Dedicated Freight Corridor Corporation of India Limited (A Government of India Enterprise) Addendum No. 1 Dated 31.07.2013

Addendum No. 1 Dated 31.07.2013
Addendum to the Bidding Documents for

DESIGN, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 2X25 kV TRACTION POWER SUPPLY SYSTEM, TRACTION SUB-STATIONS, AUXILIARY STATIONS, SWITCHING STATIONS, AUTO TRANSFORMER STATIONS AND SCADA SYSTEM ON DESIGN-BUILD LUMP SUM PRICE BASIS FOR REWARI – MAKARPURA (VADODARA) SECTION OF WESTERN DEDICATED FREIGHT CORRIDOR

ELECTRICAL AND MECHANICAL WORKS CONTRACT

Ref.: ICB No. EM P-4

SI. No.	Vol. No.	Section No.	Page No.	Clause No.	Item	Addendum to the Bidding Documents	
1	1	1	33	ITB 20.2 (BDS)	Format and Signing of Bid	Add at the end of the ITB 20.2 (BDS): "All the documents pertaining to the information and experience, as claimed by the Bidder, shall also be signed by the Authorized Signatory of the respective Partners/Specialist Sub-Contractor/Specialist Sub Design-Consultant to whom the information and claimed experience actually belongs to."	
2	ı	1	34	New ITB 25.5 (BDS)	Bid Opening	Add new ITB 25.5 (BDS) as under: Add the following at the end of first para of ITB 25.5: "The Employer shall also read out the guaranteed maximum losses i.e. Maximum No-Load Loss in watt [I] and Maximum Load-Loss in watt [C] in Traction Transformers and Auto Transformers, as declared by the Bidders in the Form I-B-6(4) of Volume I (Part ½) of the Technical Bid."	
3	I	1	36	ITB 31.3 (BDS)	Non-material Non-conformities	Add the following after ITB 31.3 (BDS): "The Employer shall also rectify the Bid with respect to quantifiable Capitalized Cost of the losses in Traction	

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						Transformers and Auto Transformers as calculated by the Employer. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect: a) The price of a missing or non-conforming item or component; and b) Capitalized Cost of the losses in Traction Transformers and Auto Transformers as calculated by the Employer in accordance with the clause 6.6 of Section 9 (Volume III), by using the value of maximum guaranteed 'No Load Losses' and maximum 'Load Losses' in watts, I and C respectively, as declared by the bidder in the Form I-B-6(4) of Section 3: Bid Forms of Volume I (Part ½). The Capitalized Cost of the losses as calculated by the Employer in accordance to the above shall be final and binding on the Bidder."	
4	I	1	36	BDS (ITB 35.2)	Evaluation of Price Bids	Add following at the end of ITB 35.2 (BDS): "Replace sub-para (e) with the following: (e) Price adjustment due to: (i) Quantifiable non material nonconformities; and (ii) Capitalized Cost of the losses in Traction Transformers and Auto Transformers in accordance with ITB 31.3 & ITB 31.3 (BDS): and"	
5	I	2	56	Stage 4: Technical Evaluation	Sub-para 4.1(c)	Replace the word "seven" with "eight", appearing in second line of sub-para 4.1(c).	
6	ı	2	56	Stage 4: Technical Evaluation	Para 4.1: Procedure for Technical Evaluation	Add a new sub-para (f) as under: "(f) The guaranteed maximum losses i.e. Maximum no-load loss in watt [I] and Maximum load-loss in watt [C] in Traction Transformers and Auto Transformers, as declared by the	

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140.	110.	140.	110.			Bidder in the Form I-B-6(4) of Volume I (Part ½), shall r be used for scoring marks for 'Technical Evaluation Item Instead the same shall be used during the Stage Financial Evaluation in accordance with ITB 31.3 (BDS)."		
7	I	2	65	Stage 5: Financial Evaluation	Clause 5.3 (a): Part 2 – Detailed Financial Evaluation	Add a new sub-para (v) as under: "(v) Adjustment of the Bid Price in accordance with ITB 3 (BDS)."		
8	I	3	89	Sub-para (c) under :"SCADA system for Railway Traction or any other power plant monitoring and control commissioned in any one year (12 consecutive months)"	Form EXP - 3 (contd.) Specific Experience in Supply, Installation, Testing and Commissioning for Key Activities	Replace "8 RTU's" with "20 RTUs" appearing in first line of sub-para (c)		
9	I	3	90	Form EXP-4 [3.2 (e) (iv)]: General Design Experience	In the table "Contract with Similar Key Activities", under the column "Information" and against the row/item "Role in Contract"	Replace the word "Management Contractor" with "JV Partner/Design Consultant/Design sub-consultant/Inhouse designer."		
10	I	3	92	Form EXP-5 [3.2 (e) (v)]: Specific Design Experience in Key Activities	In the table "Contract with Similar Key Activities", under the column "Information" and against the row/item "Role in Contract"	Replace the word "JV Partner" with "JV Partner/Sub-contractor"		

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11	I	3	93	Sub-para (c) under "Design of SCADA system"	Form EXP – 5 (contd.) Specific Design Experience in Key Activities	Replace "20 RTUs" with "8 RTUs" appearing in the third line of sub-para (c)		
12	I	3			Form I-B-6 (4): Traction Transformers and Auto Transformers – Guaranteed Maximum Losses	In the Part C: Technical Proposal of Section 3: Bid Forms after the Form I-B-6(3), insert a new form "Form I-B-6 (4) Technical Particulars - Traction Transformers and Autoransformers - Guaranteed Maximum Losses" attached a Addm 1: Attachment-1A (1 sheet)/Volume I ((Part 1/2).		
13	I	3	123-1 to 123-3		D. Checklist of submission of Documents for Technical Bid	1. Insert the following after SI. No. 13 in the Table of Check List: SI.		

