

Ref: BHE/PW/PUR/NTPRT-BAL-CVL-BOP/2682/Corg-3

Date: 19-12-2022

To,
ALL BIDDERS,

Sub: Corrigendum-03: Issuance of Clarifications.

Scope of Work: CIVIL & ARCHITECTURAL WORKS OF BOP WORKS FOR FQA LAB, O&M STORE, CISF BUILDING, MAIN GATE COMPLEX ETC. AT 3X800 MW PVUNL PATRATU STPP JHARKHAND.

References:

1. E-Tender Spec No: BHE/PW/PUR/NTPRT-BAL-CVL-BOP/2682

NIC Tender ID: 2022_BHEL_20389_1

Bidders to kindly take note of the following:

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AA) ISSUANCE OF CLARIFICATIONS:

S l. N o	Refere nce Docum ent	Reference Chapter/Ann exure	Referenc e Tender Clause	Query/Clarification Required	BHEL Reply
1	TCC	Chapter XI		Item No. A1841 not mentioned in tender specification as per mentioned	List of the equipment for FQA lab required for item No A1841 is enclosed

All other Terms and conditions of the Tender Specification shall remain unaltered unless expressly amended by BHEL in writing. Bidders are requested to submit as a part of their offer, a copy of this corrigendum duly Digitally countersigned by the authorized signatory as a token of Bidder's unqualified acceptance of this corrigendum.

BIDDERS MAY PLEASE NOTE THAT SUBJECT TENDER IS E-TENDER AND THE OFFER IS TO BE SUBMITTED ONLY IN E-PROCUREMENT PORTAL → <https://eprocurebhel.co.in>
BIDDERS WHO HAVE ALREADY SUBMITTED THEIR OFFERS PRIOR TO ISSUANCE OF THIS CORRIGENDUM IN E-TENDER PORTAL ARE REQUIRED TO RE-SUBMIT THEIR OFFER AFTER TAKING COGNIZANCE OF THIS CORRIGENDUM.

Thanking you,
Yours faithfully,

GM (Purchase)

