTRONICS DOBLE TRANSINOR SCOPE T&M	ITALY CHENNAI USA NORWAY PUNE	NOTED NOTED NOTED NOTED NOTED		
25	PANELS FOR MOUNTING SAS COMPONENTS Like BCU/ Numerical relays / DR / Energy meter / TSE etc.  (Item subject to Sub QR approval)	I	160			ALSTOM SIEMENS PYROTECH ABB  SCHNEIDER	CHENNAI KALWA UDAIPUR PEENYA  NOIDA	A A A A  A		Panel Fabrication only Fabrication from M/s PCP and Powder coating from NTPC approved sources.
26	Sub-Station Automation System  (Item subject to Sub QR approval)	I	160			ALSTOM ABB BHEL SCHNEIDER SIEMENS	CHENNAI PEENYA BHOPAL Noida KALWA	A A DR A A		
27	COMPONENTS FOR Substation Automation System (Item subject to Sub QR approval)		*							
a	BAY CONTROL UNIT	*				ABB  SCHNEIDER ALSTOM SIEMENS	FINLAND / PEENYA FRANCE UK / FRANCE GERMANY	A  A A A		
b	ENERGY METER	* * *				ELSTER SEMS LANDIS & GYR SCHNEIDER	MUMBAI UDAIPUR SWITZERLAND NOIDA	A A A DR		

Project : NORTH KARANPURA		Annexure - I					DOC.NO :4410-001-QQE-R-00			
Package : EPC Pkg (440/220kV Switchyard		LIST OF ITEMS REQUIRING QUALITY PLAN					REV.NO.: 0			
Package, GT, ST,UT, Auxillary Transformer, IPBD and SPBD)							DATE : 11.12.2013			
Supplier : BHEL		AND SUB-SUPPLIER APPROVAL					PAGE : 5 OF 8			
Contract No.: CS-4410-001-2										
S.N.	Item Description	QP/ Insp. Cat	QP # 4410-001-QVE-Q-	QP Sub. Schedule	QP Approval Schedule	Proposed sub-supplier	Place	Sub-supplier approval status / cat	Sub-supplier Details submission schedule	Remark
c	TRANSDUCER	*				SITU	MUMBAI	A		
		*				AUTOMATIC ELECTRIC RISHAB	MUMBAI	A		
d	LAPTOP	*				ELSTER (FORMERLY) ABB	MUMBAI	A		
e	VDU (TFT) MONITOR FOR WORK STATIONS	*				DELL / IBM / COMPAQ / HP		NOTED		
		*				DELL / IBM / COMPAQ / HP		NOTED		
f	STATION HMI	*				IBM / ADVANTECH		NOTED		
	COMPUTER/OWS / EWS	*								
g	LASER PRINTER	*				HP / CANON		NOTED		
h	DOT MATRIX PRINTER	*				TBSF / WIPRO / LIPI		NOTED		
i	LAN SWITCHES	*				CISCO/D-LINK/3-COM		NOTED		
j	FIBRE OPTIC CABLE	*				BIRLA ERICSSON	REVA	A		
		*				FINOLEX	PUNE	A		
		*				AKSH OPTIC FIBRE	BHIWARI	A		
k	UPS FOR PC	*				DB / HIREL / 3EL / APC	INDIA	NOTED		
l	LARGE VIDEO SCREEN	*				BARCO	INDIA/ GERMANY			
		*				PLANAR	INDIA/ USA			
		*				DELTA	INDIA/ CHINA			
m	FURNITURE FOR HMI & PRINTER	*				REPUTED SOURCES				
n	GATEWAY	*				DELL / IBM	USA	NOTED		
o	MODEMS	*				AREVA / NOMUS/ABB/BPL	INDIA /	NOTED		
p	RELAY TEST KIT	*				OMICRON	USA/AUSTRALIA	A		
		*				DOBLE	USA	DR		
		*				SCOPE T & M	PUNE	A		
q	TIME SYNCHRONISING EQPT.	*				SERTEL	MUMBAI	A		
		*				SIEMENS	GERMANY	A		
		*				HATHWAY	U.K/USA	A		
		*				HOPF	GERMANY	A		
		*				ARBITER	USA	A		

Annexure - I										DOC.NO. :4410-001-QOE-R-00	
LIST OF ITEMS REQUIRING QUALITY PLAN										REV.NO. : 0	
AND SUB-SUPPLIER APPROVAL										DATE : 11.12.2013	
										PAGE : 6 OF 8	
S.N.	Item Description	QP/ Insp. Cat	QP # 4410- 001-QVE- Q-	QP Sub. Schedule	QP Approval Schedule	Proposed sub-supplier	Place	Sub- supplier approval status / cat	Sub- supplier Details submission schedule	Remark	
r	DISTURBANCE RECORDER	*				ABB ALSTOM SIEMENS HATHWAY	FINLAND FRANCE/UK GERMANY UK	A A A A			
s	ETHERNET SWITCH	*				HIRSCHMANN GARETTCOM RUGGEDCOM	GERMANY USA CANADA	NOTED NOTED NOTED			
t	NUMERICAL RELAYS	*				ABB SCHNEIDER ALSTOM SIEMENS	FINLAND FRANCE UK / FRANCE GERMANY	A A A A			
u	RELAYS OTHER THAN NUMERICAL RELAYS	*				ALSTOM EASUN REYROLLE ABB	CHENNAI HOSUR BANGALORE	A DR A			
v	INDICATING INSTRUMENTS	*				RISHAB MECO AUTOMATIC ELECTRIC IMP	NASIK/MUMBAI MUMBAI MUMBAI MUMBAI	A A A A			
28	SF6 GAS FILLING AND EVACUATING PLANT, GAS RECYCLING & PURIFYING PLANT, GAS LEAKAGE DETECTOR	III				ENERVAC DILO VACCUUM PLANT INDUSTRIES AI QUALITEK	CANADA GERMANY PUNE USA	NOTED NOTED NOTED NOTED			
29	OPERATION ANALYSER WITH DCRM KIT	III				SCOPE T & M MEGGER HATHAWAY TECH IMP SYSTEM GE VIC	PUNE UK USA ITALY SWEDEN USA	A DR DR DR NOTED NOTED			

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Annexure - I										
LIST OF ITEMS REQUIRING QUALITY PLAN										
AND SUB-SUPPLIER APPROVAL										
Project : NORTH KARANPURA										
Package : EPC Pkg (440/220kV Switchyard										
Package, GT, ST, UT, Auxiliary Transformer, IPBD and										
SPBD)										
Supplier : BHEL										
Contract No.: CS-4410-001-2										
S.N.	Item Description	QP/ Insp. Cat	QP # 4410- 001-QVE- Q-	QP Sub. Schedule	QP Approval Schedule	Proposed sub-supplier	Place	Sub- supplier approval status / cat	Sub- supplier Details submission schedule	Remark
30	BAY IDENTIFICATION TAGS, PHASE MARKERS & DANGER PLATES	III				MAIN CONTRACTOR APPROVED SOURCES		A		
31	PIANO SWITCHES	III				BIS APPROVED SOURCES				
32	BATTERY (Ni-Cd/Lead acid)	I	180							Refer the Switchgear List
33	BATTERY CHARGER	I	190							Refer the Switchgear List
34	LT SWITCHGEAR	I	200							Refer the Switchgear List
35	FQP Switchyard Equipments	I	4410-001- QVE-G- 010			Switchyard Contractor				
36	GENERATOR TRANSFORMER L1 Level Vendor (Refer Note 4)	I	210			BHEL	BHOPAL	A		
37	STATION TRANSFORMER / UNIT TRANSFORMER L1 Level Vendor (Refer Note 4)	I	220			ALSTOM ABB SIEMENS BHEL CGL EMCO	ALLAHABAD VADODARA NAVI MUMBAI BHOPAL KANJUR MARG THANE	A A A A A A		



