

Dated: 13.08.2025

CORRIGENDUM-I

Sub: "Supply, Installation & Commissioning of maintenance free VRLA/SMF 12V/120 AH Battery sets at various locations under VSS Project of RailTel Northern Region"

Ref: Gem Bid No. GEM/2025/B/6537508 dtd. 06-08-2025

In reference to the above, the following amendment in the tender document is hereby issued:

A	Tender Conditions	
S. N	Existing Clause of Tender	Modified Clause
1	<p>Clause 7 (i) Performance Bank Guarantee (Pg no:</p> <p>Performance Bank Guarantee @ 10% of total value of Purchase Order. Performance Security is to be furnished by a specified date [generally 30 (thirty) days after notification of the award] and it should remain valid for a period of 90 (ninety) days beyond the date of completion of all contractual obligations of the supplier, including warranty obligations allowing claim period of one year (in the event of forfeiture of the bank guarantee) on top of the guarantee period. PBG format specified in Annexure-IV.</p>	<p>Clause 7 (i) Performance Bank Guarantee :</p> <p>Performance Bank Guarantee @ 5% of total value of Purchase Order. Performance Security is to be furnished by a specified date [generally 30 (thirty) days after notification of the award] and it should remain valid for a period of 90 (ninety) days beyond the date of completion of all contractual obligations of the supplier, including warranty obligations allowing claim period of one year (in the event of forfeiture of the bank guarantee) on top of the guarantee period. PBG format specified in Annexure-IV.</p>
2	<p>Annexure-I of ITB: Schedule of Requirements and Technical Specifications as per Annexure-I</p>	<p>Schedule of Requirements amended and enclosed as Annexure-IA</p> <p>Technical Specifications amended and enclosed as Annexure-IB</p>
B	Bid Timings	
	Existing Bid Closing Date & Time	Revised Bid Closing Date & Time
	20-08-2025 1200 hrs	25-08-2025 1200 hrs
	Existing Bid Opening Date & Time	Revised Bid Opening Date & Time
	20-08-2025 1230 hrs	25-08-2025 1230 hrs

All other terms and conditions will remain unchanged.

SCHEDULE OF REQUIREMENTS AND TECHNICAL SPECIFICATIONS:

- i. Equipped with necessary hardware/software to comply all above required / support features.
- ii. Back-to-Back warranty with respective OEMs for both Hardware and Software. The certificates/Undertaking for the same will have to be submitted along with bid from respective OEM.
- iii. Total estimated Cost of the Tender is INR Rs. **5,89,57,516.80/-**

I. **SCHEDULE OF REQUIREMENTS (PRICE SCHEDULE) (in Rs.)**

Supply, Installation & Commissioning of maintenance free VRLA/SMF 12V/120 AH Battery sets at various locations under VSS Project of RailTel Northern Region						
SN	Item Description	Unit	Qty	Rate inclusive of loading/ unloading, insurance & freight (in Rs.)	GST(in Rs.)	Total Amount including GST (in Rs.)
Supply Items						
A	Supply & installation of 12V/ 120 AH VRLA/SMF Maintenance free Battery as per Technical Specification for use of PROSTARM (Model no. CH10KS) 2x10 kVA UPS	Nos	3500			
B	Buyback of batteries	Nos	3500			
Total Amount (A-B)						

Note:

- i. *The evaluation of bids will be made on total cost of SOR A & B including taxes.*
- ii. *Initial PO will be issued for minimum Qty: 1500 nos only and subsequent Sub-Pos will be issued during the contract period as per requirements.*
- iii. *Each battery bank will consist of 20 batteries for 1x10 kVA UPS.*

All other terms and conditions mentioned in the Tender Document will remain unchanged.



TECHNICAL REQUIREMENTS & SPECIFICATIONS for VRLA/SMF MAINTENANCE FREE BATTERY SETS AS PER STANDARD : JIS 8702

Technical Specifications of Batteries :

Battery Type: Valve-Regulated Lead-Acid (VRLA) / SMF Maintenance-Free

Nominal Voltage: 12 V

Nominal Capacity: 120 Ah at 20-hour rate to 1.75 V/cell at 27 °C

Applicable Standards: JIS C 8702-1:2009 / JIS C 8702-2:2009 /JIS C 8702-3:2009 /STQC Lab Certification