CLAUSE NO.	WORKSHOP, LAB, M&C EQUIPMENTS			एनटीपीसी NTPC																																																																																																															
	Annexure-III FQA LAB EQUIPMENTS (A) CIVIL EQUIPMENTS <table><tr><th>S.N.</th><th>Equipment</th><th>Quantity</th></tr><tr><td>1</td><td>Impact testing machine</td><td>1</td></tr><tr><td>2</td><td>Crushing value apparatus</td><td>1</td></tr><tr><td>3</td><td>Los angles Abrasion Testing Machine</td><td>1</td></tr><tr><td>4</td><td>Bitumen Extractor Machine</td><td>1</td></tr><tr><td>5</td><td>Vicat apparatus with deskpot</td><td>2</td></tr><tr><td>6</td><td>Le-Chatlier flask and moulds</td><td>1</td></tr><tr><td>7</td><td>Cement cube moulds</td><td>18</td></tr><tr><td>8</td><td>Vibrating Machine</td><td>1</td></tr><tr><td>9</td><td>Shrinkage Limit Apparatus with mercury</td><td>1</td></tr><tr><td>10</td><td>Automatic Sieve Shaker</td><td>2</td></tr><tr><td>11</td><td>Automatic/Manual mortar mixer</td><td>1</td></tr><tr><td>12</td><td>Density Basket & Density pot</td><td>1 each</td></tr><tr><td>13</td><td>Proctor testing equipment</td><td>1</td></tr><tr><td>14</td><td>Slump test apparatus</td><td>2</td></tr><tr><td>15</td><td>Hot air oven</td><td>1</td></tr><tr><td>16</td><td>Electric Platform Balance (150kg)</td><td>1</td></tr><tr><td>17</td><td>Electric pan balance 10kg (1gm)</td><td>1</td></tr><tr><td>18</td><td>Precision balance 600gm (0.1gm)</td><td>1</td></tr><tr><td>19</td><td>Rapid moisture meter</td><td>1</td></tr><tr><td>20</td><td>Thermometer for measurement of room temperature</td><td>1</td></tr><tr><td>21</td><td>Thermometer for measurement of temperature of bitumen, concrete...</td><td>1</td></tr><tr><td>22</td><td>Burret</td><td>2</td></tr><tr><td>23</td><td>Measuring cylinders</td><td>4</td></tr><tr><td>24</td><td>Digital Compression Testing Machine 2000 KN capacity</td><td>1</td></tr><tr><td>25</td><td>Digital Compression Testing Machine 500 KN capacity</td><td>1</td></tr><tr><td>26</td><td>Measuring flask</td><td>4</td></tr><tr><td>27</td><td>Measuring tape – 3m, 10m, 30m, 50m</td><td>2 each</td></tr><tr><td>28</td><td>Concrete cube moulds</td><td>18</td></tr><tr><td>29</td><td>Concrete Mixer 0.5 cum capacity (Electrically operated)</td><td>1</td></tr><tr><td>30</td><td>Sieves for coarse & fine aggregate</td><td>1 set</td></tr><tr><td>31</td><td>Curing tank</td><td>1</td></tr><tr><td>32</td><td>Flakiness and elongation index test gauges</td><td>2 each</td></tr><tr><td>33</td><td>Liquid Limit Apparatus</td><td>1</td></tr><tr><td>34</td><td>pH meter</td><td>1</td></tr><tr><td>35</td><td>Pycnometer</td><td>2</td></tr><tr><td>36</td><td>Trowel (small & big), Trays, Sampling Scoop and steel buckets</td><td>4 each</td></tr></table>				S.N.	Equipment	Quantity	1	Impact testing machine	1	2	Crushing value apparatus	1	3	Los angles Abrasion Testing Machine	1	4	Bitumen Extractor Machine	1	5	Vicat apparatus with deskpot	2	6	Le-Chatlier flask and moulds	1	7	Cement cube moulds	18	8	Vibrating Machine	1	9	Shrinkage Limit Apparatus with mercury	1	10	Automatic Sieve Shaker	2	11	Automatic/Manual mortar mixer	1	12	Density Basket & Density pot	1 each	13	Proctor testing equipment	1	14	Slump test apparatus	2	15	Hot air oven	1	16	Electric Platform Balance (150kg)	1	17	Electric pan balance 10kg (1gm)	1	18	Precision balance 600gm (0.1gm)	1	19	Rapid moisture meter	1	20	Thermometer for measurement of room temperature	1	21	Thermometer for measurement of temperature of bitumen, concrete...	1	22	Burret	2	23	Measuring cylinders	4	24	Digital Compression Testing Machine 2000 KN capacity	1	25	Digital Compression Testing Machine 500 KN capacity	1	26	Measuring flask	4	27	Measuring tape – 3m, 10m, 30m, 50m	2 each	28	Concrete cube moulds	18	29	Concrete Mixer 0.5 cum capacity (Electrically operated)	1	30	Sieves for coarse & fine aggregate	1 set	31	Curing tank	1	32	Flakiness and elongation index test gauges	2 each	33	Liquid Limit Apparatus	1	34	pH meter	1	35	Pycnometer	2	36	Trowel (small & big), Trays, Sampling Scoop and steel buckets	4 each
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	Note : Brief specification for items 16 & 17 Flexible heating pads Ceramic flexible heaters with additional ceramic fiber insulation encased in stainless steel mesh and protected by a stainless steel backing plate, manufactured using high grade materials and have a working temperature capability of 135 Degree C to 140 Degree C, can be powered from power source. Heater pads shall be consisting of multi strand nickel –chromium wire & shall be electrically insulated by interlocking sintered alumina beads and capability of providing a flexible high heat transfer area and should match (i.e. no gap between heater and tubes after mounting) with PP panel's surfaces. Arrangement for firm clamping it on PP panels should also be provided. Or Other flexible type heating pads suitable to be rapped perfectly around tubes and applicable for specified temperature range for stress relieving (pre heating / post heating) will be also acceptable. Portable hardness testing machine with Data recorder Portable hardness testing machine with Data recorder, based upon magnetic coercive force measurement as per ISO 3226.																																																									