Project : NORTH KARANPURA Package : EPC Pkg (440/220KV Switchyard Package, GT, ST, UT, Auxiliary Transformer, IPBD and SPBD) Supplier : BHEL Contract No.: CS-4410-001-2				Annexure - I LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL				DOC NO.: 4410-001-QOE-R-00 REV. NO.: 0 DATE : 11.12.2013 PAGE : 8 OF 8		
S.N.	Item Description	QP/ Insp. Cat	QP # 4410- 001-QVE- Q-	QP Sub. Schedule	QP Approval Schedule	Proposed sub-supplier	Place	Sub- supplier approval status / cat	Sub- supplier Details submission schedule	Remark
38	AUX TRANSFORMER (L1 Level Vendor (Refer Note 4))	I	230			ALSTOM ABB BHEL  SCHNEIDER SIEMENS PETE-HAMMOND POWER SOLUTION  TESLA TRNSFORMERS  VIJAI ELECTRICALS LTD VOLTAMP TRANSFORMERS LTD  EMCO BHEL  BHEL	ALLAHABAD VADODARA BHOPAL/ BHOPAL/ JHANSI VADODARA NAVI MUMBAI MEDAK  BHOPAL MEDAK VADODARA THANE RUDRAPUR RUDRAPUR	A A A  A A   DR  A A A		UPTO 33KV OIL FILLED, UPTO 11KV DRY UPTO 2 MVA, 11KV CLASS UPTO 33KV UPTO 3.5 MVA, 33KV CLASS
39	IPBD (L1 Level Vendor (Refer Note 4))	I	240							
40	SPBD (L1 Level Vendor (Refer Note 4))		250							

**1. SYSTEM SUPPLIERS/SUB-SUPPLIERS APPROVAL STATUS CATEGORY (SHALL BE FILLED BY NTPC)**  
A-For this items proposed vendor is acceptable to NTPC. To be indicated with letter "A" in the list along with condition of approval, if any  
DR-For these items "Detailed" required for NTPC review. To be identified with letter "DR" in the list.  
**NOTED:** For these items vendors are approved by Main Supplier & accepted by NTPC without specific vendor approval from NTPC. To be identified with "NOTED".

**2. QP / INSPN CATEGORY**  
CAT-I: For these items the Quality Plans approved by NTPC & final acceptance will be on physical inspection witness by NTPC  
CAT-II: For these items the Quality Plans approved by NTPC. However no physical inspection shall be done by NTPC. The final acceptance by NTPC shall be on basis of documents as per approved QP  
CAT-III: For these items Main supplier approves the Quality Plans. The final acceptance by NTPC shall be on basis of certificate of conformance by the main supplier.  
Control measure of item covered in quality plan of main item.

**3. UNITS/WORKS :** Place of manufacturing/ Place of Main Supplier of multi units/works.

**4. Comprehensive L-2 list of sub-vendors** shall be finalized with the finally selected L-1 vendor but prior to order finalization on L-1 vendor by the Bidder. Item Subjected to Sub-QR clearance

**EPC PACKAGE FOR NORTH KARANPURA STPP (3x660MW)**  
**VENDOR LIST FOR ITEMS COVERED UNDER PROVENNESS CLAUSE AS PER SPECIFICATION**  
 DOC# CS-4410-001-2

Legends: A : Acceptable.  
 DR : Details Required.

(Vendor proposals in column "....att 5" in this list are as augmented by BHEL by addition/ deletion in post bid stage)

Sl. No	Name Of The Equipment	Vendor Proposal In Att.5	Place	Remarks		Provenness Clause No
				On Provenness / qualifying experience	On vendor detail.	
1	TURBINE SET	BHEL	HARDWAR	A	A	
		SIEMENS	GERMANY	A	A	
2	GENERATOR	BHEL	HARDWAR	A	A	
		SIEMENS	GERMANY	A	A	
3	AIR COOLED CONDENSER	SPX Cooling Technologies	Belgium	DR	DR	
		GEA Cooling Tower Technologies	India	DR	DR	
		SPIG SPA	Italy	DR	DR	
		Shuanliang Eco System Co. Ltd.	China	DR	DR	
		Beijing Shouhang Resources Saving Co. Ltd.	China	DR	DR	
		Innospin AG	Switzerland	DR	DR	
		HARBIN Air Conditioning Co. Ltd.	China	DR	DR	
		PAHARPUR Cooling Tower	India	DR	DR	
4	HP HEATERS	BHEL	Hyderabad	DR	DR	
		SPX	USA	A	A	3.1
		BHI	Korea	A	A	3.1
		THERMAL ENGINEERING INTERNATIONAL (TEI)	USA	A	A	3.1
		Shanghai Electric Power Generation Equipment Co. Ltd.	China	DR	DR	
		Holtec	USA	A	A	3.1
5	LP HEATERS	BHEL	HEEP, Hardwar	DR	A	
		BHEL	Hyderabad	A	A	3.1
6	CONDENSATE EXTRACTION PUMP	MHI	Japan	A	A	3.1
		BHEL	Hyderabad	A	A	3.2 (With same condition as earlier project)
7	CONDENSER AIR EVACUATION PUMP	Edwards	UK/China	A	A	
		Gardner Denver Machinery China Ltd	China	A	A	
		Tsurumi Manufacturing Co. Ltd.	Japan	DR	A	
		Guangdong Foshan Pump Factory Co Ltd (KENFLO)	China	DR	A	
		Unique System	USA	DR	DR	
8	DEAERATOR	BHEL	Hyderabad	A	A	3.1
9	BOILER FEED PUMP	MHI	Japan	A	A	3.1
		BHEL	Hyderabad	A	A	3.2 (With same condition as earlier project)



