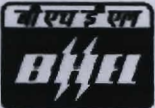


55279/2020/PS-PEM-EL

|                                                                                   |                                                                                                                  |                                |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------|
|  | <b>PRE-QUALIFICATION REQUIREMENTS FOR</b><br><br><b>ELECTRICAL LAB (CALIBRATION &amp; DIAGNOSTICS) EQUIPMENT</b> | DOC. NO. PE-PQ-999-556-E002    |
|                                                                                   |                                                                                                                  | REVISION NO. 0 DATE 02.06.2017 |
|                                                                                   |                                                                                                                  | SHEET NO. 1 OF 1               |

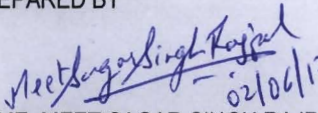
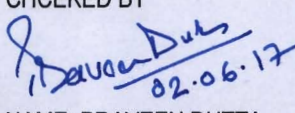
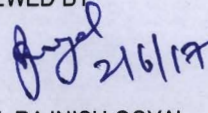
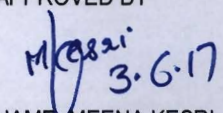
**ITEMS :** Electrical Lab Equipment For Calibration and Diagnostics

**SCOPE:** Supply : YES; Erection & Commissioning : NO;

|   |                                                                                                                                                                                                                                                                                                          |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Vendor should have supplied Electrical Lab (Calibration and Diagnostics) equipment to process plant/ refinery/ power plant/ nuclear plant / testing Lab.                                                                                                                                                 |
| 2 | Vendor should be in business of supplying electrical lab (Calibration and Diagnostics) equipment for at least last two (2) years from the date of application for registration or date of techno commercial bid opening (as applicable).                                                                 |
| 3 | Minimum two nos. purchase orders for electrical lab (Calibration and Diagnostics) equipment shall be submitted which should not be more than 5 years old from the date of application for registration or date of techno-commercial bid opening (as applicable) for establishing continuity in business. |

**NOTES-**

1. Consideration of offer shall be subject to customer's approval of bidders, if applicable.
2. Bidder to submit all supporting documents in English. If documents submitted by bidder are in language other than English, a self-attested English translated document should also be submitted.
3. Any other project specific pre-qualifying requirement shall be as per Annexure-I and bidder shall submit relevant supporting documents.
4. Notwithstanding anything stated above, BHEL reserves the right to assess the capabilities and capacity of the bidder to perform the contract, should the circumstances warrant such assessment in the overall interest of BHEL.
5. After satisfactory fulfilment of all the above criteria/ requirement, offer shall be considered for further evaluation as per NIT and all the other terms of the tender.
6. Refer Annexure-II for list of Electrical Lab (Calibration and Diagnostics) Equipment. This list shall be referred for cases of vendor registration.

|                                                                                                                                                                  |                                                                                                                                              |                                                                                                                                                |                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| PREPARED BY<br><br>NAME: MEET SAGAR SINGH RAJPAL<br>DESIGNATION: SR. ENGINEER | CHECKED BY<br><br>NAME: PRAVEEN DUTTA<br>DESIGNATION: DGM | REVIEWED BY<br><br>NAME: RAJNISH GOYAL<br>DESIGNATION: AGM | APPROVED BY<br><br>NAME: MEENA KESRI<br>DESIGNATION: GM [ELECT.] |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|