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SI. No.	Vol. No.	Section No.	Page No.	Clause No.	Item	Addendum to the Bidding Documents
140.	NO.	No.	NO.			23-1 a) Form EXP-1 b) Form EXP-2 and Para 3.2: c) Form EXP-3 'Check Items' in d) Form EXP-4 Stage 3 of e) Form EXP-5 Section 2 3. Insert the following after SI. No. 32 in the Table of Check List:
						SI. Requirements of Clause No. of Bid Documents No. Technical Bid 32-1 Form I-B-6 (4): Technical Particulars - Traction Transformers and Auto Transformers - Guaranteed Maximum Losses A. Replace "Form I-B-7: Country of Origin" appearing in 2 nd
14	I	4	124	Para 4	List of Eligible Countries of Japanese ODA STEP Loans	 4. Replace "Form I-B-7: Country of Origin" appearing in 2nd column at SI. No. 34 with "Form I-B-8: Country of Origin" Replace existing para (4) with the following: 4.1 This package shall be implemented under STEP Loan conditions. 4.2 STEP Components with cumulative cost assessment amounting to 42.2% of the total contract price of this package (excluding local taxes and duties) are to be sourced from Japan/ Japanese origin – (in terms of provisions contained is Section-4 'List of Eligible Countries of Japanese ODA STEP Loans') 4.3. Procurement of following STEP components from Japan/ Japanese origin has been approved for permanent works in this package. (i) Main Traction Transformer (ii) Auto – Transformer

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SI. No.	Vol. No.	Section No.	Page No.	Clause No.	Item	Addendum to the Bidding Documents
						 (iii) Contact Wire (iv) Catenary Wire (v) SCADA – (with or without RTUs) 4.4 The Bidder shall certify his assessed STEP ratio in the format (FIN-6) as specified in the Bid Document to demonstrate fulfillment of STEP ratio specified in Para 4.2 above. 4.5 Items (i) and (ii) (Main Transformer and Auto Transformer) listed in Para 4.3 are to be first considered for procurement from Japan/ Japanese origin to meet the STEP ratio requirement. If full quantity of items (i) and (ii) is found insufficient to meet the STEP ratio requirement, items (iii), (iv) and (v) are to be considered for meeting the STEP ratio. Part/Full quantity of Conductors (viz. Items (iii) and (iv)) can be proposed to meet the STEP ratio. In case the bidder is not able to fulfil the STEP ratio specified in Para 4.2 above after taking into account full quantities of all items (listed in para 4.3 above), he may propose additional items in its Technical Bid, to meet the minimum STEP ratio specified in para 4.2. Bidders shall not include any financial details or financial aspect pertaining to such 'other item' in his Technical Bid.
15	I	5	128	Part II/ Part A: Appendix to Bid/ Sub- clause: 8.2	Time for Completion	Replace the table in the 3rd column of ATB 8.2 with the following: MS-1 Completion of all OHE, TSS and Switching Station works in Rewari - Dabla section for commencement of testing of Proto type Loco. MS-2 Completion of all OHE, TSS, SCADA and Switching Station works in Dabla - Iqbalgarh section for commencement of integrated testing.

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SI. No.	Vol. No.	Section No.	Page No.	Clause No.	Item	Addendum to the Bidding Documents			
						MS-3 Completion of all OHE, TSS, SCADA and Switching Station works in Iqbalgarh - Makarpura section including SCADA works in OCC for commencement of integrated testing. MS-4 Completion of all works as per the scope of works including integrated testing and commissioning and taking over the works by employer on Rewari - Iqbalgarh section. MS-5 Completion of all works as per the scope of works including integrated testing and commissioning and taking over the works by employer on Iqbalgarh - Makarpura			
						section.			
16	I	5	129	Part II / Part A: Appendix to Bid/ Sub- clause 14.5. (b).(i)	Plant and Materials for payment when shipped enroute to the site	Delete the entire row pertaining to "ATB 14.5(b)(i): Plant and Materials for payment when shipped en-route to the site"			
17	I	5	129	Part II / Part A: Appendix to Bid/ Sub- clause 14.5.(c).(i)	Plant and Materials for payment when delivered to the site	Delete entire row pertaining to "ATB 14.5(c)(i): Plant and Materials for payment when delivered to the Site"			
18	I	5	141	Part II / Part B: Particular Conditions / Additional Sub-clause 1.1.4.13	Definitions / Money and Payments/ Country of Origin	Replace the last word "Japan" with "Japan/Japanese Origin"			
19	I	5	153	Part II / Part B: Particular Conditions / Sub-clause 14.4	Schedules of Payment	 In the first sentence of sub-para (a), replace the "Price Schedule 4.1 to 4.7" with "Schedules 5.1 to 5.7" In the last sentence of sub-para (b) replace "Schedules 4.1 to 4.7" with "Schedules 5.1 to 5.7" Delete the following appearing in the 2nd line of sub-para (c) "(in units as described in the Price Schedule-4 of Section-6 Financial Submissions)" 			

