

Detail Designing, Manufacturing, and supply of NSPBD and its Associated Equipements alongwith Mandatory and Commissioning Spares as outline in tender documents of Open tender enquiry No.

Other scope of supply / work:

1	Scope of Supply of NSPBD are as under: (A) Supply of complete AC Busduct - 850 V , 5500 Amps. TP after detail engineering and shop manufacturing for complete erection & commissioning at site as per following drawings/documents: 1. Indicative Bill of quantity as per Annexure-1 2. Layout and foundation drawings, technical data sheet and other drawings as per Annexure-2 (B) Supply of complete DC Busduct - 500 V , 5500 Amps. DP after detail engineering and shop manufacturing for complete erection & commissioning at site as per following drawings/documents: 1. Indicative Bill of quantity as per Annexure-1 2. Layout and foundation drawings, technical data sheet and other drawings as per Annexure-2 (C) M/S NCC Technical specification of NSPBD NO.-T658000-DC01-00-BAA-142010 Rev-00 Vol-2 ,Section- C4, Sheet-8 of 9 , Clause-3.4.
2	Erection and commisioning is not in bidders scope of supply.
3	Price shall be quoted on lumpsum basis based on drawing and technical specification and (a) tentative BOQ as per Annexure-1 for DC BD (ET Panel to Generator Excitation system) 5500 Amps. (b) tentative BOQ as per Annexure-1 for AC BD (ET to ET Panel) : 5500 Amps.
4	Bill of quantity shall be comprises of following items:
4.1	Spares:
4.2	1. Commissioning spares: a) Complete mounting arrangement 5% of total quantity of complete run b) Set of all type of flexible connections arrangement of each varity(3 phase set of each type). c) Flange to flange joint gasket 5% of total scope. d) window gasket 5 % of total scope/qty. e) All type of hardware set 5% of total requirement f) All type of structure hardware set 5 % of total requirement g) Wall frame assembly 5% of total requirement h) 5% qty. shall be rounded off to the next higher number to complete numerically. i) Silicagel breather arrgt. qty. 1 set for each run.
4.3	2. Mandatory spares: a) Complete mounting arrangement 5% of total quantity of complete run b) Termination connection arrangement of each vareity at ET panel, Generator excitation system (3 phase set of each type). c) Flange to flange joint gasket 5% of total scope. d) window gasket 5 % of total scope/qty. e) 5% qty. shall be rounded off to the next higher number to complete numerically. f) 5% qty. of total scope of each varity of Rubber bellow.

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Technical Terms and conditions:	
Testing and Inspection:	
1	Bidder to confirm to submit their detailed engineering drawings in complete set , technical data sheet, QAP, Bill of quantity in 15 days time after receipt of PO for BHEL approval and manufacturing clearance.
2	Bidder to confirm to supply the Galvanized Foundation bolts and busduct supporting structure alongwith hardware in the first lot of supply.
3	Bidder has to furnish the proof of execution of similartype and rating of busduct as already completed.
5	Bidder shall be responsible for any failure of their supplied NSPBD system at the time of site erection testing, commissioning and performance. He will have to attend the problems / issues at site as and when required without any extra cost within the guarantee period.
6	Vendor to confirm that painting shall be done as per attached document no.-NTP10111-PE-123-E-TS-410600,Page1 of 1 (Indoor Portion)
7	Bidder shall submitte their quality assurance plan alongwith techno commercial bid for evaluation and acceptance.
8	Bidder to confirm that they will conduct all type tests on busduct and its associated equipments as per relevant standard at their own cost.
9	Bidder to conduct all routine and acceptance test on the busduct and its associated equipments and reports shall be submitted for BHEL quality acceptance before dispatch of equipment.
10	Bidder to confirm to submit all test reports of raw materials, components, accessories etc. as per relevant standard.
11	All routine inspection shall be done by BHEL / its inspection agency / BHEL customer. All type testings shall be witnessed by BHEL/Customer.
Packing & Despatch:	
12	(a) Bidder to submit the packing drawing of busduct sections and its associated items and supporting structure to BHEL for approval. Proper packing of finished items being supplied to BHEL, should be done as per BHEL approved drawing so as to avoid any damages during transit. (b) Use of Steel Slings / Chains should be avoided to the maximum extent possible. Only nylon slings should be used. However, in the rare case where use of steel sling / chain becomes unavoidable suitable rubber padding should be placed between the finished items & sling to avoid abrasion on the surface of the items. (c) Stenciled identification should be done on each individual finished item with indelible ink mentioning: (1) Project name, (2) BOM No., (3) Sl. No. & (4) PO No. on atleast two places at diametrically opposite locations. Identification with hard punch should also be done mentioning: (1) PO No., (2) Drg. No., (3) Revision
13	Bidder shall have to submit the following drawing and documents: 1) 05 sets in hard copy of all approved and other assembly drawings and and final asbuilt drawings. 2) 05 sets in hard copy of erection commissioning and maintenance manual 3) 05 sets in hard copy of all type test , routine test and acceptance test reports. 4) 05 sets in hard copy of all erection drawings.


