

ANNEXURE-1
LIST OF EQUIPMENTS – LOT 1

Sl. No.	Description	Quantity Nos	Recommended Make
1	Portable Hydrogen Leakage Detector	2	As per specification
2	Battery discharge resistor (250A)	1	As per specification
3	Battery discharge resistor (100A)	1	As per specification
4	Low, medium & High voltage proximity detector	3	Salisbury/Amprobe/Equivalent
5	Knee point voltage Test Kit	1	As per specification
6	Manual Earth tester	1	As per specification
7	Vacuum bottle tester	1	Megger or equivalent

1. TECHNICAL SPECIFICATION FOR PORTABLE HYDROGEN LEAKAGE DETECTOR

Sr. No	Specification	Yes/ No
1	The instrument should be of detecting & pinpoint the gas leaks higher concentrations of hydrogen in the surrounding air.	
2	The detector should also has an audible alarm that warns option when a threshold is crossed and a headphone jack which allows you to connect earphones for more focused and productive working in loud or distracting environments.	
3	Flexible measurement probe for inaccessible places	
4	Optical and audible alarm with bar display for increasing and dangerous	

	gas concentrations.		
5	Trend display showing maximum leakage		
6	Rechargeable battery with charger		
7	Measuring range	10 ppm to 4.0 Vol.%	
8	Lower response	10 ppm	
9	1st alarm limit	200 ppm	
10	2nd alarm limit	10000 ppm	

2. TECHNICAL SPECIFICATION FOR BATTERY DISCHARGE RESISTOR (250A)

Sr. No	Specification	Yes/ No
1	The instrument able to discharge the substation battery set of 12V/24/48/110/220V/380V DC system with facility of regulating discharge rate manually.	
2	The discharge current capacity of the kit shall be 250A	
3	The discharge current shall be user adjustable with sufficient amount of current selection switches/MCBs of discharge current rating 4A, 5A, 10A, 50A	
4	The discharge current can be settable at every voltage, subject to maximum current value.	
5	The kit shall display the running parameters during discharges like discharge currents (A), present Voltage (V) and temperature inside enclosure.	
6	The Instrument should have internal cooling arrangement.	
7	Test leads and necessary cables should be provided.	
8	The equipment shall be supplied with roller arrangement to transport from one location to other easily and a user manual.	

3. TECHNICAL SPECIFICATION FOR BATTERY DISCHARGE RESISTOR (100A)

Sr. No	Specification	Yes/ No
1	The instrument able to discharge the substation battery set of 12V/24/48/110/220V/380V DC system with facility of regulating discharge rate manually.	
2	The discharge current capacity of the kit shall be 100A	
3	The discharge current shall be user adjustable with sufficient amount of current selection switches of discharge current rating 2A, 5A, 10A, 40A	

4	The discharge current can be settable at every voltage, subject to maximum current value.	
5	The kit shall display the running parameters during discharges like discharge currents (A), present Voltage (V) and temperature inside enclosure.	
6	The Instrument should have internal cooling arrangement.	
7	Test leads and necessary cables should be provided.	
8	The equipment shall be supplied with roller arrangement to transport from one location to other easily and a user manual.	

4. TECHNICAL SPECIFICATION FOR PROXIMITY DETECTOR

Sr. No	Specification	Yes/ No
1	The instrument should be rugged and reliable.	
2	The instrument should be capable of verifying the presence of voltage in low, medium and high voltage test applications up to 400 kV without contacting the energized conductor.	
3	Instrument should be provided with hot-stick arrangement including hot-stick.	
4	Voltage selection feature for verifying different voltage levels	
5	Alert with visual and loud audible indication when used in proximity of live source.	

5. TECHNICAL SPECIFICATION FOR KNEE POINT VOLTAGE TEST KIT

Sr. No	Specification	Yes/ No
1	Knee point tester should be suitable for outdoor applications involving application of AC high voltage to test objects, particularly knee point tests on CVTs and CTs at site.	
2	Should be provide Panel mounted controls and indicators with easy to read legend.	
3	Continuously variable output by one knob control.	
4	Kit should have the linear scaled kV meter and leakage mA meter.	
5	Fused overload protection should be provided for safety purpose.	
6	Output voltage range should be minimum 0-3kV with 500mA output	

	current.	
7	Kit should be provided with minimum 3mtrs long mains cable and 6mtr long test leads.	

6. TECHNICAL SPECIFICATION FOR MANUAL EARTH TESTER

Sr. No	Specification	Yes/ No
1	The Manual, hand driven Earth Tester is required for the measurement of Resistance of Earth under the following conditions. <ul style="list-style-type: none"> • Measurement of Earth Resistance for large complex earthing systems. • Accurate measurement of Earth Resistance in sub-station site where variation of soil resistivity values will be large. 	
2	Manual Earth Tester shall be robust, compact instrument designed for measuring electrode resistance. The instrument should have facility to measure Ground Resistance by standard Fall of Potential method using 3 terminal methods by Current and Potential spikes	
3	Shall have silent Generator with collapsible handle	
4	Centrifugal Clutch (Governor) For Constant Output Voltage	
5	Check nut locking arrangement to prevent anti-clockwise rotation	
6	Wide and anti-parallax mirror scale	
7	Shall have anti-magnetic, aluminum body with protected metallic flap over glass window of scale	
8	Accurate, reliable and quick response for measurement of resistance of earth	
9	Accuracy shall confirm to IS : 923/1979	

7. TECHNICAL SPECIFICATION FOR VACUUM BOTTLE TESTER

Sr. No	Specification	Yes/ No
1	The Vacuum bottle test kit should be able to ascertain whether or not the vacuum bottle is intact before putting back into service by giving optical Indication.	
2	Safety as per EMC standards.	
3	Voltage Range: 10kv to 60kv DC (User Selectable)	

4	Resolution: > 350 micro Amperes	
5	Ripple: Not more than 3%	
6	<p>Indications/Warnings while performing operation:</p> <ul style="list-style-type: none"> - When High voltage being applied. - When Vacuum bottle is healthy - When Vacuum bottle is Defective - When test carried out for more than 1min - When Test Interrupted 	
7	Protection: Overload Cut-Out	
8	Mains voltage 230 V AC +/-10, 50 / 60 Hz	
9	Accessories: The bidder should provide High voltage cable with large test clip connectors for easy & firm connection.	