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SI. No.	Vol. No.	Section No.	Page No.	Clause No.	Item	Addendum to the Bidding Documents		
20	I	5	154	Part II / Part B: Particular Conditions / Sub-clause 14.7	Payment	Supplement PC 14.7 with the following: "Flow Chart graphically reflecting the Commitment (L/C and L/C issuance stage), Commitment (Disbursement stage) are Transfer type B (payment in Local currency), is attached Addm- I: Attachment-1(3 Sheets)/Vol I(1/2)		
21	I (Part 2/2)	6	1	Index of Section 6: Financial Submission	Schedule 3-1 and Schedule 4	In the Index for Section 6: Financial Submission: 1. Delete the existing "Schedule 3-1: Price Summary" 2. Replace the existing "Schedule 4: Price Schedules – Breakdown of Lun Sum Bid Price" with "Schedule 4: Price Schedule – Currency wise Breakup Lump Sum Bid Price Against Various Cost Centre f Payment Purpose"		
22	I (Part 2/2)	6	6	Schedule 2:	Preamble to Price Schedule	 Replace the existing Schedule Nos. "4.1 to 4.7" with "5.1 to 5.7" appearing in the last line of sub-para 6 Replace the existing Schedule Nos. "4.1 to 4.7" with "5.1 to 5.7" appearing in the 2nd line of sub-para 7 Delete the last sentence of sub-para 7 i.e. "The totals from the Price Schedules 4.1 to 4.7 shall be replicated in the Price Summary in Schedule 3" 		
23	I (Part 2/2)	6	8	Schedule 3-1	Price Summary	Delete the entire Table containing "Schedule 3-1: Pric Summary"		
24	I (Part 2/2)	6	9-12	Schedule 4	Price Schedules-Breakdown of Lump Sum Bid Price	Replace the existing Tables (at Pg. no. 9 to 12) containing "Schedule 4: Price Schedules – Breakdown of Lump Sun Bid Price including Schedule 4.1 to Schedule 4.7" with "Schedule 4: Price Schedules – Currency wise Breakup of		

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SI. No.	Vol. No.	Section No.	Page No.	Clause No.	Item		Addendum to the	Bidding Documents	
						Pay	p Sum Bid Price Agai ment Purpose" is attache ets)/Vol I		
25	I (Part 2/2)	6	13-14	Schedule 5:	Payment Schedule	 Replace the existing Schedules "4.1 to 4.7" with "5.1 to 5.7" appearing in the last line of sub-para 1.2 Replace the existing Schedules "4.2 to 4.7" with "5.2 to 5.7" appearing in the first line of sub-para2.7 Replace the existing words "for OHE catenary or contact wires" appearing in the 2nd line of sub-para 2.7 (a) with "for catenary, contact wires" 			5.2 to
26	I (Part 2/2)	6	14	Sub-para 2.5 of Schedule 5: Payment Schedule	Methodology of claiming payment	Replace the existing words "in four hard copies and a soft copy" appearing in the 2 nd line of first bullet of sub-para 2.5 with "in accordance with PC 14.3"			ra 2.5
27	I (Part 2/2)	6	15-16	Schedule 5: Executive Summary	Payment Schedule Breakup of Contract Price for Payment	1.	"Schedule" with the follow		aining
							Schedule(4
							Existing	Revised	
							4.1	5.1	
							4.2	5.2	
							4.2.1	5.2.1	
							4.2.2	5.2.2	
							4.2.3	5.2.3	
							4.2.4	5.2.4	
							4.2.5	5.2.5	_
							4.2.6	5.2.6	
							4.2.7	5.2.7	↓
							4.2.8	5.2.8	↓
							4.2.9	5.2.9	↓
							4.2.10	5.2.10	-
							4.3	5.3	

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_	_		_			4.3.1 5.3.1		
						4.3.2 5.3.2		
						4.3.3 5.3.3		
						4.3.4 5.3.4		
						4.3.5 5.3.5		
						4.3.6 5.3.6		
						4.3.7 5.3.7		
						4.4 5.4		
						4.5 5.5		
						4.6 5.6		
						4.7 5.7		
28	I (Part 2/2)	6	17-38		Schedules 4.1 to 4.7	 Replace the existing Schedules "4.1 to 4.7" with "5.1 to 5.7" appearing in the 3rd line of foot note under Table containing Schedule 5: Executive Summary. Replace the existing Schedules 4.1 (Pg. no. 17) to 4.7 (Pg. no. 38) with the revised Schedules 5.1 to 5.7 is attached at Addm 1: Attachment - 3 (22 Sheets)/Vol. I 		
29	II	9	97	4.3.9	Land for Temporary Facilities for Contractor's Use	Replace the first sentence of the sub-clause 4.3.9 "The total area of landContractor by Employer" with the following:		
						"The Approximate area of land available for Temporary Works at Junction stations and Crossing stations shall be as marked on the Reference Drawings."		
30	III	9	9	Para 2.2	Description of Corridor	Supplement the existing sub-para 2.2.3 with the following:		
						"It also includes ICB No. CTP-3A: Construction of Sabarmati and Mahi bridges."		
31	III	9	10	2.4.1	Operation Control Centre	Replace the existing words "in National Capital Region" with		