 AGM

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For BHEL / BHEL Customer
 For BHEL / BHEL Customer
 For BHEL / BHEL Customer
 For BHEL / BHEL Customer

Essential Primary Qualifying Requirement:

1	Bidder should have supplied atleast one sysstem of AC Busduct (NSPBD) / SP Busduct of rating minimum 3000 Amps. Which is already been installed and operational. Party to mention the site address where rating has been supplied by them.
2	Against above at sl. no. 1, bidder has to submit the documentary proof of the experience, along with supply invoice/challan. Failing to provide the required information shall be treated as disqualification of their tender offer.


31/10/14

For and on behalf of
the undersigned
31/10/14

General terms and conditions:

1	Bidder to submit their price bid as per details mentioned below: 1.a- Prices shall be quoted on Ex-party works basis for each item of Bill of quantity of tender specification. 1.b-Taxes and duties shall be quoted separately. 1.c- Freight & Insurance shall be quoted separately on FOR RUDRAPUR BASIS. 1.d- L1 price will be evaluated, combined of all items of bill of quantity as at sl. no. 1.a, on the basis of landed cost / total cost to BHEL. 1.e- Bidder has also to submit the unit rate of per metre length of complete NSPBD assembly.
2	Incase due to change in busduct layout drawing by BHEL there is increase / decrease in the length of overall busduct, the PO value will be increased /decreased accordingly by BHEL through ammendment for this necessary documents to be provided by the vendor in support of its claim.
3	For any change in length within the mentioned BOQ shall be considered for deduction of amount at the rate of per metre length of BD.
4	Tender Offer shall be submitted in two separate part bids on two separate envelops.
5	Techno- commercial bid shall be submitted in one sealed envelop.
6	Price bid shall be submitted in another sealed envelop.
7	The offer received from any bidder in single bid shall be rejected and shall not be considered for any further evaluation. Both technocommercial and price bids to be sealed separately and enclosed in one envelop.
8	Payment terms : 90% payment after receipt of finished material by BHEL with documents like Test Certificates/Guarantee Certificates and original bills, MRC within 45 days subject to final acceptance from BHEL quality at BHEL Site and BHEL store. Payment shall be made based on BHEL approved drawing and approved billing break-up. In no case interest for overdue period shall be borne by BHEL if there is delay on the part of BIDDER in submitting, necessary documents / accountal statement to the BHEL. Balance 10% shall be paid after clearance of any quality deficiency (like poor packing) in the supplied lot and successful erection and commissioning of NSPBD at site and. Any deviation in payment terms will make offer liable to be rejected.
9	Late Delivery Penalty: The delivery of goods shall be made strictly as per time limit specified in delivery schedule. Failure to supply within this period will make the supplier liable to a penalty of ½% (half percent) of the total order value per week of delay or part thereof subject to a maximum of 10% of the total order value for the reasons attributable to the party.
10	BHEL reserves the following rights: (a) To go for reverse auction without opening the sealed "Price Bids". (b) To reject or accept any or all price bids or part thereof without assigning any reasons thereof. (c) To terminate the PO by giving a notice of 15 days if the performance of the BIDDER is found to be unsatisfactory.
11	Bidder to confirm to supply the Galvanized Foundation bolts and busduct supporting structure alongwith hardware in the first lot of supply.
12	Bidder shall have to submit the bank guarantee of 5% amount of the total PO value as performance bank guarantee. BG will be returned after BHEL customer's guarantee period is over and successful completion of PO and successful completion of erection and commissioning of NSPBD at site. Any deposit against PO will not carry any interest.

