

**MAHARASHTRA STATE ELECTRICITY TRANSMISSION COMPANY LIMITED**

**CIN No. : U40109MH2005SGC153646**

**Name of Office:** Central Purchase Agency,

**Office Address:** Prakashgad, 1<sup>st</sup> Floor, Plot No G-9, Anant Kanekar Marg, Bandra (East),  
Mumbai-51

**Contact No.:** 022-26474211/26472131

**Email Id:** [cecpa@mahatransco.in](mailto:cecpa@mahatransco.in)

SP/T-0602/0323

Date: 18.04.2023

**Amendment-II**

Sub:- Procurement of 420kV, 245kV & 145kV Class CBs (Circuit Breakers) under LE schemes for replacement of existing old 420kV, 245kV & 145kV Class Circuit Breakers of Nashik, Vashi & Amravati Zones of MSETCL against e-Tender No.SP/T-0602/0323 (Rfx No.5000001095) submission due on 17.04.2023.

**--- Extension in due date of submission and opening and Revision in GTP,Annexure-F & Section-III thereof.**

Please refer e-Tender No. SP/T-0602/0323 (Rfx No.5000001095) advertised for subject works.

In response to above tender, the **Clarifications/Amendment to General Technical Particulars for Item No.1 i.e.400kV Circuit Breaker with PIR Product id: 500028314** is given in enclosed herewith. Bidders are requested to submit the GTP in physical form and fill online accordingly.

Also, **Item No.2 i.e. Product Id: 500028313** having **Material description** as 400kV Circuit Breaker, 3 Phase, 1-Pole tripping type (without PIR) shall be supplied **without Controlled Switching Device (CSD)** alongwith common control cabinet, support structure and other allied equipment's/ items 420kV, 3150Amp., 63kA/3sec with Spring-Spring operating mechanism, class C2-M2.Accordingly, the Revised Annexure-F & Section-III is attached herewith.

The Due dates of Submission and Opening of Tender are extended as under:

- i) Due date and time of Submission of bid : 28.04.2023 upto 16:00 Hrs.
- ii) Due date and time of Opening of bid : 28.04.2023 at 16:05 Hrs.

All participants bidders are requested to take note of above and submit their bids accordingly. All other terms & conditions of the Tender Specifications remain unchanged.

Sd/-

Executive Engineer (St-VI)