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						"at Sabarmati and there shall be a Backup Control Centre (BCC) at Sabarmati/ NCR.
32	III	9	14	3.3 (a)	Scope	Replace the first two lines "Provision of sixteen (16) Traction Substations (220 kV 14 locations, 132 kV – 2 locations)" with "Provision of sixteen (16) Traction Substations (220 kV 15 locations, 132 kV – 1 locations)"
33	III	9	14, 15 and 16	3.3 (c), (d), (h) & 7 (n)	Scope	In Cl. No. 3.3 (c) on page 14 1. Replace "17" with "15" in 3rd line 2. Replace "Seventy Seven SSPs" with "Seventy Five SSP" in 4th line 3. Replace "(Seventeen)" with "(Fifteen)" in 4th line In Cl. No. 3.3 (d) Replace "17" with "15" in 3rd line and word at with 'AT' and delete midsection SSP from the fourth line Replace "five" with "seven" appearing in 5 th and 7 th line. Delete para (n) In Cl. No. 3.3 (h) on page 15: Replace "Table 3.3-1: Capacities & Number of Auxiliary Transformers to be Provided" with revised table shown as under:

Table 3.3-1 Capacities & Number of Auxiliary Transformers To be provided

	Minimum Capacity in (kVA)	Nos. at each location	Locations	Total Number of Aux. Transformer
Traction Sub-station (TSS)	100	2	16	32
Sectioning Posts (SP)	10	2	16	32
Sub-Sectioning Posts (SSP)	10	2	75	150
Auto Transformer Stations (ATS)	10	2	7	14

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No.	No.	No.	No.		0.5			T 00		
	Cross	ing + Junctio	on Station	าร	25	2		30	60	
		+ Telecom	Huts		10 10	2		171	342	
	Level	Crossings	Tota	 al Auxiliary Tran	_	2		2	4	
				25 kVA - 60	Sidifficis . Too KVA	- 32				
				10 kVA - 542						
		Total	:	- 634						
34	Ш	9	25	4.4.2.6 (e)	Proven Design & Cross	3	1. Add	words "and	repair" in the first line	after the word
					Acceptance Criteria		mai	ntenance.		
							2. Add	I the following	at the end clause" incl	uding repairs to
							equ	ipment such a	as transformers etc. in Ind	dia"
35	III	9	25	Clause No. 4.4.2.6 (f)	Proven Design & Cross Acceptance Criteria	3	Replac	e "30%" with	"50%" appearing in 2 nd lii	ne
36	III	9	27	4.5.2	Design Submission		Replac	e Cl. 4.5.2 on	page 27 as below:	
					Requirements.		Phase Volume (a) (b) (c) (d) (e)	and Construe e - II Inception Re Train and Tr Basic Design Construction As-Built Doc	action Simulation Report as of the System and sub	lause 3.1.13 of
37	Ш	9	54	6.6.2	Capitalization of Transf	ormer	In clau	se in 6.6.2:		
					Losses		fo	llowing:	replace formula of K x 16 (I+0.16C) {(1+0.13 0.12 (1+0.1	
							2. R	eplace value	of F "60%" with "25% a	ppearing under

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						the formula for K _{traction}
						3. In line no. 16, replace formula of K _{auto} with the
						following:
						$K_{\text{auto}} = \frac{43.80 \times 190 \text{ (I+0.0625C)} \{(1+0.12)^{25} - 1\}}{0.12 \text{ (1+0.12)}^{25}}$
						4. Replace the last three lines "If the guaranteedK _{traction} and K _{auto} of" with the following:
						"If the guaranteed values are not achieved by the Contractor as per test plan IEC 60076-1 the transformers shall be rejected."
38	III	9	65	7.1.1	Scope of Works	Replace "77" with "75" and "6" with "7" appearing in 3 rd line
39	III	9	67		Table 7.1-1: List of Proposed Traction Substations (TSS)	Replace the existing Table 7.1-1: List of Proposed Traction Substations (TSS) with the revised table as below:

Table 7.1-1 List of Proposed Traction Substations (TSS)

Nos.	TSS Name	Chainage	DFC			
	Name	Continuous (from Rewari)	СРМ	Section	Chainage	No. of Transformers
1	Ateli (132kV)	35.754	Jaipur	15	21.742	2
2	Maonda	89.100	-do-	14	75.520	1
3	Ringus	143.220	-do-	14	21.400	2
4	Phulera	210.43	-do-	13	35.800	1
5	Kishangarh	263.267	-do-	12	85.400	2