Sl. No	Name Of The Equipment	Vendor Proposal In Att.5	Place	Remarks		Proveness Clause No
				On Provenness / qualifying experience	On vendor detail.	
10	HP BYPASS VALVE	BHEL	Trichy	DR	DR	
		CCI	Switzerland	A	A	3.1
		Sempell AG	Germany	A	A	3.1
		HORA	Germany	DR	DR	
		Welland & Tuxhorn	Germany	DR	DR	
		Bopp & Reuther	Germany	DR	DR	
11	LP BYPASS VALVE	Control Component India private Limited.	SRICITY, AP	DR	DR	
		Bomafa	Germany	A	A	3.1
		Welland & Tuxhorn	Germany	A	A	3.1
12	HYDROGEN GENERATION PLANT	Electrolyser Corp	Canada	DR	DR	4.9
		Hydrogenics Europe	Belgium	DR	DR	-
		Eastern Electrolyser	Noida	DR	DR	-
		Tinajin Mainland	China	A	A	-
		Teledyne	USA	A	A	-
		Proton Energy	USA	DR	A	4.9
13	Internal Coal Handling Plant	Elecon EPC Projects	V V Nagar	A	A	
		L & T	Chennai	A	A	
		TSL	Chennai	DR	A	
		MBE	Kolkata	DR	A	
		TKII	Pune	A	A	
		FLSmidth	Chennai	A	A	
		DMW	USA	DR	DR	
		Bengal Tools	Kolkata	DR	DR	
		Shanyang Mining Machinery Co. Ltd.	China	DR	DR	
14	Ash Handling System	BHEL - ISG	Bangalore	DR	A	
		DCIPS	Kolkata	DR	A	
		MBE	Kolkata	DR	A	
		Macawber Beekay	Delhi	DR	A	
		UCC	USA/India	DR	DR	
		Indure	Delhi	DR	A	
15	Mill Reject Handling System	Macawber Beekay	Delhi	A	A	
		Melco India	Delhi	DR	DR	
		HV Equipments	Noida	DR	DR	
16	Fire Protection & Detection System	Lloyd Insulations	Delhi	A	A	4.5
		Minimax GmbH	Germany	A	A	4.5
		Tyco Fire & Security	Bangalore	A	A	-
		UTC Fire & Security	Gurgaon	A	A	-
		Unitech Machines	Gurgaon	A	A	-
		Mehta & Associates	Ahmedabad	DR	A	-
		Sureland	China	A	A	-
		Mx Systems International	Mumbai	A	DR	-
		Agnice Fire Protection	Chennai	A	DR	-
		Thermosystems	Hyderabad	DR	DR	-
		BHEL - Hyderabad	Hyderabad	DR	DR	-
		Technofab	Faridabad	A	A	-
		Mather & Platt	Pune	DR	A	4.5
17	TG Hall EOT Cranes	Mukand	Thane	A	A	
		WMI	Mumbai	A	A	
		Anupam Industries	V U Nagar	A	A	
		Unique Industries Handlers	Nasik	A	A	-



Sl. No	Name Of The Equipment	Vendor Proposal In Att.5	Place	Remarks		Proveness Clause No
				On Provenness / qualifying experience	On vendor detail.	
18	AIR CONDITIONING SYSTEM	HEC	Ranchi	A	A	
		BLUE STAR	MUMBAI	A	A	4.6
		VOLTAS	MUMBAI	A	A	4.6
		STERLING & WILSON	KOLKATA	A	A	-
		DRAFT AIR	AHMEDABAD	DR	DR	-
		MW HIGH TECH	HYDERABAD	DR	DR	-
		ADVANCE VENTILATION	DELHI	A	DR	4.6
19	VENTILATION SYSTEM	C DOCTOR	KOLKATA	A	A	4.7
		S K SYSTEM	DELHI	A	DR	4.7
		ROOTS COOLING SYSTEM	NOIDA	DR	DR	-
		AIR LINK ENGINEERS	DELHI	DR	DR	-
		ADVANCE VENTILLATION	DELHI	DR	DR	-
		STERLING & WILSON	KOLKATA	DR	A	-
		DRAFT AIR	AHMEDABAD	DR	DR	-
		BLUE STAR	MUMBAI	A	A	-
		ABB	KOLKATA	A	A	-
		VOLTAS LIMITED	MUMBAI	A	A	4.7
20	FUEL OIL HANDLING PLANT	RAUNAQ INTERNATIONAL LTD	FARIDABAD	A	A	
		GMW	VADODRA	A	A	
		UNITECH MACHINES LTD	GURGAON	A	A	
		TECHNOELECTRIC ENGG	KOLKATA	A	A	
		TECHNO FAB ENGG	NEW DELHI	A	A	
		THERMOSYSTEMS	HYDERABAD	DR	DR	
21	OIL FREE SCREW COMPRESSOR WITH COMPLETE SKID MOUNTED	ATLAS COPCO	BELGIUM	A	A	4.8
		AERZENER	GERMANY	DR	A	
		ELGI- COIMBATORE (ELGI-HITACHI)	COIMBATORE	A	A	
		INGERSOLL RAND	NARODA	A	A	
		HITACHI	JAPAN	DR	A	
22	OIL FREE CENTRIFUGAL COMPRESSOR WITH COMPLETE SKID MOUNTED	SAMSUNG TECHWIN	SOUTH KOREA	A	A	4.8
		INGERSOLL RAND	USA	DR	DR	-
		ATLOS COPCO	USA/PUNE	DR	DR	-
		CAMRON	USA	DR	DR	-
23	AIR DRYER (HOC)	SUMMIT HYGRONICS	COIMBATORE	A	A	4.9
		ATLAS COPCO	BELGIUM	A	A	-
		DELAIR	GURGAON	DR	A	-
		INDCON	DELHI	A	A	-
		MELCON ENGINEERS	DELHI	A	A	4.9
24	WATER PRE TREATMENT PLANT	DRIPLEX	NEW DELHI	A	A	
		TRIVENI	NOIDA	A	A	
		GEO MILLER	NEW DELHI	A	A	
		VA TECH WABAG	PUNE	A	A	
		ION EXCHANGE	MUMBAI	A	A	
		SHRIRAM EPC	CHENNAI	DR	DR	
		BHEL	RANIPET	A	DR	
		THERMAX	PUNE	A	DR	
25	LIQUID EFFLUENT	DRIPLEX	NEW DELHI	A	A	
		TRIVENI	NOIDA	A	A	-