**GENERAL TECHNICAL PARTICULARS FOR ITEM NO.1:400KV CIRCUIT BREAKER WITH PIR**  
**Product id: 500028314**

S.NO	GTP Paramaters	Bidders Response
1	1)Name of the Manufacturer	
2	2) Manufacturer's type designation	
3	3) Rated Voltage (KV rms)	
4	5) Maximum ( continuous service rated voltage) (KV rms)	
5	4) Normal current rating Under normal Conditions (continuous) (Amp)	
6	5) Short time current rating for (a) 3 second duration (KA rms)	
7	6) Short time current rating for (b) 1 second duration (KA rms)	
8	7) Maximum temperature rise over ambient when carrying rated full load current ( furnish temp.rise for that part of C.B.for which the diff. between acceptable & guaranteed temp. rise is minimum within limit or not. Say Yes or No)	
9	8) Breaking Capacity (a) Symmetrical (KA)	
10	9) Breaking Capacity (b) Assymmetrical (KA)	
11	10) Making capacity (Peak KA)	
12	11) Total break time in ms (a) at 10% rated interrupting capacity	
13	11) Total break time in ms (b) at 100% rated interrupting capacity	
14	12) Arcing time (ms)	
15	13 i) Closing time (ms)	
16	13 ii) Opening Time (ms)	
17	14) Minimum reclosing time at full rated interrupting current from the instant of trip coil energisation (ms)	
18	15 i) Operating duty cycle	
19	15 ii)Minimum dead time for 3 Phase reclosing (ms)	
20	16 a i) Data on restriking voltage at 100% at rated breaking capacity---amplitude factor	
21	16 a ii) Data on restriking voltage at 100% at rated breaking capacity---phase factor	
22	16 a iii) Data on restriking voltage at 100% at rated breaking capacity---natural frequency	
23	16 a iv) Data on restriking voltage at 100% at rated breaking capacity---rate of rise of restriking voltage (Volts/micro sec.)	
24	16 b i) Data on restriking voltage at 60% at rated breaking capacity---amplitude factor	
25	16 b ii) Data on restriking voltage at 60% at rated breaking capacity---phase factor	
26	16 b iii) Data on restriking voltage at 60% at rated breaking capacity---natural frequency	
27	16 b iv) Data on restriking voltage at 60% at rated breaking capacity---rate of rise of restriking voltage (Volts/micro sec.)	
28	16 c i) Data on restriking voltage at 30% at rated breaking capacity---amplitude factor	
29	16 c ii) Data on restriking voltage at 30% at rated breaking capacity---phase factor	
30	16 c iii) Data on restriking voltage at 30% at rated breaking capacity---natural frequency	
31	16 c iv) Data on restriking voltage at 30% at rated breaking capacity---rate of rise of restriking voltage (Volts/micro sec.)	
32	16 d i) Data on restriking voltage at 10% at rated breaking capacity---amplitude factor	
33	16 d ii) Data on restriking voltage at 10% at rated breaking capacity---phase factor	
34	16 c iii) Data on restriking voltage at 10% at rated breaking capacity---natural frequency	
35	16 c iv) Data on restriking voltage at 10% at rated breaking capacity---rate of rise of restriking voltage (Volts/micro sec.)	
36	17 a) Dry-1 minute power frequency withstand test voltage between line terminal and earth (KV rms)	

37	17 b) Dry-1 minute power frequency withstand test voltage between terminals with breaker contacts open (KV rms)	
38	18 i) 1.2 X 50 micro second impulse withstand test voltage between line terminal and earth (KV p)	
39	18 ii) 1.2 X 50 micro second impulse withstand test voltage between terminals with breaker contacts open (KV p)	
40	19 i) Type of bushing	
41	19 ii) Bushing---Dry-1 minute power frequency withstand test voltage (KV rms)	
42	19 iii) Bushing---Dry flashover voltage (KV rms)	
43	19 iv) Bushing---Wet flashover voltage (KV rms)	
44	19 v) Bushing---1.2 X 50 micro second impulse withstand voltage (KVp)	
45	19 vi) Bushing---Creepage Distance Total (mm)	
46	19 vii) Bushing---Weight of bushing including SF6 gas (kg)	
47	20 i a) Minimum clearances in air between phase centre to centre (mm)	
48	20 i b) Minimum clearances in air between phase live part to live part (mm)	
49	20 ii) Minimum clearances in air live part to earth (mm)	
50	20 iii) Minimum clearances in air live part to ground level (mm)	
51	21) Number of breaks per phase	
52	22) Total length of breaks per phase (mm)	
53	23) Type & material of main contacts	
54	24) Type of auxiliary contacts	
55	25) Material of auxiliary contacts	
56	26) Contacts silver plated or not	
57	27) Thickness of silver plating of contacts (microns)	
58	28) Contact pressure (KG)	
59	29) Type of device used if any to limit rate of rise of restriking voltage	
60	30) Voltage grading device used, if any	
61	31 i) Number of auxiliary contacts provided of following types--- those closed when breaker is closed	
62	31 ii) Number of auxiliary contacts provided of following types--- those open when breaker is closed	
63	31 iii) Number of auxiliary contacts provided of following types--- those adjustable with respect to the position of main contacts	
64	32 i) Type of operating mechanism : Opening	
65	32 ii) Type of operating mechanism : Closing	
66	32 iii) Type of operating mechanism : Type designation	
67	32 iv) Type of operating mechanism : Actuating force required for charging spring manually (N) (Test report of actual measurement of force to be submitted)	
68	33) Control circuit voltage DC (V)	
69	34 A i) Power required for trip coil at D.C. voltage of 220V (Watts)	
70	34 A ii) Power required for trip coil at D.C. voltage of 110V (Watts)	
71	34 B) Continuous current rating of trip coil (mA)	
72	35 i) Power required for closing coil at D.C. voltage of 220V (Watts)	
73	35 ii) Power required for closing coil at D.C. voltage of 110V (Watts)	
74	36) SF6 Gaspressure of the SF6 interruptor	
75	37 a) Impact load while opening (KN)	
76	37 b) Impact load while closing (KN)	
77	38) Total weight of breaker (without SF6) including support structure (Kg)	
78	39 a) Weight of SF6 gas in CBs in kg	
79	39 b) Overall dimension (mm X mm X mm)	
80	40) Details of mounting with Drg. No.	
81	41 a) Terminal pad material	
82	41 b) Terminal pad net surface area	
83	41 c) Terminal pad net cross section	