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		6	Mangli	yawas	315.867	Ajmer	12	32.800	1	
		7	Haripu	r	375.791	-do-	11	77.000	2	
		8	Marwa	r Junction	432.991	-do-	11	18.800	1	
		9	Falna		492.278	-do-	10	62.550	2	
		10	Sirohi I	Road	551.928	-do-	10	2.900	1	
		11	Sriamii	rgarh	610.674	-do-	9	42.240	2	
		12	Dharev	wada	670.767	Ahmedabad	8 (N)	89.780	1	
		13	Jornan	g	730.452	-do-	8 (N)	29.645	2	
		14	Sanan	d	785.017	-do-	6	79.460	1	
		15	Heranj	e (Vaso)	835.212	-do-	6	29.265	2	1
			Bhayal	li	896.794	Vadodara	5	149.150	1	
40	III	9	73	7.4.3		n Transformers n Transformers	2. In "60 row 1. Add	table 7.4-1, re 1/84/100 (Minim v. d words "of ON	clause 7.4.2 eplace "60/84 M um)" appearing in	"minimum" appearing VA (Minimum)" with the 2 nd column of 2 nd st line of second para ion.
							2. Al 84 for be sh Ini	so add the followard and 100 recontrol and medically. The control and medically and the control and the contro	owing at the end of MVA respectively conitoring of the farmotor don single phase rmer shall be s	of second para "upto of. All the cable works ans and pumps shall and the pump motor e ac supply at 230V supplied with ONAN oling pump shall be

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42	III	9	84	9.1.1 (e)	Scope of Work	Add the following at the end of the clause:
						"except works related to traction earthing and bonding of electrified IR tracks"
43	III	9	96	9.5.2	Contact Wire	Replace the existing clause with the following:
						"The contact wire shall be continuous cast using South Wire process copper alloy of minimum 150mm ² . The contact wire shall be grooved and conform to RDSO Spec. no. TI/SPC/OHE/CW(Cu- Ag)/0100 or any other copper alloy as per equivalent international standard capable of withstanding minimum temperature up to 100 ⁰ C continuously as per EN 50119 and EN 50149."
44	l III	9	96	9.5.4	Catenary (Messenger) Wire	Replace the existing clause with the following:- "The catenary wire, shall be 125mm² copper alloy, conforming to RDSO Spec. No. TI/SPC/OHE/Cat(Mg-Cu)/0120 or DIN 48201 - T1 & T2 , EN 50119, DIN 43138 or any other equivalent inter-national standard capable of withstanding minimum of 100°C".
45	III	9	100	9.6.14	The size of catenary and contact wires for yard lines	At the end of cl. 9.6.14 add the following:
					,	"or any equivalent international standard of copper contact and catenary wires withstanding minimum 80°C shall be acceptable"
46	III	9	100	9.7 (a)	Cantilever Assemblies	Delete para a) & b) & replace with revised para a) as: "The Modular cantilever assembly (MCS) shall be of proven design & meet cross acceptance criteria. The design should address better reliability apart from ease of maintenance. The components of cantilever shall be corrosion resistant. The number of component shall be bare minimum & easy interchangeability of the component on the same cantilever shall be ensured, so as to have easy maintenance & faster

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						restoration. For better interchangeability, ease in construction & smooth inventory control the design of mast side fitting as well as OHE side fittings of both stay & bracket insulators of the cantilever shall be same. The design shall conform to EN 50119". Cantilever made of fibre shall not be used.
47	≡	9	100	9.6.13	Flexible Jumpers and Feeders	Delete all para's from 9.6.13.1 to 9.6.13.6 & revise as follows: Flexible jumper wire shall be fabricated from soft annealed high conductivity copper with stranded conductors. The size of the jumpers shall be decided based on train simulation & temperature rise shall be within limits in extended feed condition. The jumper shall conform to DIN 43138.
48	III	9	102	9.9.1	Auto Tensioning Devices.	Replace the last sentence of sub-clause 9.9.1 with the
						following:
						The auto tensioning device shall be as per EN 50119.The
						Bidder may adopt anchoring of contact & catenary wire can
						be on separate mast or same mast through regulating
						equipment. The use of gas ATD shall be restricted to
						viaducts and tunnels.
49	III	9	105	9.12	Outdoor Steel Parts	Add the following at the end of second paragraph of clause 9.12:
						"The zinc coating of G.I. structures and steel parts shall be not less than 1000 gm/sq.m."
50	III	9	121	10.4.7	Indicative List of Equipment to be Monitored and Controlled at Remote Locations	Replace the existing Table: 10.1-1 and its foot notes with the revised table along-with foot notes as under:

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No.	No.	No.	No.									
						Table	e 10.1-1					
					T							1
		Equip	oment		Quantity							
					TSS	SSP	SSP at Jn	SP	ATS	AxT	OCC	
					133	(open route)	Stn.	3F	AIS	AXI	000	
		Tracti	on Transfo	ormers	2	0	0	0	0		0	
			Transform		10**	2	2 *	4	2		0	
		Circuit Breakers				0	1°	2	0		0	
			Interruptor	S	2	4	8	2	0		0	
			Isolators		18	12	18	12	2		0	
				uit Breakers	2	0	0	0	0		0	
			32kV Isola		5***	0	0	0	0		0	
		Powe Equip		or Correction	2	0	0	0	0		0	
			ry Charger		2	2	2	2	2		0	
			ary Transf		2	2	2	2	2	634****	0	
				tribution Boards	1	1	1	1	1		0	
		Current and Potential Transformers			24	2	***	8	0		0	
		Doors and gate contacts				2	2	2	0		0	
		Gate locks, Intruder Alarm				1	1	1	2		0	
		Fire alarm system				1	1	1	0		0	
		UPS				0	0	0	0		2	
		CCTV			1	0	0	0	0	0	0	
		Auton	natic Fault	Locator	1	01#	01#	1	0	0	0	

(Reference General Traction Power Supply Diagram and drawing no. EM-P4/PS/202/203/204/205 (R)/206)

Auto Transformers may be provided, if required.

