

## Corrigendum-II

### Sr No. 1:- Clause 5.3 (Particulars of the System) of RDSO Specs. No TI/SPC/PSI/30TRN/2070

The rating and general data of the transformer shall be as follows:

1. Type : ONAN cooled, single phase, step-down power transformer, double limb wound, core- type for outdoor installation. The transformer shall be designed for ONAN rating indicated in clause -1.1 for use at a future date.
  2. Windings : Uniformly insulated concentric disc duly interleaved/ inter shielded.
  3. Rated frequency, Hz : 50+/-3%
  4. Rated primary voltage : 33  
Un, KV
  5. Highest Primary System : 52  
voltage Um, kv
  6. Rated secondary voltage : 27.5  
(at no.-load(, kv
  7. Rated power, MVA : 3/5
  8. Rated current at the principal tapping
    - A Rated Primary Current , A 91/152
    - B Rated secondary Current, A 120/200
  9. Maximum value of Percentage Impedence at the principal tap position (12.5+/-0.5)% at principal tap
  10. Non-cumulative over load capacity
    1. 150% rated load for 15 min.
    2. 200% rated load for 5 minafter the transformer has reached steady temperature on continuous operation at rated load (i.e. at rated power)
- Note:-** Non-cumulative power load means overload which occur at sufficient interval of time apart such that the temperature rise limits, both of oil and winding do not exceed the values specified in clause 5.3 (13) of this specification. The interval of time between two successive non cumulative overloads shall not be less than 3 hours.
11. Polarity : Subtractive
  12. Tappings : A separate tapped winding on the primary winding to give  
(On Load) rated secondary voltage for variation in primary voltage as detailed in para 3.10
  13. Temperature rise : The temperature rise over an ambient temperature

of 50° C both at rated and overload conditions shall not exceed the value indicated below :

1. Winding : 50° C at rated load, and 60° C for over loads as specified in clause 5.1 (10) (temperature measured by resistance method).
2. Top oil : 40° C (temperature rise measured by thermometer).
3. Current carrying parts in air : 40° C (temperature rise measured by thermometer).

14. Maximum permissible losses at rated frequency, voltage, current and at the principal tapping at 33KV

1. Max. No-load loss (KW)	8	
2. Max. Load Loss (KW)		35
3. Total Loss (kw)		45

15. Ability to withstand short circuit

1. Thermal Ability : 5 s
2. Dynamic Ability : 0.25 s

16. Flux density at rated voltage and frequency : Shall not exceed 1.55 tesla at principal tapping (Flux density has not to exceed 1.90 tesla at any of the taps at extreme voltage condition)

17. Current density in the windings at rated current : Shall preferable not exceed 2.5 A/mm<sup>2</sup>

18. Acoustic sound level when energized at rated voltage and at no-load : Not more than 75 dB at a distance of one meter.

19. Bushing :

Item	Primary
1. Type	OIP Condenser
2. Highest voltage for equipment Um, KV	52
3. Rated current, A	300
4. Minimum creepage distance in air,	1300 mm

20. Bushing type current transformer for different protection of transformer:

	Item	Secondary/ Primary
1.	Highest voltage for equipment Um, kV	52
2.	CT Ratio	3000/5
3.	Frequency, Hz	50+/-3%
4.	Class of accuracy as per IS 2705 (Part IV)	PS
5.	Minimum knee-point EMF, V	360
6.	Maximum excitation current at knee-point voltage, A	0.100
7.	Maximum resistance of the secondary winding ohm	0.9

Sr No. 2 :-

**BDS ITB 4.1**

<b>Existing</b>	<b>Modified and To be Read as</b>
<p>Maximum number of members in the JV shall be: 3 (Three)</p> <p>Lead member must have a minimum of 40% participation in the JV / Consortium</p> <p>Each member shall have minimum 20% participation.</p> <p>Members having less than 20% participation will be termed as non-substantial member and will not be considered for evaluation.</p> <p>In case of JV / Consortium, change in constitution or percentage participation in JV shall not be permitted at any stage after their submission of Bid otherwise the Bidder shall be treated as non-responsive.</p> <p>The other members of the JV/Consortium apart from the lead member must meet the minimum 20% of experience criteria as stipulated in Section-III, Part-1</p>	<p>Maximum number of members in the JV shall be: 3 (Three)</p> <p>Lead member must have a minimum of 40% participation in the JV / Consortium</p> <p>Each member shall have minimum 20% participation.</p> <p>Members having less than 20% participation will be termed as non-substantial member and will not be considered for evaluation.</p> <p>In case of JV / Consortium, change in constitution or percentage participation in JV shall not be permitted at any stage after their submission of Bid otherwise the Bidder shall be treated as non-responsive.</p>