Sl. No	Name Of The Equipment	Vendor Proposal In Att.5	Place	Remarks		Proveness Clause No
				On Provenness / qualifying experience	On vendor detail.	
	TREATMENT PLANT	GEO MILLER	NEW DELHI	A	A	
		VA TECH WABAG	PUNE	DR	A	
		ION EXCHANGE	MUMBAI	A	A	
		THERMAX	PUNE	A	DR	
		PARAMOUNT	VADODARA	A	DR	
		SHRIRAM EPC	CHENNAI	DR	DR	
		TECHNOFAB	NEW DELHI	A	DR	
26	DM PLANT (CONVENTIONAL ION EXCHANGE BASED)	THERMAX	PUNE	A	A	
		ION EXCHANGE	MUMBAI	A	A	
		DRIPLEX	NEW DELHI	A	A	
		RESIN INDIA WATER TREATMENT		DR	DR	
		TRIVENI	NOIDA	DR	DR	
		WIPRO	XXXXXX	DR	DR	
		VA TECH WABAG	PUNE	A	DR	
		PARAMOUNT	VADODARA	A	DR	
27	DM PLANT (RO+MB PLANT)	AQUA DESIGN	CHENNAI	DR	DR	
		TRIVENI	NOIDA	A	A	
		ION EXCHANGE	MUMBAI	A	A	
		THERMAX	PUNE	A	DR	
		AQUA DESIGN	CHENNAI	DR	DR	
		SUZHOU DONGFANG	CHINA	DR	DR	
		VA TECH WABAG	PUNE	A	DR	
		BHEL	RANIPET	A	DR	
28	CONDENSATE POLISHING PLANT	DOSHION	AHMEDABAD	A	DR	
		DRIPLEX	NEW DELHI	A	A	
		ION EXCHANGE	MUMBAI	A	A	
		BGR ENERGY	CHENNAI	A	A	
		THERMAX	PUNE	DR	A	
		VA TECH WABAG	PUNE	DR	DR	
29	IDCT FOR AUXILIARY COOLING WATER SYSTEM	SIEMENS	MUMBAI/ SINGAPORE	DR	DR	
		HAMMON SHRIRAM	CHENNAI	A	DR	
		L&T	CHENNAI	A	A	
		NBCC	NEW DELHI	A	A	
		PAHARPUR COOLING TOWERS	NEW DELHI	A	A	
		GEA COOLING TOWER	CHENNAI	A	A	
		BDT LIMITED		DR	DR	
30	ACW TREATMENT PLANT	HAMON THERMAL	EUROPE	A	DR	
		DRIPLEX	NEW DELHI	DR	A	
		THERMAX	PUNE	DR	A	
		ION EXCHANGE	MUMBAI	DR	A	
31	PA Fans	CHEMBOND ASHLAND WATER TECHNOLOGY LTD	INDIA	DR	DR	
		TLT	GERMANY	A	A	
32	ID Fans	BHEL	RANIPET	A	A	
		TLT	GERMANY	A	A	

Sl. No	Name Of The Equipment	Vendor Proposal In Att.5	Place	Remarks		Proveness Clause No
				On Provenness / qualifying experience	On vendor detail.	
		BHEL	RANIPET	A	A	
33	FD Fans	TLT	GERMANY	A	A	
		BHEL	RANIPET	A	A	
34	Coal Pulverisers	BHEL	Hyderabad	A	A	
35	Raw Coal Feeders	BHEL	Trichy	A	A	
36	Boiler Start up drain re-circulation pump	TORISHIMA	JAPAN	A	A	
		HAYWARD TAYLOR	UK	A	A	
		KSB AG	GERMANY	A	A	
37	Air Pre-heaters	BHEL	Ranipet	DR	DR	
38	Auxiliary Boiler	BHEL	TRICHY	A	A	
39	ESP	BHEL	RANIPET	A	A	
40	HT MOTOR FOR ID FAN & BFP	BHEL	BHOPAL	A	A	
41	HT Switchgear ( 3.3KV,11KV)	Siemens	Mumbai	A	A	
		Megawin	Salem	A	A	
		BHEL	Bhopal	A	A	
42	HT Switchgear ( 33KV)	Siemens	Mumbai	A	A	
		Megawin	Salem	A	A	
		BHEL	Bhopal	DR	DR	
43	Numerical Relay Network system Integration	SEL	USA / Bangalore,India	A	A	
		Honeywell	Pune	A	A	
		ABB	Bangalore / Baroda	A(Bangalore) / DR(Baroda)	A	
		Schneider	Noida	DR	A	
		Alstom	Chennai	DR	DR	
		Siemens	Gurgaon	DR	DR	
		GE	Bangalore	DR	DR	
44	IEC 61850 Complaint Numerical Relays	Schneider	UK	A	A	
		Alstom	UK/Chennai	A	A	
		SEL	USA	A	A	
		ABB	Finland	A	A	
		GE Multilin	Canada/Spain	A	A	



Sl. No	Name Of The Equipment	Vendor Proposal In Att.5	Place	Remarks		Provenness Clause No
				On Provenness / qualifying experience	On vendor detail.	
		ABB	Vadodara	DR	A	6xx series only
		Siemens	Goa	DR	DR	
45	LT Switchgear	C&S Electric	Noida	A	A	
		GE	Bangalore	A	A	
		L&T	Mumbai/Coimbatore	A	A	
		Siemens	Mumbai	DR	A	
		Unilec	Gurgaon	NA	A	Does not meet Provenness criteria
		ABB	Bangalore	A	DR	
		Schneider	Nasik	A	A	
		BHEL CBU	Bangalore	NA	DR	Does not meet Provenness criteria
46	HT Cable upto 11KV	Universal Cable Ltd.	Satna	DR	A	
		Torrent Cable Ltd	Nadiad	DR	A	
		Polycab Wires Pvt. Ltd	Daman	A	A	
		KEI Industries	Bhiwadi	A	A	
		Havells India Ltd.	Alwar	A	A	
		Finolex	Pune	DR	A	
		Uniflex	Valsad	DR	A	
		NICCO	Shamnagar , Kolkata	DR	A	
		Incab	Pune	DR	A	
		Sri ram Cables	Bhiwadi	A	A	
47	HT Cable (33KV)	Universal Cable Ltd.	Satna	DR	A	
		Torrent Cable Ltd	Nadiad	DR	A	
		Polycab Wires Pvt. Ltd	Daman	A	A	
		KEI Industries	Bhiwadi	A	A	
		Havells India Ltd.	Alwar	A	A	
		Finolex	Pune	DR	A	
		Uniflex	Valsad	DR	A	
48	1.1 KV Power cable (PVC & XLPE)	Universal Cable Ltd.	Satna	DR	A	
		NICCO	Shamnagar , Kolkata	DR	A	
		Torrent Cable Ltd	Nadiad	DR	A	
		Incab	Pune	DR	A	
		Hindustan Vidyut Products Ltd	Faridabad	DR	A	
		KEI Industries	Bhiwadi	A	A	

Sl. No	Name Of The Equipment	Vendor Proposal In Att.5	Place	Remarks		Proveness Clause No
				On Provenness / qualifying experience	On vendor detail.	
49	1.1 KV Control cable	Delton Cable Ltd	Faridabad	DR	A (condition of approval- A) Unarmoured cable all sizes. B) Armoured cable up to 3.5 x 240 sq. Mm with GI strip armour and 1CX70 sq mm with al strip armour)	
		Paramount Cable	Khushkhera	A	A	
		Polycab Wires Pvt. Ltd	Daman	A	A	
		Gemscabs Industries	Bhiwadi	DR	A	
		Cords Cables	Bhiwadi	DR	A	
		Havells India Ltd.	Alwar	A	A	
		Sri ram Cables	Bhiwadi	DR	A	
		Ravin Cables	Pune	DR	A	
		Thermocables	Hyderabad	DR	A	
		Sbee Cables	Bangalore	DR	A	
		Suyog Cables	Vadodara	DR	A	
		Gupta Power Cables	Bhubaneswar	DR	A	
		Finolex	Pune	DR	A	
		Siechem	Pondicherry	DR	DR	
		Kec international ltd,	Mumbai	DR	DR	
		Kec international ltd	Chennai	DR	DR	
		Goyolene fibre (i) pvt ltd	Mumbai	DR	DR	
		Krishna electrical industries limited	Gwalior	DR	DR	
		Associated cables pvt ltd	Mumbai	DR	DR	
		Gloster cables limited	Secunderabad	DR	DR	
		Advance cable technologies (p) ltd	Bengaluru	DR	DR	
		Step industries private limited	Delhi	DR	DR	
		Imt cables pvt ltd	New delhi	DR	DR	
		Epsilon cables pvt ltd	Nagpur	DR	DR	
		Special cables pvt ltd	New delhi	DR	DR	
		Govind cable industries	Kolkata	DR	DR	
		Apar industries ltd	Bengaluru	DR	DR	
		T c communication pvt ltd	Ghaziabad	DR	DR	
		NICCO	Shamnagar , Kolkata	DR	A	
		Torrent Cable Ltd	Nadiad	DR	A	
		Incab	Pune	DR	A	
		Polycab Wires Pvt. Ltd	Daman	A	A	
		Hindustan Vidyut Products Ltd	Faridabad	DR	A	



