



RRVUNI
2X660 MW SURATGARH TPS
OIL FILLED SERVICE TRANSFORMER

SPECIFICATION NO. PE-TS-392-302-E001 (REV0)

ANNEXURE - A

TENDER ENQUIRY NO. PE/PG/SG/E-4755/14 DATED 31.03.15
BOQ-CUM-PRICE SCHEDULE : TRANSFORMERS

Sl. No.	ITEM DESCRIPTION	QUANTITY	ORDER QUANTITY	UNIT PRICE (EX WORKS) Rs.	TOTAL PRICE(EX WORKS)	ED@12.5% INCL CESS	CST@2% AGAINST FORM C/E1 OR VAT@...% OR SERVICE TAX@12.36%, whichever is applicable	FREIGHT @...% OF TOTAL EX WORKS INCL SERVICE TAX	TOTAL FOR PRICE
									6=2+4+5
1.0	2000KVA, 11KV/6.9KV, 3 phase, 2 winding, outdoor, ONAN, Z=6.0%, Dyn11, OFF Circuit taps (+/-)5% in steps of 2.5% (with cable box type HV and with busduct type LV termination)	NOS.	2			NIL AGAINST PAC			
2.0	3500KVA, 11KV/6.9KV, 3 phase, 2 winding, outdoor, ONAN, Z=6.0%, Dyn11, OFF Circuit taps (+/-)5% in steps of 2.5% (with cable box type HV and with busduct type LV termination)	NOS.	2			NIL AGAINST PAC			
	TOTAL :(1.0 + 2.0)					NIL AGAINST PAC			

NOTES: 1. ABOVE QUANTITY OF TRANSFORMERS SHALL BE FOR ORDERING. VARIATION IN RATING AND QUANTITY MAY BE TO THE EXTENT OF ±30% OF THE TOTAL ORDER VALUE.

2. BIDDER TO NOTE THAT THE COST OF TRANSFORMER SHALL INCLUDE THE COST OF FOLLOWING SPECIAL TESTS AS ROUTINE TESTS:

- a) OIL LEAKAGE TEST FOR 24 HRS
- b) JACKING TEST ON TRANSFORMERS LOAD BEARING MEMBER
- c) REPEAT NO LOAD TEST AFTER ELECTRICAL TESTS
- d) MEASUREMENT OF CAPACITANCE & TAN DELTA TO DETERMINE CAPACITANCE BETWEEN WINDING AND EARTH

THE ABOVE MENTIONED TEST SHALL BE CARRIED OUT ON ALL TRANSFORMERS WITHOUT ANY ADDITIONAL COST. BIDDER SHALL QUOTE ACCORDINGLY.

3. THE TYPE TEST CERTIFICATES TO BE SUBMITTED BY BIDDER WHICH SHOULD HAVE BEEN CONDUCTED ON SIMILAR TRANSFORMERS WITHIN LAST TEN YEARS. THESE REPORTS SHOULD BE FOR THE TESTS CONDUCTED ON THE EQUIPMENT SIMILAR TO THOSE PROPOSED TO BE SUPPLIED UNDER THIS CONTRACT AND TEST(S) SHOULD HAVE BEEN EITHER CONDUCTED AT AN INDEPENDENT LABORATORY OR SHOULD HAVE BEEN WITNESSED BY A CLIENT.

IRRESPECTIVE OF BIDDER FURNISHING VALID TYPE TEST REPORT, BIDDER TO CONDUCT ALL THE TYPE TEST/SPECIAL TEST INDICATED AT ANNEXURE-C. THESE TESTS SHALL BE CONDUCTED AT THIRD PARTY LAB OR IN PRESENCE OF CLIENT/ EMPLOYER'S REPRESENTATIVE AND VENDOR TO SUBMIT THE REPORTS FOR APPROVAL.

4. TYPE TESTS / SPECIAL TESTS ON TRANSFORMERS AS LISTED ANNEXURE-C SHALL BE DEEMED TO BE INCLUDED IN TRANSFORMER PRICES. THESE TESTS ARE:

- a) TANK PRESSURE TEST
- b) TANK VACUUM TEST
- c) MEASUREMENT OF ACOUSTIC NOISE LEVEL AS PER NEMA TR-1
- d) TEMPERATURE RISE TEST AT A TAP CORRESPONDING TO MAXIMUM LOSSES
- e) DIELECTRIC TYPE TEST INCLUDING CHOPPED WAVE IMPULSE TEST ON ALL THREE PHASES