Sr No. 3:-

**BOQ , Section -III Traction Sub-Station TSS Work**

<b>Ref</b>	<b>Existing</b>	<b>Modified and to be read as</b>
11 (f)	Erection of 132 KV Support/ Post Insulator	Erection of 33 KV Support/ Post Insulator
11(g)	Supply & Erection of 132 KV termination with disc insulators and with adjuster.	Supply & Erection of 33 KV termination with disc insulators and with adjuster.
11(h)	Supply & Erection of 132 KV termination with disc insulators and with adjuster.	Supply & Erection of 33 KV termination with disc insulators and with adjuster.
13 (f) (i)	Supply and erection of Earthing Blade assembly for 132 KV DP isolator against	Supply and erection of Earthing Blade assembly for 33 KV DP isolator against

13 (f) (ii)	Extra for Supply and erection of Earthing Blade assembly for 132 KV DP isolator against Item No.13(f) (i) above	Extra for Supply and erection of Earthing Blade assembly for 33 KV DP isolator against Item No.13(f) (i) above
18 (c)	Erection of 132 KV Double Pole SF6 gas type Circular Breaker	Erection of 33 KV Double Pole SF6 gas type Circular Breaker
26 (c) (xviii)	Supply & Erection of 132 KV system TEECONNECTOR to suit Panther to ZEBRA (28.58mm dia) ACSR conductor (Drg. No. CEE/TRD/TSS/2/99).	Supply & Erection of 132 KV system TEECONNECTOR to suit Panther to ZEBRA (28.58mm dia) ACSR conductor (Drg. No. CEE/TRD/TSS/2/99).
32/18(c)	Erection of 132 kV Double Pole SF6 gas type Circuit Breaker under power block	Erection of 33 kV Double Pole SF6 gas type Circuit Breaker under power block
32/20(c)	Erection of 120 kV Lightning Arrestors under power block	Erection of 52 kV Lightning Arrestors under power block
45(b)	Erection of 132KV Current Transformer of all ratings.	Erection of 33KV Current Transformer of all ratings.
46.	Supply, Erection, testing and commissioning of 132kV/ 25kV, 21.6/30.24 MVA Traction power transformer.	Supply, Erection, testing and commissioning of 33kV/ 25kV, 3/5 MVA Traction power transformer.
11 (fx)	supply of 132 KV support/post insulator	supply of 33 KV support/post insulator
13 (f)	Supply of 132 kV Double Pole isolator-1250 A along with terminal connectors	Supply of 33 kV Double Pole isolator-1250 A along with terminal connectors
45 (a) (iii)	Supply of 132 kV Current transformer 400-200/5A,rated burden 30V A	Supply of 33 kV Current transformer 400-200/5A,rated burden 30V A

**Sr No. 4:- BOQ , Explanatory Note of Section II & Section III (TSS and SSP Work)**

ref	Existing details	Modified details and to be read as
Item No-[c](ii)-Note	normal foundations 1:3:6	normal foundations 1:2:4
Item No. 11(f)	Erection of a 132 kV Support / Post insulator	Erection of a 33 kV Support / Post insulator
Item No. 11(f)(i)	Erection of a 220 kV Support / Post insulator	Erection of a 33 kV Support / Post insulator
Item No. 11(g):-	Supply & Erection of 132kV termination with disc insulators and adjuster	Supply & Erection of 33 KV termination with disc insulators and adjuster