Sl. No	Name Of The Equipment	Vendor Proposal In Att.5	Place	Remarks		Proveness Clause No
				On Provenness / qualifying experience	On vendor detail.	
R.H.		KEI Industries	Bhiwadi	A	A	
		Delton Cable Ltd	Faridabad	DR	A	
		Paramount Cable	Khushkhera	DR	A	
		Gemscabs Industries	Bhiwadi	DR	A	
		Cords Cables	Bhiwadi	A	A	
		SPM Cables	Hyderabad	DR	A	
		Elkay Telelink	Faridabad	DR	A	
		Havells India Ltd.	Alwar	A	A	
		R.R. Kabel	Silvasa	A	A	
		Ravin Cables	Pune	DR	A	
		Gupta Power cable	Bhubaneswar	A	A	
		Thermocables	Hyderabad	DR	A	
		Finolex	Pune	DR	A	
		Sbee Cables	Bangalore	DR	A	
		Suyog Cables	Vadodara	DR	A	
		Universal Cables	Satna	DR	A	
		Siechem Cables	Pondicherry	DR	DR	
		Kec international ltd,	Mumbai	DR	DR	
		Kec international ltd	Chennai	DR	DR	
		C m i ltd.,	Faridabad	DR	DR	
		Goyolene fibre (i) pvt ltd	Mumbai	DR	DR	
		Krishna electrical industries limited	Gwalior	DR	DR	
		Gloster cables limited	Secunderabad	DR	DR	
		Advance cable technologies (p) ltd	Bengaluru	DR	DR	
		Step industries private limited	Delhi	DR	DR	
		Imt cables pvt ltd	New delhi	DR	DR	
		Epsilon cables pvt ltd	Nagpur	DR	DR	
		Special cables pvt ltd	New delhi	DR	DR	
		Govind cable industries	Kolkata	DR	DR	
		Apar industries ltd	Bengaluru	DR	DR	
		T c communication pvt ltd	Ghaziabad	DR	DR	
50	D G Set (LT) (Assembly & Testing)	M/s Powerica	Silvasa	DR	A	
		M/s Jakson	Kathua	A	A	
		M/s TIL	Ghaziabad	DR	A	
		M/s. Kohler	Singapore	DR	A	
		M/s Sterling Generators Pvt Ltd	Silvasa	DR	A	
		M/s CLLS	Singapore	DR	A	
		Super Nova	Vadodara	DR	DR	
51	Battery Charger (110V/220V)	M/s Amararaja	Tirupati	DR	A	
		M/s HBL- Power System	Hyderabad	A	A	
		M/s Chhabi Electrical	Jalgaon	A	A	
		M/s. Chloride Power	Kolkatta	DR	A	
		M/s Statcon	Hapur	DR	A	
		M/s Dubas	Bangalore	DR	A	
52	Battery ( Ni-Cd) (110V/220V)	HBL-Power System	Hyderabad	A	A	
		M/s Hoppeke	Germany	DR	DR	



Sl. No	Name Of The Equipment	Vendor Proposal In Att.5	Place	Remarks		Proveness Clause No
				On Provenness / qualifying experience	On vendor detail.	
		AMCO SAFT	Bangalore	A	A	
	Battery Plante ( 110V/220V)	M/s Exide	Kolkata	A	A	
		M/s Hoppeke	Germany	DR	DR	
		Alstom	Chennai	<del>A</del> DR	A	
		Siemens	Aurangabad	<del>A</del> DR	A	
		CGL	Nasik	<del>A</del> DR	A	
		ABB	Vadodara	<del>A</del> DR	A	
54	Circuit Breaker	GR power	Hyderabad	<del>A</del> DR	A	
		Hi-velm	Chennai	<del>A</del> DR	A	
		S&S	Pondicherry	<del>A</del> DR	A	
		Switchgear & Structural	Hyderabad	DR	DR	
		Siemens	Hyderabad	<del>A</del> DR	A	
		Alstom	Hosur	<del>A</del> DR	A	
		ABB	Vadodara	<del>A</del> DR	A	
		BHEL	Bhopal/Jhansi	<del>A</del> DR	A	
		CGL	Nasik	<del>A</del> DR	A	
		Alstom	Hosur	<del>A</del> DR	A	
		ABB	Vadodara	<del>A</del> DR	A	
		BHEL	Bhopal	<del>A</del> DR	A	
		Mehru Elec & Mech Ltd	Bhiwadi	DR	A	
		CGL	Nasik	<del>A</del> DR	A	
		Lamco	Hyderabad	<del>A</del> DR	A	
		Oblum	Hyderabad	<del>A</del> DR	A	
		Elpro	Pune	DR	DR	
		CGL	Nashik	<del>A</del> DR	A	
		Elektrolites	Jaipur	DR	A	
		Alstom	Chennai	A	A	
		Siemens	Kalwa	A	A	
		BHEL	Bhopal	DR	DR	
		Schneider	Noida	A	A	
		ABB	Peenya	A	A	
		ABB	Finland/Peenya	A	A	
		Schneider	Frnace	A	A	
		Alstom	UK/France	A	A	
		Siemens	Germany	A	A	
		Elster	Mumbai	A	A	
		SEMS	Udaipur	A	A	
		Landis & Gyr	Switzerland	A	A	
		Schneider	Noida	DR	DR	
		ABB	Finland	A	A	
		Schneider	France/ UK	A	A	
		Alstom	UK/france/Chennai	A	A	
		Siemens	Germany	A	A	
63	Generator Transformer	BHEL	Bhopal	A	A	
		Alstom	Allahabad	A	A	
		ABB	Vadodara	A	A	
		Emco	Thane	A	A	
		BHEL	Bhopal	A	A	
		Siemens	Navi Mumbai	A	A	
		CGL	Kanjurmarg	A	A	
65	Auxilllary	Alstom	Allahabad	A	A	





**EPC PACKAGE FOR NORTH KARANPURA STPP (3x660MW)**  
**VENDOR LIST FOR ITEMS COVERED UNDER PROVENNESS CLAUSE AS PER SPECIFICATION**  
 DOC# CS-4410-001-2

Legends: A : Acceptable.  
 DR : Details Required.

