CORRIGENDUM-4

I. **Clause 3.9** Tender Technical Evaluation sheet ---- (COVER-2) **as published to be deleted and is replaced as below.**

CLAUSE 3.10 TENDER TECHNICAL EVALUATION SHEET ---- (COVER-2)

- 3.10.1 Technical parameters to be complied.

Sl.no	Parameter	Rating / Range	Complied (Yes/ No)	Remarks
1	Type	Three phase Permanent Magnet Synchronous Servo Motor (with or without Gear up to the bidder to decide)		
2	Quantity of servo motor	152 & 8 spare (160 no in total)		
3	Servo motor Max. Speed	Less than 6000 rpm (Without inbuilt/External gear) **(Servo motor to be sized for Max. velocity of 1.6 m/s and Max. acceleration is 25m/s^2)**		Max Speed of servo :
4	Nominal speed of the Servo motor	**To be specified by the bidder**		
5	Type of Gear and Gear Ratio and flange size	**To be specified by the bidder**		
6	Servo motor Voltage	400V/ 600V		Voltage:
7	Servo motor Maximum Torque	**To be specified by the bidder**		
8	Servo motor Brake torque	Electrical release based on Force Fig.(as per corrigendum.1,Sl.no.9).		Brake Torque:
9	Servo motor Max. Current	**To be specified by the bidder**		
10	Servo motor Encoder	Multiturn absolute with 128 signal periods		
11	Type of cooling	Axial fan		
12	Cooling fan power supply	230V AC/24V DC		Power supply:
13	IP class of servo motor	IP65 or better		IP class:
14	Connector/s	Suitable power connection & Encoder connection (Or) Single integrated connector for both input power and encoder		Connector/s:
15	Shaft material	Stainless steel		

16	Enclosure	Aluminium or better		
17	Winding material	Insulated copper		
18	Max. Motor Weight	< 10 kg		Motor weight (kg) :
19	Shaft length / Diameter	• 30-60mm length • 12-25 mm diameter (Table.1, Sl no.13 also revised to 12-25mm diameter)		Shaft length(mm) : Diameter(mm) :
20	Mounting	**Flange dimension to be specified by the bidder**		
21	Insulation class	Class F or better		Insulation class:
22	Controller Hardware	**Single or Multi axis- On board Multi Ethernet, multi encoder, Engineering port I/O extension digital/ analog. (to be specified by the bidder)**		
23	Quantity of controllers	**To be specified by the bidder as per the technical specification section 3.1 (Operating modes)**		
24	Communication Protocol	SERCOS/EtherCAT/FINS/SINEC/MELSEC/PROFINET/Ethernet-IP		Communication Protocol:
25	Open source protocols	CoDesys/Visual studio/MATLAB with bidder's library to access the controller.		Open source protocol:
26	Firmware	Upgraded/Latest version of the firmware for closed loop synchronization		
27	Type	**Single or dual/multi axis Servo drive (To be specified by the bidder)**		
28	Quantity of converters and inverter units	**The number of converter units and inverter units To be Specified**		
29	Max current (per axis)	36 A		
30	I/O	**Two Analog input/output channels and Two Digital input / output channels for each axis/motor/paddle. This should be available to be accessed via the controller logic. (Not required - if dedicated Analog & Digital input/output channels are provided at the controller end)** **(To be specified by the bidder)**		

31	Accessories	5m standard power cum encoder/Power and encoder cable/s		
32	IP class	IP 20 or better (Drive & Controller)		
33	Warranty Period	1 years (min)		Warranty Period:

Note: The requirements compiled and listed in the above table shall be complied with fully in order for the bid to be considered for further evaluation of Technical bid. Those bids not satisfying this condition will be disqualified.

- **3.10.2 Details to be provided by bidder and evaluation method.**

The technical bid and presentation will be evaluated by NTCPWC as per the marking system below. Only those bidders who score 80 or more marks will be considered for opening of financial bids.

Sl.no	Parameter	Max. Marks
1	Know-how & knowledge of the OEM equipment for wave generation capability in MEWM configuration either in position or force feedback method. Proof to be provided in terms of P.O/commissioning reports / publications from reputed source for the OEM equipment.	35
2.	Proposed servo motor configuration, drive and controller selection by the bidder.	20
3.	Architecture of the communications/integrations. Mode of operations of the wave generation – synchronization/speed in communications/ failure switches.	20
4.	Proposal for performing the specification tests as in Clause 3.9.	15
5.	Training for the supplied product and service support in India.	10

----------End of Corrigendum ----------