Item No. 11(g)(i):-	Supply & Erection of 220 kV termination with disc insulators and adjuster	Supply & Erection of 33 kV termination with disc insulators and adjuster
Item No. 11(h):-	Supply & Erection of 132kV termination with disc insulators and without adjuster	Supply & Erection of 33kV termination with disc insulators and without adjuster
Item No.13(f)(i):-	Erection, testing & commissioning of 132 KV Double pole isolator,1250 A	Erection, testing & commissioning of 33 KV Double pole isolator,1250 A
Item No: 13(f)(ii):-	Extra for supply and Erection of earthing blade assembly for 132 KV Double pole isolator against Item No: 13(f)(i)	Extra for supply and Erection of earthing blade assembly for 33KV Double pole isolator against Item No: 13(f)(i)
Item No: 13(f)(iii):-	Erection testing and commissioning of 220 kV Double pole isolator, 1250A	Erection testing and commissioning of 33 kV Double pole isolator, 1250A
Item No.18(c)(i):-	Erection of 132 KV Double Pole SF-6 Gas / Vacuum type Circuit Breaker	Erection of 33 KV Double Pole SF-6 Gas / Vacuum type Circuit Breaker
Item No.18(c)(ii) :-	Erection of 220 KV Double Pole SF6 Gas/Vacuum type Circuit Breaker	Erection of 33 KV Double Pole SF6 Gas/Vacuum type Circuit Breaker
Item No. 20(c):-	Erection of 120 KV Lightning Arrestors	Erection of 52 KV Lightning Arrestors
Item No. 20(d):-	Erection of 198 KV Lightning Arrestors	Erection of 52 KV Lightning Arrestors
Item No. 26(c) (xviii) :	Supply & Erection of 132 KV system TEE to suit Panther to ZEBRA (28.58mm dia) ACSR conductor	Supply & Erection of 33 KV system TEE to suit Panther to ZEBRA (28.58mm dia) ACSR conductor
Item 31 u(iii)	Dismantling of 132KV (OR) 220 KV Current Transformer	Dismantling of 33KV Current Transformer
Item No: 45(b)(i):	Erection of 132 KV Current Transformer of all ratings	Erection of 33 KV Current Transformer of all ratings
Item No: 45(b)(ii):	Erection of 220 KV Current Transformer of all ratings	Erection of 33 KV Current Transformer of all ratings
Item No. 11(fx)	Supply of 132 KV Support insulator for Item no 11(f)	Supply of 33 KV Support insulator for Item no 11(f)
Item No. 11(fx)(i)	Supply of 220 KV Support insulator for Item no 11(f)(i)	Supply of 33 KV Support insulator for Item no 11(f)(i)

Item No.13 (f):	Supply of 132 KV double pole isolator -1250 A along with terminal connectors. The price shall include the cost of 132 KV operating rod. The price does not include supply of 132 KV support insulator which will be paid under item no 11 (fx)	Supply of 32 KV double pole isolator -1250 A along with terminal connectors. The price shall include the cost of 33 KV operating rod. The price does not include supply of 33 KV support insulator which will be paid under item no 11 (fx)
Item No.13 (f)(iii):	Supply of 220 KV double pole isolator -1250 A along with terminal connectors	Supply of 33 KV double pole isolator -1250 A along with terminal connectors
Item No 18[c](i):	Supply of 132 KV Double Pole SF-6 Gas Circuit Breaker	Supply of 33 KV Double Pole SF-6 Gas Circuit Breaker
Item No 18[c](ii):	Supply of 220 KV Double Pole SF-6 Gas Circuit Breaker	Supply of 33 KV Double Pole SF-6 Gas Circuit Breaker
Item No 20 (d):	Supply of 198 KV, 10 KA Lightning Arrestor	Supply of 52 KV, 10 KA Lightning Arrestor
Item No.45 (a) (iii) :	Supply of 132 KV Current Transformer, along with connectors. (400- 200/5A) Rated burden 30 VA)	Supply of 33 KV Current Transformer, along with connectors. (400- 200/5A) Rated burden 30 VA)
Item No.45 (b) (i):	Supply of 132 KV Current Transformer, along with connectors. (400- 200/5A) Rated burden 30 VA)	Supply of 33 KV Current Transformer, along with connectors. (400- 200/5A) Rated burden 30 VA)
Item No.45 (b) (ii) :	Supply of 220 KV Current Transformer, along with connectors. (400- 200/5A) Rated burden 30 VA)	Supply of 33 KV Current Transformer, along with connectors. (400- 200/5A) Rated burden 30 VA)