(Vendor proposals in column "....att 5" in this list are as augmented by BHEL by addition/ deletion in post bid stage)

Sl No	Name Of The Equipment	Vendor Proposal In Att.5	Place	Remarks		Provenness Clause No
				On Provenness / qualifying experience	On vendor detail.	
12	HYDROGEN GENERATION PLANT	Spirare Energy Pvt. Ltd.	Noida	DR	DR	
46	HT Cable upto 11KV	Diamond Power Infrastructure Ltd	Vadodara	DR	DR	
		Gemscab Industries Ltd.	New Delhi	DR	DR	
		Hindusthan Vidyut Products Ltd.	New Delhi	DR	DR	
		Krishna Electrical Industries Ltd.	Gwalior	DR	A	
		KEC International Limited	Vadodara	DR	A	
		Paramount Communications Ltd.	Khushkhhera	DR	A	
		Ravin Cables Limited	Pune	DR	DR	
47	HT Cable (33KV)	Sri ram Cables	Bhiwadi	DR	DR	
		Diamond Power Infrastructure Ltd	Vadodara	DR	DR	
		Gemscab Industries Ltd.	New Delhi	DR	DR	
		Hindusthan Vidyut Products Ltd.	New Delhi	DR	DR	
		KEC International Limited	Vadodara	DR	A	
		Paramount Communications Ltd.	New Delhi	DR	DR	
48	1.1 KV Power cable (PVC & XLPE)	Diamond Power	Vadodara	DR	DR	
		Apar Industries Limited, (Uniflex)	Valsad	DR	DR	
		Sam Cables & Conductors	Rudrapur	DR	DR	
49	1.1 KV Control cable	Diamond Power	Vadodara	DR	DR	
		Sam Cables & Conductor	Rudrapur	DR	DR	
53	Battery Plante ( 110V/220V)	HBL-Power System	Hyderabad	DR	DR	
65	Auxilllary Transformer	Kanohar Electricals	Meerut	DR	A	
		Marsons Limited	Kolkata	DR	DR	
		Transformers & Rectifiers (India)	Ahmedabad	DR	A	
		Technical associates	Sitarganj	DR	A (CA)	
		Danish Private Limited	Jaipur	DR	DR	

25.07.14  
 (Kamlesh Singh)

Bipin Kumar  
 25.07.14  
 BIPIN KUMAR  
 Dy. Mgr./Q  
 PEM

PROJECT: NORTH KARANPURA STPP (3X660 MW)			LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL			
PACKAGE: EPC PACKAGE			SUB SYSTEM: CIVIL WORKS			
MAIN SUPPLIER: BHEL			NTPC DOC NO			
CONTRACT NO.: CS-4410-001-2			REV. NO. 0			
SR. NO. ITEM			DATE 16.12.2013			
QAP / INSP. CAT			REMARKS			
QAP NO.			APPROVAL STATUS / CATEGORY			
PROPOSED SUB SUPPLIER			PLACE OF MANUFACTURING			
SUB-CONTRACTOR			REFER POST BID MOM			
MAIN CONTRACTOR/ SUB-CONTRACTOR			REFER POST BID MOM			
MAIN CONTRACTOR/ SUB-CONTRACTOR			REFER POST BID MOM			
MAIN CONTRACTOR/ SUB-CONTRACTOR			REFER POST BID MOM			
MAIN CONTRACTOR/ SUB-CONTRACTOR			REFER POST BID MOM			
CCI			N			
GUJARAT AMBUJA			N			
JK LAXMI			N			
JAYPEE			N			
GRASIM			N			
BIRLA			N			
LAFARGE			N			
ACC			N			
SHREE			N			
INDIA CEMENT			N			
PENNA CEMENT			N			
MADRAS CEMENT			N			
PRISM			N			
ULTRATECH			N			
ORIENT			N			
MANCHERIAL			N			
JSW			N			
ANDHRA CEMENT			N			
PARASHAKTI			N			
SAGAR			N			

PS-Mktg. Delhi

PS-Mktg. Delhi

PS-Mktg. Delhi



039



PROJECT: NORTH KARANPURA STPP (3X660 MW)				LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL			
PACKAGE: EPC PACKAGE							
MAIN SUPPLIER: BHEL							
CONTRACT NO.: CS-4410-001-2							
SUB SYSTEM: CIVIL WORKS							
S.R. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS
6.	REINFORCEMENT AND STRUCTURAL STEEL			MAIHAR	-	N	
				MANIKGARH	-	N	
				STEEL AUTHORITY OF INDIA LTD	-	A	
				TATA IRON & STEEL CO LTD	-	A	
				INDIAN IRON & STEEL CO LTD	-	A	
				RASHITRYA ISPAT NIGAM LTD	-	A	
				ESSAR STEEL LTD	-	A	
				ISPAT INDUSTRIES LTD	-	A	
				JSW STEEL LTD	-	A	
				LLOYDS STEEL LTD	-	A	
7.	CONSTRUCTION CHEMICALS - ADMIXTURES, PLASTISIZERS, RETARDERS WATER PROOFING COMPOUNDS GROUTS	III	-	JAI BALAJI INDUSTRIES	DURGAPUR (WB)	A	Only TMT 8 to 40 mm size
				SUNFLAG STEEL & IRON CO.	BHANDARA (MH)	A	Only rounds 15-115 mm, Flats 45-120 mm w & 4.75-28 mm thk, Hex Rods 15.5-42 mm & wire rods 5.5 to 38 mm
				SIKA INDIA LTD	-	N	
				CICO TECHNOLOGIES LTD	-	N	
				FOSROC CHEMICALS (I) PVT LTD	-	N	
8.	FALSE CEILING - GLASS REINFORCED GYPSUM SYSTEM, MINERAL FIBRE BOARD SYSTEM,	III	-	BASF	-	N	
				SAINT GOBAIN	NEW DELHI	N	
				HUNTER DOUGLASS	MUMBAI	N	
				TIGER STEEL	PUNE/MUMBAI	N	



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APPENDIX 18 OF 2013



PROJECT: NORTH KARANPURA STPP (3X660 MW)				LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL			
PACKAGE: EPC PACKAGE							
MAIN SUPPLIER: BHEL							
CONTRACT NO.: CS-4410-001-2							
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	NTPC DOC NO	REMARKS
				AGRO		REV. NO.	0
				ERA BULD SYS	RUDRAPUR	DATE	16.12.2013
				TATA BLUE SCOPE	PUNE		
				TATA BLUE SCOPE	BHIWADI		HINJEWARI WORKS
				PENNAR INDUSTRIES	HYDERABAD		
				ALFA STEEL BUILDING SOLUTIONS	HOSUR		
				MULTICOLOUR STEEL INDIA LIMITED	GURGAON		
				UNIMET PROFILES LIMITED	DHARUHERA-HARYANA		
				ERA BULD SYS	RUDRAPUR		
				TATA BLUE SCOPE	PUNE		HINJEWARI WORKS
				TATA BLUE SCOPE	BHIWADI		
				PENNAR INDUSTRIES	HYDERABAD		
				ALFA STEEL BUILDING SOLUTIONS	HOSUR		
				ISOLLOYD	SOLAN		
				NATIONAL STEEL AND AGRO	DHAR		
				INDIANA GRATING	PUNE		
				PREMIER POWER PRODUCTS (CALCUTTA) PVT LTD	HOWRAH		
				GREATWELD	PUNE		
				BHOLA RAM STEELS	PATNA		
				KANADE ANAND UDYOG	THANE		
				PINAX STEEL INDUSTRIES	PATNA		
12.	PROFILERS FOR CLADDING SHEETS	1					
13.	ELECTROFORGED GRATING	1					