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ANNEXURE -B

TENDER ENQUIRY NO. PE/PG/SG/E-4755/14 DATED 31.03.15
BOQ-CUM-PRICE SCHEDULE : EXTRA OIL

Sr. No.	ITEM DESCRIPTION	QUANTITY	ORDER QUANTITY	COST OF 10% EXTRA OIL PER TRANSFORMER Rs.	TOTAL COST OF 10% EXTRA OIL Rs.	ED@.....% INCL CESS (on self manufactured items only)	CST@2% AGAINST FORM C/IEI or VAT @.....%, whichever is applicable	FREIGHT @.....% OF TOTAL EX WORKS INCL SERVICE TAX	TOTAL FOR PRICE 6=2+4+5
1.0	EXTRA OIL 10 % EXTRA TRANSFORMER OIL IN SEALED NON RETURNABLE STANDARD DRUMS FOR 2000KVA, 11KV/6.9KV, 3 phase, 2 winding, outdoor, ONAN, Z=6.0%, Dyn11, OFF Circuit taps (+/-)5% in steps of 2.5% (with cable box type HV and with busduct type LV termination)	NOS.	2			NIL AGAINST PAC			
2.0	3500KVA, 11KV/6.9KV, 3 phase, 2 winding, outdoor, ONAN, Z=6.0%, Dyn11, OFF Circuit taps (+/-)5% in steps of 2.5% (with cable box type HV and with busduct type LV termination)	NOS.	2			NIL AGAINST PAC			
	TOTAL (1.0 + 2.0)					NIL AGAINST PAC			

NOTES Bidder shall supply 10% extra oil as per the quoted price. Quantity of extra oil shall be subject to approval during detail engineering.

J. K. Singh



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ANNEXURE-C

OIL FILLED SERVICE TRANSFORMER

TENDER ENQUIRY NO. PE/PG/SG5/E-4755/14 DATED 31.03.15

BOQ-CUM-PRICE SCHEDULE : TYPE TESTS/ SPECIAL TESTS ON TRANSFORMERS

Sr. No.	ITEM DESCRIPTION	11.0/ 6.9 KV 2000 KVA	11.0/ 6.9 KV 3500 KVA
		1	2
1.0	TANK PRESSURE TEST	Applicable	Applicable
2.0	TANK VACUUM TEST	Applicable	Applicable
3.0	MEASUREMENT OF ACOUSTIC NOISE LEVEL AS PER NEMA TR-1	Applicable	Applicable
4.0	TEMPERATURE RISE TEST AT A TAP CORRESPONDING TO MAXIMUM LOSSES.	Applicable	Applicable
5.0	DIELECTRIC TYPE TEST INCLUDING CHOPPED WAVE IMPULSE TEST ON ALL THREE PHASES	Applicable	Applicable

NOTES:

- a) THE TYPE TEST CERTIFICATES TO BE SUBMITTED BY BIDDER WHICH SHOULD HAVE BEEN CONDUCTED ON SIMILAR TRANSFORMERS WITHIN LAST TEN YEARS. THESE REPORTS SHOULD BE FOR THE TESTS CONDUCTED ON THE EQUIPMENT SIMILAR TO THOSE PROPOSED TO BE SUPPLIED UNDER THIS CONTRACT AND TEST(S) SHOULD HAVE BEEN EITHER CONDUCTED AT AN INDEPENDENT LABORATORY OR SHOULD HAVE BEEN WITNESSED BY A CLIENT.
- IRRESPECTIVE OF BIDDER FURNISHING VALID TYPE TEST REPORT, BIDDER TO CONDUCT ALL THE TYPE TEST/SPECIAL TEST INDICATED AT ANNEXURE-C. THESE TESTS SHALL BE CONDUCTED AT THIRD PARTY LAB OR IN PRESENCE OF CLIENT/ EMPLOYER'S REPRESENTATIVE AND VENDOR TO SUBMIT THE REPORTS FOR APPROVAL.
- b) TYPE TESTS / SPECIAL TESTS ON TRANSFORMERS AS LISTED IN ANNEXURE-C SHALL BE DEEMED TO BE INCLUDED IN TRANSFORMER PRICES.
- c) BIDDER TO NOTE THAT NO SEPARATE TYPE TEST CHARGES SHALL BE PAYABLE.