13	No further subcontracting of manufacturing and supply of busduct shall be allowed beyond the premises of BIDDER except for silver plating / tinning of busbars. If at any point of time during the currency of PO (manufacturing testing & delivery cycle time), it is found by BHEL that further subcontracting is being done by the BIDDER, the PO with said BIDDER will be terminated with immediate effect & BHEL will delist such BIDDER.
14	Complete 100% order of total scope shall be placed on the successful L1 bidder.
15	In case of force majeure BHEL can terminate the PO at any stage.


31/10/14

For BHEL: _____
For Bidder: _____
Date: _____

UNPRICE BID FORMATE:

UNPRICE BID FORMATE for item - (A) of scope of supply as per annexure-A at sl. no. 1,2,3 & 4		
SL. NO.	PRICE COMPONENT	PRICE
1a	Basic Price of complete scope of	A1
2a	Excise Duty on above Rs. @ --- /- as applicable	B1
3a	CST/VAT on above Rs. --- /- on sl. no. (1+2) as applicable	C1
4a	Any Other taxes if any and as applicable	D1
5a	Total Ex-works price	A1+B1+C1+D1
6a	Fraight FOR BHEL Rudrapur and Insurance	E1
7a	FOR BHEL Rudrapur Price	A1+B1+C1+D1+E1
8a	Price per running meter length of busduct assembly and its supporting structure shall be calculated as per formula = (Landed cost FOR BHEL Rudrapur x 0.8 / total length of busduct as per tender enquiry)	F1
9a	Total price value of sum of all above from sl. no. 1a to 8a	X1
UNPRICE BID FORMATE for item - (B) of scope of supply as per annexure-A at sl. no. 1,2,3 & 4		
SL. NO.	PRICE COMPONENT	PRICE
1b	Basic Price of complete scope of	A2
2b	Excise Duty on above Rs. @ --- /- as applicable	B2
3b	CST/VAT on above Rs. --- /- on sl. no. (1+2) as applicable	C2
4b	Any Other taxes if any and as applicable	D2
5b	Total Ex-works price	A2+B2+C2+D2
6b	Fraight FOR BHEL Rudrapur and Insurance	E2
7b	FOR BHEL Rudrapur Price	A2+B2+C2+D2+E2
8b	Price per running meter length of busduct assembly and its supporting structure shall be calculated as per formula = (Landed cost FOR BHEL Rudrapur x 0.8 / total length of busduct as per tender enquiry)	F2
9b	Total price value of sum of all above from sl. no. 1b to 8b	X2
	Total landed cost for item (A) and item (B)	X1 + X2

PRICE BID FORMATE:

PRICE BID FORMATE for item - (A) of scope of supply as per annexure-A at sl. no. 1,2,3 & 4		
SL. NO.	PRICE COMPONENT	PRICE
1a	Basic Price of complete scope of	A1
2a	Excise Duty on above Rs. @ --- /- as applicable	B1
3a	CST/VAT on above Rs. --- /- on sl. no. (1+2) as applicable	C1
4a	Any Other taxes if any and as applicable	D1
5a	Total Ex-works price	A1+B1+C1+D1
6a	Fraight FOR BHEL Rudrapur and Insurance	E1
7a	FOR BHEL Rudrapur Price	A1+B1+C1+D1+E1
8a	Price per running meter length of busduct assembly and its supporting structure shall be calculated as per formula = (Landed cost FOR BHEL Rudrapur x 0.8 / total length of busduct as per tender enquiry)	F1
9a	Total price value of sum of all above from sl. no. 1a to 8a	X1