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(8)

## ANNEXURE-I

PROJECT: NORTH KARANPURA STPP (3X660 MW)				LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL				NTPC DOC NO		REV. NO.		DATE		REMARKS	
PACKAGE: EPC PACKAGE										0		16.12.2013			
MAIN SUPPLIER: BHEL															
CONTRACT NO.: CS-4410-001-2															
SUB SYSTEM: CIVIL WORKS															
S.R. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS								
14.	GI PIPES	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE	-	N									
15.	PVC WATER STOP	III	-	DURON POLYVINYLS PVT. LTD	GURGAON	N									
				KANTA RUBBER	HYDERABAD	N									
				MARUTI RUBBER	NOIDA	N									
				JYOTI POLYVINYL	VADODARA	N									
				DEEP-JYOTI RUBBER PVT LTD	NOIDA	N									
16.	BITUMEN ASPHALT	III	-	ALL GOVERNMENT REFINARIES	-	N									
17.	PLASTIC/ PVC PIPES	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE	-	N									
18.	BITUMEN IMPREGNATED FIBER BOARD JOINT FILLER , BITUMEN SEALING COMPOUND	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE	-	N									
19.	ALUMINIUM COMPOSITE CLADDING	III	-	INDOMAX ALSTONE	ROORKEE DEHRADUN	A									
20.	CERAMIC / VITRIFIED TILES	III	-	KAJARIA	-	N									
				SOMANY	-	N									
				SPARTEK INDIA	-	N									
				NITCO	-	N									
				ORIENT BELL	-	N									
				MARBITO	-	N									
				RESTILE	-	N									
				JOHNSON	-	N									



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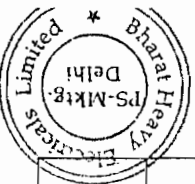
PROJECT: NORTH KARANPURA STPP (3X660 MW)			LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL				NTPC DOC NO	
PACKAGE: EPC PACKAGE							REV. NO. 0	
MAIN SUPPLIER: BHEL			SUB SYSTEM: CIVIL WORKS				DATE 16.12.2013	
CONTRACT NO.: CS-4410-001-2								
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS	
21.	ACID / ALKALI RESISTANCE TILES, AR BRICKS, AR CEMENT (POTASSIUM SILICATE BASED CEMENT MORTAR, PHENOLIC BASED RESIN CEMENT) AR BITUMASTIC	III	-	CARBORANDUM UNIVERSAL PELICAN CAMBRIAN KERATECH CHAMPION CERAMICS SUNSHINE CERAMICS MAHAKOSHAL POTTRIES PERFECT ACID WARE BABA BAIDNATH REFRACTORIES NAVIAIR INTERNATIONAL LTD. SHAKTI MET DOOR SUPER STEEL SIGNUM FIRE PROTECTION RADIANT SAFE DOORS NOVAPAN ECOBORD BHUTAN BOARD KITPLY CENTURY GREEN PLY DUROPLY MERINO	CHENNAI BHIWADI ALWAR VADODARA CHAMPA CHAMPA KATNI JABALPUR PURULLA NEW DELHI HYDERABAD DELHI NAGPUR AHMEDABAD - - - - - -	N N		
22.	FIRE PROOF DOORS	III	-					
23.	PARTICLE BOARDS, PLYWOOD, MDF	III	-					



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## ANNEXURE-I

PROJECT: NORTH KARANPURA STPP (3X660 MW)			LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL				NTPC DOC NO	
PACKAGE: EPC PACKAGE							REV. NO.	0
MAIN SUPPLIER: BHEL							DATE	16.12.2013
CONTRACT NO.: CS-4410-001-2			SUB SYSTEM: CIVIL WORKS					
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS	
24.	ALUMINUM SECTIONS	III	-	HINDALCO	-	N		
				INDALCO	-	N		
				BALCO (VEDANTA)	-	N		
				NALCO	-	N		
				JINDAL	-	N		
25.	HIGH SOLID CONTENT LIQUID APPLIED URETHANE BASED ELASTOMERIC MEMBRANE FOR WATER PROOFING	III	-	STP	-	N		
				IWL INDIA LTD	-	N		
				LLOYDS	-	N		
				CICO TECHNOLOGIES LTD	-	N		
				MK PETRO	-	N		
26.	SANITARY ITEMS	III		PARRYWARE	-	N		
				HINDWARE	-	N		
				SEABIRD	-	N		
				ORIENT	-	N		
				HINDUSTAN	-	N		
				CERA	-	N		
27.	CP BRASS TAP AND OTHER SANITARY FITTINGS	III	-	GEM	-	N		
				PARKO	-	N		
				JAGUAR	-	N		
				MARC	-	N		
28.	POLYTHENE WATER STORAGE TANKS	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE	-	N		
29.	NEOPRENE BELLOW STRAPS	III	-	CORI	CHENNAI	A		
				RESISTOFLEX	NOIDA	A		
				DWREN	KOLKATA	A		



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PROJECT: NORTH KARANPURA STPP (3X660 MW)				LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL				NTPC DOC NO	
PACKAGE: EPC PACKAGE								REV. NO.	0
MAIN SUPPLIER: BHEL				SUB SYSTEM: CIVIL WORKS				DATE	16.12.2013
CONTRACT NO.: CS-4410-001-2									
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS		
30.	RCC PIPES	III	-	BIS APPROVED SOURCES HAVING VALID BIS LICENCE		N			
31.	POLYCARBONATE SHEETS	III	-	GE PLASTIC (SABIC)		N			
			-	BAYER (MAKROLOH)		N			
32.	ELECTRICALLY OPERATED HOIST (5T/2T)	I		CONSOLIDATED HOIST	SATARA	A			
				HERCULES HOIST	RAIGARH	A			
				GRIP ENGG	FARIDABAD	A			
				EDDY CRANE	PUNE	A			
				ARMSHEL	BANGLORE	A			
				CENTURY CRANE	PALWAL	A			
				ELECTROTHERAPY	HOWRAH	A			
				TRACTEL TRIFFER	PALWAL	A			
				ALFA CRANES	ALWAR	A			
				REVA HOIST	FARIDABAD	A			
33.	STOP LOG GATES, TRASH RACK AND LIFTING BEAM	I		GENERAL MECHANICAL WORKS	BARODA	A			
				TRIVENI	NOIDA	A			
				MACMET	KOLKATA	A			
				PRADEEP STRUCTURES	HOWRAH	A			
				RED FAB	HYDERABAD	A			
				BSBK ENGG	NOIDA	A			
34.	PTFE BEARING / ELASTOMERIC BEARING	III		ALL CURRENT NORTH / RDSO APPROVED VENDORS		N			
35.	FABRIC EXPANSION COMPENSATOR	I		KELD ELLENTOFI INDIA LTD	CHENNAI	A#			
				EAGLE BURGMANN KE PRIVATE LTD	CHENNAI	A#			