** 8 in single transformers TSS.

*** 4 in single transformers TSS.

PT may be provided, if required.

100 kVA - 32 (at TSS)

25kVA - 60 (at Jn. & Crossings stations) 10kVA - 542 (at SP, SSP, ATS, S&T Huts, 4 level crossings

° one CB at Rewari Jn SSP for Loco Depot

based upon design

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SI. No.	Vol. No.	Section No.	Page No.	Clause No.	Item	Addendum to the Bidding Documents				
51	III	9	127	10.4.16	Specific Safety Requirements	 Add the following as new sub-clause 10.4.16.3 "10.4.16.3 Safety Requirements The installation design shall incorporal measures to avoid presenting safe hazards to people. The Systems design shall incorporal measures to provide for its safe management and operation. The Contract shall ensure that there is no acciden operation of any SCADA equipment. The Systems shall not give rise, or subject to, dangerous interactions within the railway or with other systems. The design of the earthing system should nave for safe features." 				
52	III	9	171 and 172	13.2.1	Table 13.2-1: Minimum Quantity of Contract Spares e 13.2-1 Minimum Quantity of Contract	Replace the existing Table 13.2-1: Minimum Quantity of Contract Spares with the modified Table as under:				
				<u> </u>						
			S. No		Spares					
A. OHE Spares [The Contractor shall supply a minimum quantity of the items of Spares as given below for every IMD (Intermediate Maintenance Depot) which are eight in number] 1 Complete overhead equipment along with Conductors, 5 kms										
			I		chments, Fittings, Jumpers etc. Mai					

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SI.	Vol.	Section	Page	Clause No.	Item	Addendum to the B	idding Documents
No.	No.	No.	No.	1			
				Lines			
			2	Complete set conductors : ya	of overhead equipment along with ard lines	1 km	
			3	25 kV Feeder C	Conductor	2 kms	
			4	Protective Eartl	h Conductors (AEC and BEC)	2 kms each	
			6	25kV Cables		300 m	
			7	Cantilever Brad	ckets with top and Bottom insulators	20 nos. each	
			8	OHE Section In	nsulators	5 sets	
			9	OHE Auto-tens	ioning device sets	5 sets	
			10	Counter weight	s for ATD	1 set	
			11	Stainless steel	wire rope for ATD	6 sets	
			12	Jumper Cables		200 m each type	
			13	Height and Sta	gger Gauges (mechanical)	2 sets	
			14	Height and Sta	gger gauge (instrument laser based)	1 set	
			15	3 T Tirfer		2 sets	
			16	1½ T Tirfer		2 sets	
			17	3 T Pull Lift		2 Tons	
			18	Come along cla	amps for each type of conductor	4 nos. each	
			19	Rope-Pulley		10 nos. each	
			20	Steel slings of s	suitable lengths	6 nos.	
			21	Traction Structu	ure	2 of each type	
			22	Cutters for conductors		2 nos.	
			23	Standard set of tools		3 sets	
			24	Crimping tools types)	suitable for droppers, conductors (all	2 sets	

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SI.	Vol.	Section	Page	Clause No.	Item	Addendum to the B	idding Documents
No.	No.	No.	No.	1			
			25	Safety helmet		20 nos.	
			26	Safety harness		10 nos.	
			27	Al. ladder (of re	equired suitable height)	4 nos.	
			28	Set of screw dr	ivers and pliers	6 nos. each	
			29	Discharge rods	with suitable top and bottom clamps	10 sets	
			30	Motorized earth	n auger	02 nos	
			31	Portable operat	ted tree pruner	02 nos	
			32	Operating rod		10 sets	
			33	Digital Dynamo	meter	02 nos	
			34	Inflatable lighting	ng tower	04 nos	
				B. Sub-Statio	on Spares	Total for the Railways	
			1	Traction transfo	ormers and its components	As per specification of the Transformer and Auto- Trans- formers	
			2	Auto -Transforr	ners and components	2 nos complete Auto- Transformers as spares in addition to components spares as per the specifications of Auto Transformers	
			3	220 kV switch o	gear	2 sets each (including Circuit Breaker & Isolator)	
			4	132 kV Switchg	•	1 set each (including Circuit Breaker & isolator)	
			5	220 kV Lightnii	ng Arrestor	2 sets	
			6	132kV Lightnin	ng Arrestor	1 set	
			7	25/50 kV switch gear and isolators		1 complete set used in	
			8	25 kV Lightning Arrestor with surge counter cum leakage current monitor		10 sets	
			9	Protective Rela	ys	2 sets of all types	