PRICE BID FORMATE for item - (B) of scope of supply as per annexure-A at sl. no. 1,2,3 & 4		
SL. NO.	PRICE COMPONENT	PRICE
1b	Basic Price of complete scope of	A2
2b	Excise Duty on above Rs. @ --- /- as applicable	B2
3b	CST/VAT on above Rs. --- /- on sl. no. (1+2) as applicable	C2
4b	Any Other taxes if any and as applicable	D2
5b	Total Ex-works price	A2+B2+C2+D2
6b	Fraight FOR BHEL Rudrapur and Insurance	E2
7b	FOR BHEL Rudrapur Price	A2+B2+C2+D2+E2
8b	Price per running meter length of busduct assembly and its supporting structure shall be calculated as per formula = (Landed cost FOR BHEL Rudrapur x 0.8 / total length of busduct as per tender enquiry)	F2
9b	Total price value of sum of all above from sl. no. 1b to 8b	X2
	Total landed cost for item (A) and item (B)	X1 + X2

ANNEXURE-1 . (A C)		
AC BD (ET to ET Panel) : 5500 Amps		
	Unit	qty.
Straight run of busduct	Mtrs	44
90 degree bend	bends	8
Flexible termination at ET end	Sets	2
Flexible termination at Exctn Panel end	Sets	2
Rubber Bellow Assembly at ET end	Sets	2
Rubber Bellow Assembly at Ectn. Panel end	Sets	2
Support Structure Galvanised (approx qty given)	Tons	8
** ANY OTHER MATERIAL REQUIRED TO MAKE THE EQUIPMENT FUNCTIONAL SHALL BE IN VENDOR SCOPE OF SUPPLY.		

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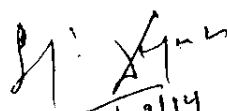
**SUPPLY OF COMPLETE AC NON SEGREGATED PHASE BUSDUCT –
850V, 5500A, TP**

ANNEXURE-2 (AC)

SL NO.	DESCRIPTION	SHEET NO.
1	LAYOUT OF AC NSPBD	1
2	FOUNDATION LAYOUT OF AC NSPBD	2
3	TECHNICAL DATA SHEET	3-4
4	DETAIL OF EXCITAION TRANSFORMER	5
5	DETAIL OF EXCITATION PANEL	6

6. LIST OF DOCUMENTS TO BE SUBMITTED AFTER AWARD OF ORDER
(7

7. PAINTING SPECIFICATION
(AS APPLICABLE FOR INDOOR ERMF. 8

By: 
30/07/14

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ANNEXURE-1 (DC)		
DC BD (ET Panel to Generator Excitation system): 5500 Amps		
	Unit	Qty.
Straight run of busduct (KINDLY SEE NOTE-1 IN LAYOYT DRAWING-BHEL/RU/NSPBD/DC/001)	Mtrs	25
90 degree bend	bends	8
Flexible termination at ET panel end	Sets	2
Flexible termination at Generator excitation system	Sets	2
Rubber Bellow Assembly at ET panel end	Sets	2
Support Structure Galvanised (approx qty given)	Tons	8
** ANY OTHER MATERIAL REQUIRED TO MAKE THE EQUIPMENT FUNCTIONAL SHALL BE IN VENDOR SCOPE OF SUPPLY.		

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**SUPPLY OF COMPLETE DC NON SEGREGATED PHASE BUSDUCT –
500V, 5500A, DP**

ANNEXURE-2 (DC)

SL NO.	DESCRIPTION	SHEET NO.
1	LAYOUT OF AC NSPBD	1
2	FOUNDATION LAYOUT OF AC NSPBD	2
3	TECHNICAL DATA SHEET	3-4
4	DETAIL OF GENERATOR PANEL	5
5	DETAIL OF EXCITATION PANEL	6

11.8.7-2



for the above mentioned
work, the contractor has
submitted the following
documents for the
approval of the
competent authority.