## ANNEXURE-II - ELECTRICAL LAB (CALIBRATION &amp; DIAGNOSTICS) EQUIPMENT

| S. No. | Item Name                                |
|--------|------------------------------------------|
| 1      | PORTABLE 3 PHASE SUBSTANDARD WATTMETER   |
| 2      | PORTABLE CALLIBTAROR FOR RTDS            |
| 3      | PORTABLE MULLICURRENT CALIBRATOR         |
| 4      | TABLE MOUNTED MA CALIBRATOR              |
| 5      | PORTABLE MILLIVOLT CALIBRATOR            |
| 6      | MULTIFUNCTION INSTRUMENT CALIBRATOR      |
| 7      | REFERENCE METER                          |
| 8      | PORTABLE REF MTR & PHANTOM LOAD TEST SET |
| 9      | DIGITAL POWER & ENERGY METER CALIBRATOR  |
| 10     | DC POWER SUPPLY EQUIPMENT                |
| 11     | AC VOLTAGE/CURRENT SOURCE                |
| 12     | DIGITAL VARIABLE FREQ SOURCE (OSC)       |
| 13     | STANDARD CURRENT TRANSFORMER             |
| 14     | STANDARD CURRENT TRANSFORMER (50-1500A)  |
| 15     | STANDARD CURRENT TRANSFORMER (10-100A)   |
| 16     | AUTO-TRANSFORMER (VARIAC) SINGLE PHASE   |
| 17     | 1 PH AUTO TRANSFORMER (VARIAC) 10AMP     |
| 18     | 1 PH AUTO TRANSFORMER (VARIAC) 30AMP     |
| 19     | AUTO-TRANSFORMER (VARIAC) THREE PHASE    |
| 20     | 3 PH AUTOTRANSFORMER (VARIAC) 10AMP      |
| 21     | 3 PH AUTOTRANSFORMER (VARIAC) 30AMP      |
| 22     | STANDARD POTENTIAL TRANSFORMER           |
| 23     | SUBSTANDARD FREQUENCY METER              |
| 24     | PRECISION DIGITAL FREQUENCY METER        |
| 25     | TRUE RMS DIGITAL CLAMP METER             |
| 26     | UNIVERSAL BRIDGE (LCRQ)                  |
| 27     | KELVIN DOUBLE BRIDGE                     |
| 28     | LCR METER BRIDGE                         |
| 29     | ANTISTATIC LAB TEST BENCH                |
| 30     | COMPUTERIZED RELAY TEST BENCH            |
| 31     | DECADE RESISTANCE BOX                    |
| 32     | THREE PHASE SHIFTER                      |
| 33     | EARTH FAULT LOCATOR                      |
| 34     | DUAL TRACE PORTABLE STORAGE OSCILLOSCOPE |
| 35     | CATHODE RAY OSCILLOSCOPE (PORTABLE)      |
| 36     | DISTURBANCE RECORDER                     |
| 37     | PARTIAL DISCHARGE MEAS KIT               |
| 38     | PHANTOM LOAD TEST SET                    |
| 39     | DUCTOR OHM METER                         |
| 40     | MICRO OHM METER                          |
| 41     | PORTABLE CIRCUIT BREAKER MOTION ANALYSER |
| 42     | CKT BREAKER CAPACITANCE MEAS. METER      |
| 43     | CONTACT RESISTANCE MEAS KIT              |
| 44     | PORTABLE HAND HELD INFRARED TEMP SCANNER |
| 45     | THERMAL IMAGING CAMERA                   |