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	The machine should be suitable for measuring the hardness indirectly by measuring coercive force & range should be as per hardness of different joints as envisaged & inspected by vendors while joining the pressure parts tubes, headers etc., at site. (C) ELECTRICAL EQUIPMENTS <table><tr><th>S.N.</th><th>Equipment</th><th>Quantity</th></tr><tr><td>1</td><td>Multimeter (Digital, Analog)</td><td>2</td></tr><tr><td>2</td><td>Megger (0-5KV), Motorised/0-1 KV hand operated</td><td>1 each</td></tr><tr><td>3</td><td>Tachometer</td><td>1</td></tr><tr><td>4</td><td>Tongtester (AC & DC), 4000A</td><td>2</td></tr><tr><td>5</td><td>Wattmeter, Ammeter, Voltmeter</td><td>1 each</td></tr><tr><td>6</td><td>H. V. Tester (0-100KV)</td><td>1</td></tr><tr><td>7</td><td>Resistance bridge: Kelvin Bridge</td><td>1</td></tr><tr><td>8</td><td>Earth Tester</td><td>2</td></tr><tr><td>9</td><td>Fault Locater (cable test kit)</td><td>1</td></tr><tr><td>10</td><td>Relay test kit</td><td>1</td></tr><tr><td>11</td><td>Grounding device/Earthing device</td><td>2</td></tr><tr><td>12</td><td>Tan delta test kit</td><td>1</td></tr><tr><td>13</td><td>BDV tester for oil</td><td>1</td></tr><tr><td>14</td><td>Spirit level</td><td>2</td></tr><tr><td>15</td><td>Vibration meter</td><td>1</td></tr><tr><td>16</td><td>Noise level meter</td><td>2</td></tr><tr><td>17</td><td>Micrometer/Vernier calliper/Measuring tape</td><td>2 each</td></tr><tr><td>18</td><td>Magnifying glass</td><td>4</td></tr><tr><td>19</td><td>Torque wrench</td><td>1 set</td></tr><tr><td>20</td><td>Ductor for Trf. Wdg, "R"</td><td>1</td></tr><tr><td>21</td><td>Variable AC/DC source (0-220V)</td><td>2</td></tr><tr><td>22</td><td>Dead Weight Test (accuracy class min 0.05%)</td><td>1</td></tr><tr><td>23</td><td>Pressure gauge (accuracy class 0.25%)</td><td>2</td></tr><tr><td>24</td><td>Electro pneumatic calibrator (accuracy 0.1% of full scale)</td><td>1</td></tr><tr><td>25</td><td>Fluidised Temp bath (100-600 deg. C, stability +/- 0.2% deg. C)</td><td>1</td></tr><tr><td>26</td><td>Thermocouple test furnace up to 1400 °C with uncertainty of 1 °C</td><td>1</td></tr><tr><td>27</td><td>Barometer (aneroid) 660 to 800 mm/dg accuracy, +/- 0.3% of full scale</td><td>2</td></tr><tr><td>28</td><td>Mercury thermometer (accuracy up to 0.1 °C)</td><td>2</td></tr><tr><td>29</td><td>Manometer (test & U tube)</td><td>1</td></tr><tr><td>30</td><td>Hygrometer</td><td>1</td></tr><tr><td>31</td><td>Portable V. meter Calibrator</td><td>1</td></tr><tr><td>32</td><td>Resistance Thermometer (bridge 0-2000, resolution 0-001, accuracy +/-0-005, sensitivity 0.001%, amb. Temp. 50 °C +/- 0.005% of span per 1°C)</td><td>1</td></tr></table>	S.N.	Equipment	Quantity	1	Multimeter (Digital, Analog)	2	2	Megger (0-5KV), Motorised/0-1 KV hand operated	1 each	3	Tachometer	1	4	Tongtester (AC & DC), 4000A	2	5	Wattmeter, Ammeter, Voltmeter	1 each	6	H. V. Tester (0-100KV)	1	7	Resistance bridge: Kelvin Bridge	1	8	Earth Tester	2	9	Fault Locater (cable test kit)	1	10	Relay test kit	1	11	Grounding device/Earthing device	2	12	Tan delta test kit	1	13	BDV tester for oil	1	14	Spirit level	2	15	Vibration meter	1	16	Noise level meter	2	17	Micrometer/Vernier calliper/Measuring tape	2 each	18	Magnifying glass	4	19	Torque wrench	1 set	20	Ductor for Trf. Wdg, "R"	1	21	Variable AC/DC source (0-220V)	2	22	Dead Weight Test (accuracy class min 0.05%)	1	23	Pressure gauge (accuracy class 0.25%)	2	24	Electro pneumatic calibrator (accuracy 0.1% of full scale)	1	25	Fluidised Temp bath (100-600 deg. C, stability +/- 0.2% deg. C)	1	26	Thermocouple test furnace up to 1400 °C with uncertainty of 1 °C	1	27	Barometer (aneroid) 660 to 800 mm/dg accuracy, +/- 0.3% of full scale	2	28	Mercury thermometer (accuracy up to 0.1 °C)	2	29	Manometer (test & U tube)	1	30	Hygrometer	1	31	Portable V. meter Calibrator	1	32	Resistance Thermometer (bridge 0-2000, resolution 0-001, accuracy +/-0-005, sensitivity 0.001%, amb. Temp. 50 °C +/- 0.005% of span per 1°C)	1	
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35	Test (reference) RTD	2																																									
36	Digital Storage Oscilloscope	1																																									
37	Power Pack 0-6 VDC Current up to 10A ripple max 5MW load regulation 0.01%	1																																									
38	RCL meter (for Resistance, Capacitance, Inductance measurement) Accuracy 2% of FSD or better	2																																									
39	pH Simulator	1																																									
40	Portable TC Thermo couple / RTD calibrator / simulator	1																																									
41	Function generator	1																																									
42	Portable high speed trend recorder	1																																									
43	Portable multifunction counter	1																																									
44	Non-contact Laser Temperature Gun (up to 1000 °C	2																																									
45	Motor Current Signature Analyser Kit	1																																									
Note: The above equipment to be provided as per relevant IS Code meeting technical specification requirements																																											
EPC PACKAGE FOR PATRATU SUPER THERMAL POWER STATION EXPANSION PHASE-I (3X800 MW)		TECHNICAL SPECIFICATION SECTION-VI, PART-A BID DOC. NO. CS-9585-001-2	SUB-SECTION-VII WORKSHOP, LAB, M&C EQUIPMENTS	PAGE 18 OF 18																																							