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SI. No.	Vol. No.	Section No.	Page No.	Clause No.	Item	Addendum to the	Bidding Documents
110.	110.	110.	10	Control Auxiliar	y Relays	5 sets	
			11	Bus Bar Condu	ctors & Fittings	1 TSS Set	
			12	25 kV circuit bro	eaker – 2 pole	2 sets	
			13	25kV Interrupte	r – 1 pole	2 sets	
			14	25kV Current T	ransformer	5 nos.	
			15	25kV Potential	Transformer	5 nos.	
			16	Post and String	Insulators	1 TSS Set	
			17	25kV Isolator -	2 pole (motorized)	2 sets	
			18	25kV Isolator -	1 pole (motorized)	2 sets	
			19	Buckholtz Rela	y	1 set of each type	
			20	220/132kV isola	ator	2 nos.of each type	
			21	AC Power Line	Analyser	1 No.	
			22	Acoustic Level	Test Set (Suitable Range)	1 No.	
			23	Auxiliary Trans	former	5 nos each type	
			24	Vacuum Cleane	er	5 nos	
			25	Hand Blower		5 nos	
				C-SCADA S	pares	Total for the Railway	
			1	RTU SET - TS	SS	2 sets	
			2	RTU SET - SS	SP	2 sets	
			3	RTU SET - SF		2 sets	
			4	Multipurpose P	rinter	1 set	
			5	Modules and ca	ards of RTUs	3 % of each type	
				D – Instrumen	ts, Test Kits, Tools & Plant	Total for the Railway	
			1	Lap Top Comp	uter for diagnostic checks	3	

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SI. No.	Vol. No.	Section No.	Page No.	Clause No.	Item	Addendum to the B	idding Documents
		•	2	Signal level me	ters	3	
			3		oscilloscope: 12 channel, 25 MHz appling rate 20 ms/s	2 sets	
			4	Cable Fault Lo	cator	6 sets	
			5	AC Power Line	Analyser	1 set	
			6	Earth Leakage	Detector	10 sets	
			7	Digital earth tes	ster	10 sets	
			8	Digital Megger	2500 V	20 sets	
			9	Primary injection	n test kit	3 sets	
			10	Secondary inje	ction test kit	3 sets	
			11	Relay Testing I	Kits	3 sets	
			12	Fully automatic	Oil dielectric test kit	8 sets	
			13	Thermal Imagir	ng Camera	8 sets	
			14	Video Camera		3 sets	
			15	Dissolved Gas	Analyzer Set	3 sets	
			16	27/Yokogawa 7		4 sets	
			17	Multipurpose S	crew driver sets Small and Big	24 sets	
			18	oil filteration pla	ed single phase centrifulgal transformer ant of 300 liters per hour capacity	2 sets	
			19	AC/DC True RI	MS clamp meter	10 sets	
			20	Digital Megger	500V	10 sets	
			21	CB analyzer kit		4 sets	
			22	Soldering stations		20 sets	
			23	Vehicle mounted single phase centrifugal transformer oil filtration plant of 2500 liters per hour capacity		2 sets	
			24	GPS based cu Video Camera.	urrent collection equipment along with	8 sets	

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SI.	Vol.	Section	Page	Clause No.	Item	Addendum to the Bidding Documents
No.	No.	No.	No.			
			25		aintenance Van for OHE/ Power Supply	
53	III	9	182	15.1.9	Training requirements	Add the following at the end of sub-clause 15.1.9:
						"The training man-days indicated above are inclusive of
						training at manufacturer's works and at site indicated in sub-
						clause 15.8.1.1."
54	III	9	183	15.2.3	Mock Up for Training	Replace the following
						"clauses 13.2.1, 13.2.2 and 13.7 of this Specification"
						appearing in 3 rd & 4 th line of the sub-clause 15.2.3.
						with "the training plan described below in clause 15.3"
55	III	9	190	16.4.3	Quantity of Manuals	Delete the Sub-clause no. 16.4.3.
56	III	9	226	19	Part III: Climatic and atmospheric conditions	Add a new row (xiii) at the bottom of the Table for the
						following:
						"(xiii) The average ambient temperature shall be taken
						35°C"
57	III	9	249 - 349	Part XI and Part XII	"Part XI - Specifications for 60/84 MVA, 220/132 kV/54 kV SCOTT-CONNECTED Traction Power Transformer for 2x25 kV AT Feeding System" And "Part XII - Specification for 8 MVA, 54 kV, 50 Hz Auto Transformer for 2x25 kV AT Feeding System"	Replace existing Part XI (page no. 249 – 298) and Part XII (299 – 349) with the revised specifications for Transformers as attached as Addm 1: Attachment - 4 (94 Sheets)/Vol III
58	IV (Part 2/ 2)	10			Content Sheet (Volume IV: Data Book)	 In the Content Sheet, Delete "Item no. 2.1 and 2.2" under the heading 'Rolling Stock Characteristics Data'