*Meeta Singh*  
02/06/17

*David*  
02/06/17

*2/6/17*

## ANNEXURE-II - ELECTRICAL LAB (CALIBRATION &amp; DIAGNOSTICS) EQUIPMENT

|    |                                          |
|----|------------------------------------------|
| 46 | PORTABLE KARL-FISCHER TEST SET           |
| 47 | RELAY TEST SET                           |
| 48 | BUCHHOLZ RELAY TESTING KIT               |
| 49 | POWER ANALYSER METER                     |
| 50 | HARMONIC ANALYSER                        |
| 51 | FREQUENCY RESPONSE ANALYSER              |
| 52 | VIBRATION METER CUM ANALYSER             |
| 53 | PORTABLE SECONDARY INJECTION TEST KIT    |
| 54 | SECONDARY INJECTION KIT (0-100A)         |
| 55 | SECONDARY INJECTION KIT (0-30A)          |
| 56 | PORTABLE SING PH PRIMARY INJ TEST SET    |
| 57 | PRIMARY INJECTION KIT                    |
| 58 | PORT. PRIM. & SEC. CURR. INJECTION TEST  |
| 59 | INSTRUMENT TRANSFORMER TEST SET          |
| 60 | CT ANALYSER TEST SET (PORTABLE)          |
| 61 | PRECISION MANUAL SCANNING RADIO METER    |
| 62 | SF6 / HYDROGEN / HALOGEN GAS DETECTOR    |
| 63 | SF6 GAS LEAK DETECTOR                    |
| 64 | HYDROGEN GAS LEAK DETECTOR               |
| 65 | FUEL GAS LEAK DETECTORS                  |
| 66 | TRF BUCHHOLZ GAS ANALYSER                |
| 67 | DISSOLVED GAS ANALYSER FOR TRF OIL       |
| 68 | COMPUTERIZED COMBUSTIBLE GAS ANALYSER    |
| 69 | GAS CHROMATOGRAPH AND DATA STATION       |
| 70 | UHV TYPE OIL PURIFYING EQUIPMENT         |
| 71 | AUTOMATIC OIL TEST SET                   |
| 72 | OIL RESISTIVITY TEST KIT                 |
| 73 | TRANSFORMER OIL BREAKDOWN TEST SET       |
| 74 | SIGNAL GENERATOR                         |
| 75 | FUNCTION GENERATOR                       |
| 76 | SP EQPT. FOR TESTING LIGHTNING ARRESTORS |
| 77 | TAN DELTA CAPACITANCE MEAS TEST SET      |
| 78 | TRF TURNS RATIO TESTER                   |
| 79 | TURN RATIO MTR WITH VEC GP TESTING FAC   |
| 80 | WDG RESISTANCE MTR FOR TRF, GEN & MOTORS |
| 81 | TELESCOPIC EARTHING ROD                  |
| 82 | HV DISCH ROD & PORT. EARTHING EQUIPM.    |
| 83 | HV DISCHARGE RODS UP TO 39.5 KV          |
| 84 | HV DISCHARGE RODS FROM 132 KV TO 420 KV  |
| 85 | HOT STICK (UPTO 11 KV )                  |
| 86 | HOT STICK (UPTO 21 KV )                  |
| 87 | HOT STICK (UPTO 220 KV )                 |
| 88 | HOT STICK (UPTO 400 KV )                 |
| 89 | HIGH VOLTAGE DETECTOR                    |
| 90 | LIVE LINE DETECTOR 33KV                  |
| 91 | LIVE LINE DETECTOR 400KV                 |
| 92 | BATTERY CAPACITY TEST KIT                |

*Meetha Singh Rajwal*  
02/06/17

*S. Dhanu Das*  
02/06/17

*Arjun*  
2/6/17

## ANNEXURE-II - ELECTRICAL LAB (CALIBRATION &amp; DIAGNOSTICS) EQUIPMENT

|     |                                           |
|-----|-------------------------------------------|
| 93  | BATTERY IMPEDANCE TEST EQUIPMENT          |
| 94  | BATTERY DISCHARGE UNIT                    |
| 95  | CABLE FAULT LOCATION SET                  |
| 96  | FIBER OPTIC CABLE TESTER                  |
| 97  | HIGH VOLTAGE TESTING SET AC               |
| 98  | HIGH VOLTAGE TESTING SET DC               |
| 99  | HIGH VOLTAGE TESTING KIT 1KVA (DC)        |
| 100 | HIGH VOLTAGE TESTING KIT 5 KVA (DC)       |
| 101 | HIGH VOLTAGE TESTING KIT 6 KVA (DC)       |
| 102 | HIGH VOLTAGE TESTING KIT 10KVA (AC)       |
| 103 | 150kVA (AC) High Voltage testing kit      |
| 104 | HIGH VOLTAGE TESTING KIT 25KVA (AC)       |
| 105 | HIGH VOLTAGE TESTING KIT 40KVA (AC)       |
| 106 | HIGH VOLTAGE TESTING KIT 325KVA (AC)      |
| 107 | HIGH VOLTAGE TESTING KIT 3.5 KVA (DC)     |
| 108 | HIGH VOLTAGE TESTING KIT 250 KVA (AC)     |
| 109 | INTERFACIAL TENSION METER                 |
| 110 | MOTOR ALIGNMENT TESTER                    |
| 111 | MOTOR CHECKER                             |
| 112 | MOTOR CURRENT SIGNATURE ANALYSER          |
| 113 | MOTOR SURGE TESTER                        |
| 114 | ELECTRICAL TEST BED( LT DRIVES)           |
| 115 | ELECTRICAL TEST BED( HT DRIVES)           |
| 116 | OVEN FOR HT MOTORS                        |
| 117 | OVEN FOR LT MOTORS                        |
| 118 | SELECTIVE LEVEL OSCILLATOR                |
| 119 | PORTABLE SLCT LVL MTR, TRACKING LVL GEN   |
| 120 | AUTOMATIC PENSKEY MARTIN FLASH POINT APPR |
| 121 | NON CONTACT RADIATION PYROMETER           |
| 122 | DIGITAL STROBOSCOPE                       |

*Mr. Sagar Singh Ryzal*  
02/06/17

*S. Suman Dub*  
02/06/17

*Pragat* 2/6/17