Sr No 5

**BOQ, Section-I, Explanatory notes for OHE work**

ref	Existing	Modified and to be read as
Item No. A-1 , (b)	Concrete for foundation and plinth in rocky soil Casting of concrete foundation in 1:3:6 ratio	Casting of concrete foundation in 1:2:4 ratio. All foundation shall be normal mix of grade M 15 (Ratio 1:2:4) under this item.
Item No. A-1(c):	Concrete for foundation and plinth in other than hard soil & rocky Soil Concrete for foundation shall be normal mix of grade M 10 (Ratio 1:3:6)	Concrete for foundation shall be normal mix of grade M 15 (Ratio 1:2:4).

Sr No 6

## Part-1 (Bidding Procedure) Section-III: Evaluation &amp; Qualification Criteria

## Clause 3.2 Existing

No.	Subject	Requirement	Single Entity	Joint Ventures (Existing or Intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
3.2	<b>Average Annual Construction Turnover</b>	<p>Minimum average annual construction turnover of (Rs.26 Crores) on the day of bid submission), calculated as total certified payments received for contracts in progress and/or completed within the last 5 [five] years, divided by 5 [five]</p> <p><b>Notes:</b>  <i>All Members put together should meet the minimum requirement as per their percentage participation.</i></p> <p><i>Example: Let Member-1 has percentage participation = M and Member-2 has =N. Let the average annual turnover of Member-1 is 'A' and that of Member-2 is 'B', then the average annual turnover of JV / Consortium will be</i></p> <p><math>= (AM+BN) / 100</math></p>	Must meet requirement	Must meet requirement	Must meet [twenty five] per cent [20%] of the requirement	Must meet [forty] per cent [40%] of the requirement	Form <a href="#">FIN – 3.2</a>

## Clause 3.2 Modified and to be read as

No.	Subject	Requirement	Single Entity	Joint Ventures (Existing or Intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
3.2	<b>Average Annual Construction Turnover</b>	<p>Minimum average annual construction turnover of (Rs.37 Crores) on the day of bid submission), calculated as total certified payments received for contracts in progress and/or completed within the last 5 [five] years, divided by 5 [five]</p>	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Form <a href="#">FIN – 3.2</a>

**Clause 3.5 Existing**

No.	Subject	Requirement	Single Entity	Joint Ventures (Existing or Intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
3.5	<b>Bid Capacity</b>	<p>The available bid capacity shall be more than Rs 20 Crores on the day of bid submission),</p> <p>Bid capacity will be calculated based on the following formula:</p> <p>Bid Capacity = 2*A*N – B</p> <p><i>Where:</i></p> <p>A = Maximum of the value of works executed in any one year during the last five financial years (updated to Bid submission date; price level assuming 5% inflation for Indian Rupees every year and 2% for foreign currency portions per year).</p> <p>N = No. of years prescribed for completion of the work = 12 months = 1 years</p> <p>B = Value of existing commitments (as on Bid submission date) for on-going works during period of 40 months w.e.f. Tender submission date</p> <p><b>Notes:</b></p> <p><i>Financial data for latest last five financial years has to be submitted by the Bidder along with audited financial statements. The financial data in the prescribed format shall</i></p>	Must meet requirement	N/A	Must meet requirement	N/A	Form <a href="#">FIN-3.1</a> Form <a href="#">FIN-3.4</a>



		<p><i>be certified by the Chartered Accountant with his stamp and signature in original.</i></p> <p><i>Value of existing commitments for on-going construction works during period of 12 months w.e.f. Bid submission date has to be submitted by the Bidder. These data shall be certified by the Chartered Accountant with his stamp and signature.</i></p> <p><i>In the case of a JV / Consortium, the above formula will be applied to each member to the extent of his proposed participation in the execution of the work. If the proposed % is not provided, equal participation will be assumed.</i></p>					
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**Clause 3.2 Modified and to be read as**