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NCC	SPECIFICATION FOR ISOLATED PHASE BUSDUCT INCLUDING NGT/NGR	Specification No: T658000-DC01-00-BAA-142010		 L&T-S&L
	DRAWINGS & DOCUMENTATION REQUIREMENTS	Rev No: 0	Date : 31-JUL-12	
	2 X 660 MW NCC POWER PROJECT	Volume : II	Sec: C4	
		Sheet 8 of 9		

3.3.4	Control schematics and wiring diagrams
3.3.5	Rating Plate drawing
3.3.6	Manufacturing & Inspection Schedule
3.3.7	Technical literature and catalogues of all bought out items
3.3.8	Type test certificates for identical rating
3.3.9	Transportation and shipping dimensions & weights
3.3.10	Quality Assurance Plan
3.3.11	Shop Test Results - records and reports of all inspections, examinations, and tests performed by or for Vendor, including material test reports
3.3.12	Operation and Maintenance Manual
3.3.13	Erection and Commissioning Manual
3.4	AC and DC Busduct
3.4.1	Confirmed Technical Particulars datasheet as per specifications
3.4.2	Bus duct layout details drawing with details of interconnection to various equipment, weight, plan, front elevation, end elevation view, dimension of bus duct, earthing terminals, bill of materials.
3.4.3	Name plate drawing
3.4.4	Termination / Interface diagrams
3.4.5	Temperature rise calculations for the selected cross section of the bus bar.
3.4.6	Short circuit force calculations to justify the span-length of bus bar support insulators for Instantaneous peak Short circuit forces
3.4.7	Heat dissipation calculation.
3.4.8	Busduct loss estimation calculation (for maximum conductor temperature & maximum enclosure temperature).
3.4.9	Conductor and enclosure diameter and thickness calculation.
3.4.10	Inductive Reactance calculation.
3.4.11	Capacitive Reactance calculation
3.4.12	Calculation of Voltage Drop
3.4.13	Technical literature and catalogues.
3.4.14	Routine test certificates.
3.4.15	Type test certificates for identical rating.
3.4.16	Transportation and shipping dimensions & weights.
3.4.17	Manufacturing & Inspection Schedule.
3.4.18	Quality Assurance Plan.
3.4.19	Shop Test Results - records and reports of all inspections, examinations, and tests performed by or for the Vendor.
3.4.20	Erection and Commissioning Manual.
4.0	C&I
4.1	Not Applicable.
5.0	Civil / Structural /Architectural
5.1	Layout for Busduct support for Unit-1&2
5.2	Design calculation and drawing for Busduct supporting structure.

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(Indoor Electrical Equipment i.e Switch gears, all Panels, PLC

Cabinets, Control Desk & other BOP C&I panels and Field Instruments etc.)

Surface Preparation	:	Chemical Cleaning followed by phosphating
Primer	:	One (1) Coat of Zinc Silicate (80% Zinc content) Dry Film thickness: 50 microns
Finish Paint (Outer surface)	:	Two (2) Coats of Epoxy Powder coating. Dry Film thickness: 25 microns each coat
Finish Paint (Inner surface)	:	Two (2) coats of Synthetic Enamel finish paint Dry Film thickness: 25 microns each coat
Total Dry Film thickness of painting	:	100 microns

INDOOR

(Outdoor Electrical Equipment i.e Transformers, Switchyard equipment, Motors etc.)

Surface Preparation	:	Blast Cleaning
Primer	:	One (1) Coat of Zinc Silicate (80% Zinc content) Dry Film thickness: 50 microns.
Intermediate Coat	:	One (1) coat of Epoxy Micaceous Iron oxide Dry Film thickness: 70 microns.
Finish Paint	:	One (1) Coats of Aliphatic 2 pack Polyurethane finish paint Dry Film thickness: 30 microns
Total Dry Film thickness of painting	:	150 microns

OUTDOOR

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