84	41 d) Terminal pad thickness of silver plating	
85	42 i) Difference in the instants of closing opening of contacts at rated voltage and pressure within a pole (milli second)	
86	42 ii) Difference in the instants of closing opening of contacts at rated voltage and pressure between a pole (milli second)	
87	43 i) Minimum dead time for single phase reclosing (ms)	
88	43 ii) Minimum dead time for three phase reclosing (ms)	
89	43 iii) Minimum dead time for limit of adjustment of dead time for three phase reclosing (ms)	
90	44) Rated Voltage of bushing (KV)	
91	45) Corona Extinction Voltage (KV rms)	
92	46) Partial discharge level (pico-coulumb)	
93	47 i) Number of auxiliary contacts per pole provided for purchaser's use---NO	
94	47 ii) Number of auxiliary contacts per pole provided for purchaser's use---NC	
95	48 a) Rated voltage of auxiliary contacts (Volts)	
96	48 b i) Current capacity of auxiliary contacts---Continuous (Amp)	
97	48 b ii) Current capacity of auxiliary contacts---Breaking (Amp)	
98	48 b iii) Guaranteed maximum leakage rate of SF6 gas per year (%)	
99	49 a) No.of opening the CB is capable of performing without insp., replacement of contacts, mechanism parts or other main parts at 50% rated current	
100	49 b) No.of opening the CB is capable of performing without insp., replacement of contacts, mechanism parts or other main parts at 100% rated current	
101	49 c) No.of opening the CB is capable of performing without insp., replacement of contacts, mechanism parts or other main parts at 50% rated STC current	
102	49 d) No.of opening the CB is capable of performing without insp., replacement of contacts, mechanism parts or other main parts at 100% rated STC current	
103	50) Single Capacitor Bank Current Switching Current (Amps)	
104	51) Rated pressure of SF6 gas in the circuit breaker (Kg/sq.cm)	
105	52) Rated pressure of SF6 gas in the gas cylinders (Kg/sq.cm)	
106	53) Quantity of SF6 gas required per single pole unit (kg)	
107	54) Quantity of SF6 gas per cylinder (kg)	
108	55) Weight of empty cylinder (kg)	
109	56) Quantity of absorbant required per pole (kg)	
110	57) Recommended interval for renewal of absorbant in case of outdoor circuit breakers operating in tropical conditions	
111	58) Chemical composition of absorbant	
112	59) Quantity of absorbant covered in the scope of supply (including spare quantity) (Kg)	
113	60) Limits of gas pressure for pressure operation of circuit breaker (kg/sq.cm)	
114	61) Pressure and temperature at which the temperature compensated gas pressure switch will give alarm (kg/sq.cm and deg.C)	
115	62) Pressure and temperature at which the temperature compensated gas pressure switch will cut off (kg/sq.cm and deg.C)	
116	63) Name of SF6 gas supplier and country of origin	
117	64) Quantity of SF6 gas required for actual use in breakers (kg)	
118	65) Quantity of SF6 gas required as spare (kg)	
119	66) Chemical composition of gas--- Qty of air by weight (ppm)	
120	67) Chemical composition of gas--- Qty of H2O by weight (ppm)	
121	68) Chemical composition of gas--- Qty of CF4 by weight (ppm)	
122	69) Chemical composition of gas--- Qty of free acid by weight (ppm)	
123	70) Motor Particulars: 1)Manufacturer	