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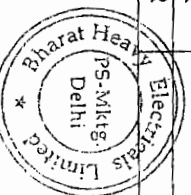






PROJECT: NORTH KARANPURA STPP (3X660 MW)			LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL				
PACKAGE: EPC PACKAGE			SUB SYSTEM: CIVIL WORKS				
CONTRACT NO.: CS-4410-001-2			NTPC DOC NO		REV. NO.		
			DATE		16.12.2013		
SR. NO. ITEM			QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY
43.	COAL TAR ANTICORROSIVE COATING	II			STRUCTURES		
					RUSTTECH	KOLKATA	A
					PORWAL INDUSTRIES	RAIPUR	A
					MP TAR	BHILAI	A
					STP LIMITED	JAMSHEDPUR	A
44.	PORTA CABIN	III			ENGINEERS COMBINED	NEW DELHI	A
					PRESSMACH	CHENNAI	DR
					TINNY CRAFT	NEW DELHI	DR
					CIPY	PUNE	A
45.	ELASTOMERIC POLYURETHANE COATING	III			AMCHEM	NOIDA	A
					E. WOOD, (APPLICATOR: PSL HOLDING, INDIA)	UK	A
					CICO TECHNOLOGIES LTD	GURGAON	A
46.	HIGH PERFORMANCE MOISTURE COMPATIBLE CORROSION RESISTANT COATING SYSTEM	III			CECRI LICENSED SOURCES		N
47.	MS PIPES (IS:3589, WELDED PIPES)	III			BIS APPROVED SOURCES HAVING VALID BIS LICENCE		N
48.	PVC COATED CHAIN LINK FENCING & REINFORCED BARBED TAPE	III			SAUDAGAR MAL MAMMANILAL PVT LTD		N
					MECAFERRI		N
					A-1 FENCE PRODUCTS	MUMBAI	DR
49.	PRE ENGINEERED BUILDINGS	I			INTERARCH	PANT NAGAR	DR
					ZAMIL STEEL	PUNE	DR

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PROJECT: NORTH KARANPURA STPP (3X660 MW)		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL				NTPC DOC NO		
PACKAGE: EPC PACKAGE						REV. NO.		0
MAIN SUPPLIER: BHEL		SUB SYSTEM: CIVIL WORKS				DATE		16.12.2013
CONTRACT NO.: CS-4410-001-2								
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS	
				EVEREST STEEL	ROORKEE	DR		

**LEGENDS:**

**1. SYSTEM SUPPLIER/SUB-SUPPLIER APPROVAL STATUS CATEGORY (SHALL BE FILLED BY NTPC)**

A – For these items proposed vendor is acceptable to NTPC. To be indicated with letter "A" in the list along with the condition of approval, if any.

DR – For these items "Details required" for NTPC review. To be identified with letter "DR" in the list.

IN NOTED – For these items vendors are approved by Main Supplier and accepted by NTPC without specific vendor approval from NTPC. To be identified with 'NOTED'.

**2. QP/INSPN CATEGORY:**

CAT-I : For these items the Quality Plans are approved by NTPC and the final acceptance will be on physical inspection witness by NTPC.

CAT-II : For these items the Quality Plans approved by NTPC. However no physical inspection shall be done by NTPC. The final acceptance by NTPC shall be on the basis review of documents as per approved quality plan.

CAT-III : For these items Main Supplier approves the Quality Plans.

UNITS/WORKS : Place of manufacturing Place of Main Supplier of multi units/works.

**NOTE 1: For the items placed in CAT-III for Civil Works, the review and final acceptance shall be done by NTPC-ElC/ FQA on the basis of MTC / certificate of conformance in line with Indicative FQP / Technical Specifications.**

**FOR CHIMNEY & CHIMNEY ELEVATOR**

**A#:**

**1. Keld Ellentoft (India) Ltd., Chennai**

a) Design of compensator and supply of individual Fabric Layer from M/s Dampex, Canada and Dampex, Canada shall provide Mfg. drg & procedure to Keld Ellentoft (India).

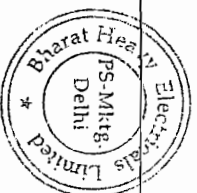
b) During manufacturing, Supervision by M/s Dampex, Canada

c) Inspection & Testing as per approved QPs. The type of fabric and material specification shall be as per approved Data Sheet.

**2. M/s Eagle Burgmann KE Private Ltd (formerly known as M/s K E Burgmann Flexible (India) Pvt. Ltd), Chennai**

a) Raw material (all layers) shall be procured from M/s K.E. Burgmann, Denmark or their approved sub-vendor.

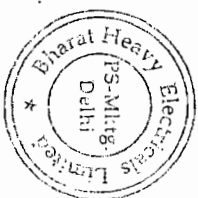
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PROJECT: NORTH KARANPURA STPP (3X660 MW)		LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL				NTPC DOC NO		
PACKAGE: EPC PACKAGE						REV. NO.		0
MAIN SUPPLIER: BHEL		SUB SYSTEM: CIVIL WORKS				DATE		16.12.2013
CONTRACT NO.: CS-4410-001-2								
SR. NO.	ITEM	QAP / INSP. CAT	QAP NO.	PROPOSED SUB SUPPLIER	PLACE OF MANUFACTURING	APPROVAL STATUS / CATEGORY	REMARKS	
<p>b) All tests and checks shall be carried out as per Principal Plant Standard and NTPC approved QP.</p> <p>c) Fabrication of Metallic part shall be done at site by Main Contractor as per guidelines/drawings provided by M/s K.E. Burghmann Flexible India Pvt. Ltd. Chennai and same shall be inspected by M/s K.E. Burghmann Flexible India Pvt. Ltd., Chennai before assembly.</p> <p>d) Expert from M/s. KE Burghmann, Denmark shall visit the site during and after completion of assembly/erection and will sign the protocol.</p> <p>3. M/s Mekaster Engg &amp; Equipments (P) Ltd, Halol, Gujrat</p> <p>a) Safety device shall be with valid CE mark certified under CE lift Directives as per DNV certificate No. 72853-2010-CE-IND-DNV dated 26.02-2010.</p> <p>b) Safety device shall be as per NTPC technical Specifications.</p> <p>c) All the tests as per NTPC approved quality plan for safety device shall be performed before dispatch.</p>								

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## ANNEXURE-II

### Tentative List Drawings to be submitted

Following design calculations, drawings & documents are required to be furnished after successful award of order,

SN	DRAWINGS/ DOCUMENTS
1	Complete BOQ for Transmission line including accessories & earthing
2	Erection Key diagram for transmission line including identification of various type of
3	Damper placement chart as per NTPC specification
4	Stringing charts for conductor, shield wire & OPGW
5	220 kV Transmission Line - Proto Corrected Structural Drawing of Tower including
6	FQP for Erection
7	Drawings & GTP of conductor accessories like spacers, clamps, vibration dampers etc
8	Type test reports of conductor accessories like spacers, clamps, vibration dampers etc
9	Earthing details of towers
10	Quality plans for all supply items

The list provided above is not complete & any additional drawing/ document necessary of system understanding or mentioned in NTPC specification shall be submitted by bidder for NTPC/ BHEL approval.