SI No.	Test Details	Requirement	Results	Remarks
1	Construction: 1) The battery is composed of one or more cells. 2) Number of cells is designated as "n". 3) Provision of control valves not to allow gas (air) to enter the cell, but shall allow the gas to escape from the cell under a certain pressure. 4) No provision for addition water or electrolyte.	Shall be a single cell or mono-block. Number of cells shall be indicated. Control valves shall be available. Battery shall not have facility to add water or electrolyte.		
2	Mechanical Strength Battery shall withstand the mechanical stresses, vibrations and shocks occurring in normal transportation, handling and use. Tested according to the clauses	There shall be no physical damage		
3	Marking items The following items shall be marked on the battery with an appropriate method a) Type/Product name b) Nominal voltage c) Rated capacity at 20 hour discharge rate d) Name of Suppliers /name of manufacturer e) Year & month of manufacture or their abbreviation f) Recycling symbol	On the surface all details shall be marked		
4	Marking of Polarity The battery shall carry a marking of polarity of both terminals by plus symbol(+) and minus symbol(-) on the lid adjacent to the terminals	There shall be plus symbol(+) and minus symbol (-) on the lid adjacent to the terminals		
5	Actual Capacity C₂₀ Test: The battery is initially fully charged and kept in open circuit for 5h to 24h at 25°C± 2° C At Amb.Temp. 25°C+2°C battery is discharged at 120 ÷6A+2% current until the end voltage 10.5V, The discharge time in hour (t) is measured. Actual Capacity C ₂₀ =tx 120	Actual capacity C ₂₀ shall become at least rated capacity C ₂₀ (120Ah) within five cycles of charging & discharging.		
6	Actual Capacity C₁ Test: The battery is initially fully charged and kept in open circuit for 5h to 24h at 25°C ± 2° C At Amb.Temp. 25°C+2°C battery is discharged at I ₁ = 78A+2% current until the end voltage 9.6V, The discharge time in hour (t) is measured. Actual Capacity C ₁ =tx11	Actual capacity C shall become at least rated capacity C ₁ (78Ah) within five cycles of charging & discharging.		
7	High Rate Discharge Characteristics Test: Fully charged battery is kept in open circuit for 5h to 24h at 25°C + 2° C At Amb.Temp. 25°C+2°C battery is discharged at 20 x 120 = 120A±2% current until the end voltage 9.6V, Duration of discharge time is measured.	Duration of discharge shall be 27 minutes or more within five cycles of charging & discharging.		
8	Maximum Permissible Current Characteristics Test: Fully charged battery is kept in open circuit for 5h to 24h at 25°C +/- 2°C At Amb.Temp. 25°C+2°C battery is discharged for 300Sec. at 40 x 120 = 240A. Then battery is recharged again and kept in open	The discharge duration (t) shall be 150 sec. or more. The battery shall be free from deformation and other damages.		

	<p>circuit for 5h to 24h at 25C ±2° C Again at Amb Temp. 25°C+2°C battery is discharged for 5Sec. at 300 × 120 = 1800A.</p> <p>After the above discharges, battery is charged as per clause 6.1 a) and discharged at 40 × 120=240A until the end voltage 8.04V. Discharge duration (t) is measured.</p>			
9	<p>Charge Acceptance Characteristics after Deep discharge Test:</p> <p>Three monobloc batteries are used. Test temperature: 25°C ± 2°C.</p> <p>(Load resistor value selected such that the initial current shall be 36×I₂₀ to 44×I₂₀.)</p> <p>A resistive load bank 240 Amps/12V connected across battery terminals and kept it for 360 hour as deep discharge period.</p> <p>After deep discharge, battery is charged at a constant voltage 14.10 V for 48 hours as per clause 6.1.4 with charging current 6 × I₃₀ = 36 A.</p> <p>Then Actual Capacity C₂₀ Test carried out</p>	Actual capacity C ₂₀ shall not be less than 90Ah (75% of rated capacity (120Ah)).		
10	<p>Gas Emission Intensity Test:</p> <p>Gas emission intensity II (Gas Recombination Efficiency test):</p> <p><u>Gas Collection Procedure:</u></p> <p>Gas collecting vessels (burettes, measuring cylinders and funnels) installed over all cells. The distance between water surface to bottom surface of gas collection vessel shall be 20mm or more.</p> <p>Fully charged 3 monobloc batteries (Sl.No: 12688, 5212 & 5211) are tested.</p> <p>Test temperature: 25°C ± 5°C.</p>			
	<p>Three serially connected batteries are charged at a constant current of 2 × I₂₀ (12A) for 48 hrs.</p> <p>After charging, within one hour batteries are charged at a constant current of 0.1 × I₂₀ (0.6A).</p> <p>After a lapse of 24 h from the start of charge gas collection started and collected for 5 hrs.</p> <p>The following formulas used for Calculation of gas recombining efficiency:</p> $V_{25} = (P \times 298 \times V) / (P_0 \times (T + 273) \times Q \times n)$ <p>Where, V₂₅: amount of gas emission per cell converted into amount of gas emission at amb. of 25°C and pressure of 101.3 kPa per 1Ah of quantity of electricity energized (ml/Ah)</p> <p>P: atmospheric pressure at measurement (kPa)</p> <p>P₀: 101.3 (kPa)</p> <p>T: Ambient temp. during test (°C)</p> <p>V: amount of collected gas (ml)</p> <p>Q: electric quantity passed during the period of gas collection (Ah)</p> <p>n: number of cells (6)</p> $\eta = \{ 1 - (V_{25} / 684) \} \times 100$ <p>Where, η: Gas recombining efficiency (%)</p> <p>684: Amount of gas theoretically produced per 1Ah at 25°C and 101.3 kPa (ml/Ah)</p>	The gas recombining efficiency(η) shall be 90% or more.		
11	<p>Gas recombination characteristics</p> <p>Operation of Vent Valve Test:</p> <p>Battery Sl. No: 5291 is used for test.</p> <p>Pneumatic pressure is applied to the vent valve,</p>	The operating pressure (Close/Open) of the vent valve shall be 0.98kPa to 196.1kPa		