124	70) Motor Particulars: 2) Type & Frame Size	
125	70) Motor Particulars: 3) Application	
126	70) Motor Particulars: 4) Rated Output (KW)	
127	70) Motor Particulars: 5) Duty Cycle	
128	70) Motor Particulars: 6) Rated Voltage Number of Phase and Frequency	
129	70) Motor Particulars: 7) Allowable Voltage Variation (%)	
130	70) Motor Particulars: 8) Allowable Frequency Variation (%)	
131	70) Motor Particulars: 9) Full Load Current (Amp)	
132	70) Motor Particulars: 10) Rated Speed (RPM)	
133	70) Motor Particulars: 11) Full Load Efficiency (%)	
134	70) Motor Particulars: 12) Full Load Power Factor	
135	70) Motor Particulars: 13) Method of Starting	
136	70) Motor Particulars: 14) Starting Current (A)	
137	70) Motor Particulars: 15) Type of Enclosure	
138	70) Motor Particulars: 16) Class of Insulation	
139	70) Motor Particulars: 17) Starting Torque	
140	70) Motor Particulars: 18) Maximum Torque	
141	70) Motor Particulars: 19) Whether can be used in outdoor operation? (Yes/No)	
142	70) Motor Particulars: 20) Safe stall time (secs)	
143	70) Motor Particulars: 21 a) Temperature rise above 15 deg.C measured by resistance method	
144	70) Motor Particulars: 21 b) Temperature rise above 15 deg.C measured by thermometer method	
145	70) Motor Particulars: 22) Type and No. of terminals brought out	
146	70) Motor Particulars: 23) Type of connection during continuous running (Star Delta)	
147	70) Motor Particulars: 24) Type and size of cable for which gland is provided in the terminal box	
148	70) Motor Particulars: 25) Shaft orientation (Horizontal / Vertical)	
149	71 i) Rating of pre-insertion resistor(ohms)	
150	71 ii) Minimum pre-insertion time(ms)	
151	72) Is Documentary evidence to establish experience of not less than five years in the design, manufacture, supply & testing and successful operation for atleast two years for the offered material as per Clause No. 15.1	
152	73) The tenderer should have adequate in house testing facilities for conducting all the acceptance tests in accordance with relevant IS. [Bidder to Confirm & submit documentary evidence]	
153	74) Are documents in support of clause no. 15.4 of (Technical Specification) (if applicable) submitted?	
154	75) Are documents in support of clause no. 15.5 of (Technical Specification) (if applicable) submitted?	
155	76) The Tenderer shall furnish, with his bid, Type test reports of tendered Equipment/material of equal or higher voltage class.	
156	77) The bidder is liable for disqualification on account of any of the reasons as per Clause 15.8 of Technical Specification [Bidder to confirm acceptance]	
157	78) Bidder has to furnish all the documents required for fulfilling the qualifying requirements as per clause no. 15.1 to 15.10 in physical form and furnish the list of documents submitted in electronic form	

158	79) Bidder has to furnish an undertaking in physical as well as in electronic form regarding confirmation that the offered Circuit Breaker shall meet all requirements specified in the specification duly signed by the authorised person and company seal.	
159	80) Notwithstanding anything stated in Technical Specification, the purchaser's decision in this regard will be final (Bidder to confirm the acceptance).	

**Note:To be submitted in Physical**