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SI. No.	Vol. No.	Section No.	Page No.	Clause No.	Item	Addendum to the Bidding Documents
						Add Item No. 4 as under at the end of the Content Sheet: "4. Showing Location of Traction Supply Control Posts for EM P-4"
59	IV (Part 2/2)	10	IV-2- 1-2 & IV-2- 2-3	2	Rolling Stock Characteristic Data	Insert graphs "Speed Vs Traffic Effort/ Power Characteristics" and "Speed Vs Breaking Effort Characteristic" (in 2 sheets), as enclosed at Addm 1: Attachment - 5 (2 Sheets) and Add Specifications and Standards for Electric Locomotives as enclosed at Attachment 5B (68 Sheets)/ Vol IV(2/2)
60	III	9	56	6.8.2	Power Quality	Complete para from "based on the characteristics of the traction supply installed at each TSS deleted & replaced with "assuming power factor of 0.85 for the train journey, power factor correction shall be improved to 0.95 using 50% static & 50% variable capacitors". Add "The harmonics produced by the locomotives are furnished in Addm-1: Attachment – 5A (2 Sheets)/ Vol IV(2/2).
61	IV (Part 2/2)	10				Insert the "Table: Showing Location of Traction Supply Control Posts for EM P-4" at the end of the Data Book (Volume IV- part 2/2) as enclosed at Addm 1: Attachment - 6 (8 Sheets)/Vol IV(2/2)
62	V	11			VOLUME-V Reference	Changes are as per Addm-I : Attachment - 7 (65
	(Part 1/4)				Drawings (1/4)	Sheets)/Vol V(1/4) containing new and revised drawings of Volume V.
63	II	8	11	1.4	Codes and Standards	Add a new clause 1.4.6 as under: "The materials and workmanship specifications have been based on existing Indian Standards including RDSO Standards and International Standards. Apart from the basic data, specifications etc. all items of works shall be governed by the codes, standards and specifications as

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SI. No.	Vol. No.	Section No.	Page No.	Clause No.	Item	Addendum to the Bidding Documents
						detailed in sections 8 and 9 of the document. If the codes, specifications and standards are revised/corrected/amended upto 28 days before the due date of submission of the bid proposal, the contractor will be responsible for detailing in his specification of the standard on which his materials and workmanship will be based, and these will be of similar or higher standard than those already mentioned in the above documents."
64	III	9	18	3.5.1	Documentation	Revise para I) as "Approval of specifications which are drawn by the bidder based on functional requirements for which RDSO/CORE specifications are not available or used first time in Indian Railways".
65	III	9	44	Table 5.1-3	Voltage requirements	Replace "freight corridor" in 1 st row with "Values".
66	III	9	65	7.1.2	Scope of works	Replace 6 with 7 in 6 th line. Table 7.1-3 si.no 1 replace chainage "14.239" with "14.308". S.No.28 replace chainage "11.482" with "11.180", S. No. 66 replace chainage 79.175 with 79.465.
67	III	9	83	8.2.5	Auxiliary Transformers	Add in the last para "The auxiliary transformer shall have losses as per specified criteria of BEE for 5-star rating".
68	III	9	100	9.6.15	Flexible Droppers	Add "Current carrying" after Each in 1 st line. Replace "DIN 482" with "DIN 43138" in 4 th line.
69	III	9	101	9.8	OHE assemblies, fittings & hardware	Delete para 9.8.

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SI. No.	Vol. No.	Section No.	Page No.	Clause No.	Item	Addendum to the Bidding Documents
70	III	9	111	10.1.2	Scope of works	Replace "Seventy Seven" with "Seventy Five" in 12 th line. Replace "Five" with "Seven" in 14 th line. Add Metering arrangement at TSS. Add & Backup Control Centre. Add Provision of adequate data servers, web servers, application servers with redundancy. Add Protection from viruses & other security protections.
71	III	9	130	10.6-1	Typical requirement for I/O list	Add for telesignal "All relay failure, CB/BM low gas pressure, transformer oil temperature, Bucholz relay alarm, Pressure relief device, RTU door open, CCTV, transformer oil temperature trip, transformer winding temperature trip, transformer oil pump ON/OFF, HV/LB trip circuit failed fan failure alarm. Add to measurend list HV Voltage & current Local Breaker fail (LBB) driving the tap change motor, fiber optic temperature sensor'
72	III	9	96	9.5.1	Indicative size of conductors	In table 9.5-1 remarks column replace "upto" with "minimum".
73	III	9	254	Part- XI 5.1 (15) & (16)	Rating and General Data	Sr. No. 15 (1) "5s" replaced with "2s" sr. no. 16 "1.55T" replaced with "1.70 T"
74	III	9	25	4.4.2.6(d)	Cross Acceptance	Add in the last para of 4.4.2.6 9(d) 'fresh prototype will be conducted if prototype test has not been conducted in similar environmental condition stipulated in the Bid Document. Prototype test will will be witnessed by RDSO or any authorized agency approved by the employer keeping the contract and project schedules in view'
75	III	9	24	4.4.1	Conformity with Governing specification and statutory requirements	Replace "Indian Electricity Rules" by "Safety Guidelines 2010 issued by CEA"
76	III	9	106	9.13.2.5	Section insulators	Delete para 9.13.2.5

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