	increased or decrease the pressure gradually measure vent valve open and close pressure.			
12	Liquid leakage Resistance Characteristics: The test performed on Battery SI.No..5291 A fully charged battery shall be further charged at a current of 4×120 (24A) for 5 hrs	There shall not be existence of cracks or liquid leakage and no change in the size of the battery.		
13	Vibration Resistance Characteristics: <u>Sinusoidal Vibration Test.</u> Fully charged. Battery used for the test, Batt. SI.No. 12799 Frequency: 16.7 Hz Amplitude: 4mm peak to peak No. of Axis: 3 (Vertical, Longitudinal and Lateral directions) Duration: 1 hr/axis. Total Duration: 3 hr	The battery shall be free from deformation, cracks or liquid leakage and voltage shall be nominal voltage (12V) or more.		
14	Shock Resistance Characteristics: A fully charged battery (SI.No.5291) shall be allowed to fall freely with its bottom face being downwards on a flat or hard wooden plate of 10mm or more thickness. Drop height: 20 cms Number of falls: Three	The battery shall be free from deformation, cracks or liquid leakage and voltage shall be nominal voltage (12V) or more.		
15	Cycle Service Endurance Test: Fully charged 3 mono block batteries tested at $25^{\circ}\text{C}+2^{\circ}\text{C}$. Each endurance cycle consists of: <u>Discharge:</u> Discharge current: 20.4A ($3.4 \times I_{20}$) Discharge duration: 3h <u>Charge:</u> Charging Voltage: 14.1V, $I_{\text{max}} = 36\text{A}$ Charge duration: 9h For every 50 ± 5 cycles, the actual capacity C_{a20} measured. The capacity obtained is more than 72Ah ($0.6 \times C_{20}$) test continued for another 50 cycles. During endurance test when the battery voltage reached 9.9V test terminated and battery charged at 14.1V (constant voltage method) for 16h then actual capacity C_{a20} measured. The capacity obtained is less than 72Ah ($0.6 \times C_{20}$) test completed.	The number of endurance cycles shall be 200 or more		
16	Storage Characteristics Test: Rated capacity batteries fully charged cleaned, dried and kept in open circuit condition for 120days at $25^{\circ}\text{C}+2^{\circ}\text{C}$. After storage period, battery discharged at 120 to the end voltage of 10.5V, discharge duration measured and Actual Capacity C_{a20} calculated.	The actual capacity C_{a20} obtained after storage shall be $\geq 75\%$ (i-e 95.6Ah & 95.6Ah) of actual capacity C_{a20} before retention		

Special Note: Scope of Installation & Commissioning of VRLA/SMF Batteries:

- Bidder has to erect and commission the battery bank.
- Bidder has to record the individual cell and output voltages in charge mode.
- Bidder has to visit during final commissioning and integration with 10 kVA UPS as and when required (By phone/Physically).



(D P Garg)
ED/POM

(For and behalf of RailTel Corporation of India Ltd.)