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ANNEXURE - D

TENDER ENQUIRY NO. PE/PG/SG/SE-4755/14 DATED 31.03.15
BOQ-CUM-PRICE SCHEDULE : MANDATORY SPARES

Sr. No.	ITEM DESCRIPTION	QUANTITY	UNIT PRICE (EX WORKS) Rs.	TOTAL PRICE (EX WORKS)	ED@.....% INCL CESS	CST@2% AGAINST FORM C/1 or VAT @.....%, whichever is applicable	FREIGHT @.....% OF TOTAL EX WORKS INCL SERVICE TAX	TOTAL FOR PRICE 6=2+4+5
1.0	HV bushing with metal parts & gaskets	1 no each None	1	2	3	4	5	6=2+4+5
a)	11.0/6.9KV, 3500KVA	1 no.			NIL AGAINST PAC			
b)	11.0/6.9KV, 2500KVA	1 no.			NIL AGAINST PAC			
2.0	LV bushing with metal parts & gaskets	1 no each type			NIL AGAINST PAC			
a)	11.0/6.9KV, 3500KVA	1 no.			NIL AGAINST PAC			
b)	11.0/6.9KV, 2500KVA	1 no.			NIL AGAINST PAC			
3.0	Neutral bushing with metal parts & gaskets	1 no each type			NIL AGAINST PAC			
a)	11.0/6.9KV, 3500KVA	1 no.			NIL AGAINST PAC			
b)	11.0/6.9KV, 2500KVA	1 no.			NIL AGAINST PAC			
4.0	WTI	1 set			NIL AGAINST PAC			
a)	11.0/6.9KV, 3500KVA	1			NIL AGAINST PAC			
b)	11.0/6.9KV, 2500KVA	1			NIL AGAINST PAC			
5.0	OTT	1 set			NIL AGAINST PAC			
a)	11.0/6.9KV, 3500KVA	1			NIL AGAINST PAC			
b)	11.0/6.9KV, 2500KVA	1			NIL AGAINST PAC			
6.0	EXPLOSION VENT DIAPHRAGM/ PRV	1 no. of each type			NIL AGAINST PAC			
7.0	Magnetic oil gauge	1 no. of each type			NIL AGAINST PAC			
8.0	Buchholz relay	1 no. for each			NIL AGAINST PAC			
9.0	Set of gaskets	1 set			NIL AGAINST PAC			
10.0	Set of valves	1 set			NIL AGAINST PAC			
11.0	SILICA GEL BREATHER	1 no.			NIL AGAINST PAC			
	TOTAL (1.0 TO 11.0)				NIL AGAINST PAC			

NOTES: WHEREVER 'SET' IS INDICATED ABOVE, IT MEANS THE TOTAL PARTS / ACCESSORIES REQUIRED TO REPLACE THE PARTICULAR ITEM FOR A GIVEN EQUIPMENT.

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ANNEXURE-F

OIL FILLED SERVICE TRANSFORMER

TENDER ENQUIRY NO. PE/PG/SG/E-4755/14 DATED 31.03.15

BOQ-CUM-PRICE SCHEDULE : TYPE TESTS/ SPECIAL TESTS ON TRANSFORMERS

Sr. No.	ITEM DESCRIPTION	11.0/ 6.9 KV 2000 KVA	11.0/ 6.9 KV 3500 KVA
1.0	PRD OPERATION TEST(APPLICABLE FOR 2000KVA & 2500KVA TRANSFORMER)	Applicable	Applicable
2.0	DEGREE OF PROTECTION (IP 55)TESTS ON MARSHALLING BOX	Applicable	Applicable
3.0	DEGREE OF PROTECTION (IP 55)TESTS ON CABLE BOX	Applicable	Applicable
4.0	DGA TEST ON OIL BEFORE AND AFTER TEMPERATURE RISE TEST	Applicable	Applicable
5.0	CAPACITANCE AND TAN DELTA OF WINDINGS	Applicable	Applicable
6.0	MEASUREMENT OF HARMONICS CURRENT IN NO LOAD CURRENT	Applicable	Applicable
7.0	ZERO SEQUENCE IMPEDANCE	Applicable	Applicable
8.0	SHORT CIRCUIT TEST**	Applicable	Applicable

NOTES:

- 1) THE TYPE TEST CERTIFICATES TO BE SUBMITTED BY BIDDER WHICH SHOULD HAVE BEEN CONDUCTED ON SIMILAR TRANSFORMERS WITHIN LAST TEN YEARS. THESE REPORTS SHOULD BE FOR THE TESTS CONDUCTED ON THE EQUIPMENT SIMILAR TO THOSE PROPOSED TO BE SUPPLIED UNDER THIS CONTRACT AND TEST(S) SHOULD HAVE BEEN EITHER CONDUCTED AT AN INDEPENDENT LABORATORY OR SHOULD HAVE BEEN WITNESSED BY A CLIENT. HOWEVER IF THE CONTRACTOR IS NOT ABLE TO SUBMIT REPORT OF THE TYPE TEST(S) CONDUCTED WITHIN LAST TEN YEARS FROM DATE OF BID OPENING, OR IN THE CASE OF TYPE TEST REPORT(S) ARE NOT FOUND TO BE MEETING THE SPECIFICATION REQUIREMENTS, THE CONTRACTOR SHALL CONDUCT ALL SUCH TESTS (LISTED UNDER S.NO 1 TO 7, EXCEPT SHORT CIRCUIT TEST) UNDER THIS CONTRACT AT NO ADDITIONAL COST TO THE EMPLOYER
- 2) **CHARGES FOR CARRYING OUT SHORT CIRCUIT TEST SHALL BE PAYABLE BASED ON ACTUAL INVOICE FROM DESIGNATED LABORATORIES (CPRI, BHOPAL/ CPRI, BANGLORE/ ERDA, VADODARA) WITH AN ADDITIONAL LUMP SUM AMOUNT OF 5% OF EX-WORKS PRICE OF TRANSFORMER BEING TESTED TO COVER HANDLING COSTS (TRANSPORTATION, INSURANCE ETC.).