No.	Subject	Requirement	Single Entity	Joint Ventures (Existing or Intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
3.5	<b>Bid Capacity</b>	<p>The available bid capacity shall be more than Rs 20 Crores on the day of bid submission),</p> <p>Bid capacity will be calculated based on the following formula:</p> <p>Bid Capacity = 2*A*N – B</p> <p>Where:</p> <p>A = Maximum of the value of works executed in any one year during the last five financial years (updated to Bid submission date; price level assuming 5% inflation for Indian Rupees every</p>	Must meet requirement	N/A	Must meet requirement	N/A	Form <a href="#">FIN-3.1</a> Form <a href="#">FIN-3.4</a>

		<p>year and 2% for foreign currency portions per year).</p> <p>N = No. of years prescribed for completion of the work = 12 months = 1 years</p> <p>B = Value of existing commitments (as on Bid submission date) for on-going works during period of 12 months w.e.f. Tender submission date</p> <p><b>Notes:</b></p> <p><i>Financial data for latest last five financial years has to be submitted by the Bidder along with audited financial statements. The financial data in the prescribed format shall be certified by the Chartered Accountant with his stamp and signature in original.</i></p> <p><i>Value of existing commitments for on-going construction works during period of 12 months w.e.f. Bid submission date has to be submitted by the Bidder. These data shall be certified by the Chartered Accountant with his stamp and signature.</i></p> <p><i>In the case of a JV / Consortium, the above formula will be applied to each member to the extent of his proposed participation in the execution of the work. If the proposed % is not provided, equal participation will be assumed.</i></p>					
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**Clause 4.2 Existing**

No.	Subject	Requirement	Single Entity	Joint Ventures (Existing or Intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
4.2	<b>Specific Supply &amp; execution Experience<sup>1</sup></b>	Experience of satisfactory and substantial <sup>2</sup> completion of similar works as under, as a prime contractor or joint venture member <sup>3</sup> , during last 10 years as on date of Bid submission:	Must meet requirement	Must meet requirement <sup>4</sup>	Must meet requirement	N/A	Form <a href="#">EXP-4.2(a)</a>
(a)		<p>Minimum of Design, Detail Engineering, Supply, Installation, Testing and Commissioning of Power Supply system of 25kV and above Traction (Flexible OHE) Systems</p> <p>Minimum one contract for elevated / at-grade / underground sections of Metro rail or suburban rail or mainline railway of length at least 15 track-km.</p> <p>OR</p> <p>Minimum two contracts for elevated / at-grade / underground sections of Metro rail or suburban rail or mainline railway of total length at least 20 track-km.</p> <p>OR</p> <p>Minimum three contracts for elevated / at-grade / underground sections of Metro rail or suburban rail or mainline railway of total length at least 25 track-km.</p>	Must meet requirement	Must meet requirement	25%	N/A	

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**Clause 4.2 Modified and to be read as**

No.	Subject	Requirement	Single Entity	Joint Ventures (Existing or Intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
4.2	<b>Specific Supply &amp; execution Experience<sup>5</sup></b>	Experience of satisfactory and substantial <sup>6</sup> completion of similar works as under, as a prime contractor or joint venture member <sup>7</sup> , during last 10 years as on date of Bid submission:	Must meet requirement	Must meet requirement	N/A	Must meet requirement	Form <a href="#">EXP-4.2(a)</a>
(a)		<p>Minimum of Design, Detail Engineering, Supply, Installation, Testing and Commissioning of Power Supply system of 25kV and above Traction (Flexible OHE) Systems</p> <p>Minimum one contract for elevated / at-grade / underground sections of Metro rail or suburban rail or mainline railway of length at least 15 track-km.</p> <p>OR</p> <p>Minimum two contracts for elevated / at-grade / underground sections of Metro rail or suburban rail or mainline railway of total length at least 20 track-km.</p> <p>OR</p> <p>Minimum three contracts for elevated / at-grade / underground sections of Metro rail or suburban rail or mainline railway of total length at least 25 track-km.</p>	Must meet requirement	Must meet requirement	N/A	Must meet requirement	