

Annexure-1

**1. TECHNICAL SPECIFICATION FOR PORTABLE HYDROGEN LEAKAGE
DETECTOR**

Sr. No	Specification		QTY in NO.
1	Gas Detection	Hydrogen (H2)	02
2	Usage Type	Portable Hand Held	
3	Area of Use	At Open Atmosphere	
4	Detection Type	Electrochemical Microprocessor Based	
5	Alarm	User Configurable/For Lower-Higher Concentration with audible alarm & LED Indication	
6	Battery	Rechargeable battery with charger	
7	Accessory	Flexible measurement probe for inaccessible places	
8	Measurement Units	User selectable % LEL, ppm or % Vol	
9	Measurement Range	0-10000 ppm/0-1%Vol,0-20%LEL	

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

Sr. No	Specification		QTY in NO.
1	Voltage Range	220V to 390 V DC (Selectable)	01
2	Total Battery Current	250A DC Max, User Selectable - 50/100/150/200/250 A	
3	Display Current & Voltmeter	96x96 Volt & Ammeter Voltage – 0 to 500 VDC, Current – 0 to 300A DC	
4	Cooling	Forced Air Cooling Fan (AC)	
5	Protection	Short Circuit Protection	
6	Accessories	<ol style="list-style-type: none">1. Test leads and necessary cables should be provided.2. 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		QTY in NO.
1	Voltage Range	0 to 250 V DC (Selectable 12V/24V/48V/150/220/250V)	01
2	Total Battery Current	100A DC Max, User Selectable Switches for current – 20Ax3,10x3,5Ax2	
3	Display Current & Voltmeter	96x96 Volt & Ammeter Digital Voltage – 0 to 300 VDC, Current – 0 to 150A DC	
4	Cooling	Forced Air Cooling Fan (AC)	
5	Protection	Short Circuit Protection	
6	Accessories	<ol style="list-style-type: none">1. Test leads and necessary cables should be provided.2. 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 VOLTAGE DETECTOR

Sr. No	Specification		QTY in NO.
1	Voltage Selection Range	240 V to 400 kV 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.	03
2	Type	Non-Contact Detection by Proximity	
3	Indications	Bright LED visual indication, Audio indication	
4	Self-Diagnostics	Self Test Function to ensure healthiness of the detector before use	
5	Suitability	Both Indoor & Outdoor	
6	Accessories	Instrument should be provided with hot-stick arrangement including hot-stick for test in 400 kV circuit.	

5. TECHNICAL SPECIFICATION FOR KNEE POINT VOLTAGE TEST KIT

Sr. No	Specification		QTY in NO.
1	Input Supply	230V AC 50 Hz	01
2	Output Voltage	0 to 3 KV AC,	
3	Output Current	250 mA	
4	Type	Continuously variable output through Manual Variac along with control Unit & Transformer Unit	
5	Voltmeter	Scale reading 0-3kV AC Digital meter	
6	Leakage mA Meter	Scale reading 0-250 mA AC Digital meter	
7	Protection HV Overcurrent Tripping	Over load trip protection with selection at 100 mA & 250 mA AC	
8	Duration	1 minute "ON" / 3 minutes "OFF"	
9	Indications	a) Zero inter lock indication b) HV ON indication c) HV fail indication	
10	Controls	ON / OFF Push Buttons	
11	Cables & Accessories	Input Mains Cord (3 Meters) – 1 Nos. HV Output Cable with Crocodial Clips (6 meters Each) – 2 Nos., Control Cables	

6. TECHNICAL SPECIFICATION FOR MANUAL EARTH TESTER

Sr. No	Specification		QTY in NO.
1	Type	Hand Driven Generator Type	01
2	Accuracy	±5%	
3	Body	Metal Body	
4	Terminals	Four Terminal	
5	Display	Analogue	
6	Resistance Range	0-10 Ohms	
7	Other required features	<ol style="list-style-type: none"> 1. 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. 2. Shall have silent Generator with collapsible handle 3. Centrifugal Clutch (Governor) For Constant Output Voltage 4. Check nut locking arrangement to prevent anti-clockwise rotation 5. Wide and anti-parallax mirror scale 	

7. TECHNICAL SPECIFICATION FOR VACUUM BOTTLE TESTER

Sl. No.	Specifications		QTY in NO.
1	Input Supply	230V AC + /- 10%, 50/60 Hz.	01
2	Output Voltage	Up-to 60 kV DC (in suitable selectable steps)	
3	Output Ripple	≤ 3%	
4	Output Accuracy	≤ 1.5%	
5	Trip Limit	300 μA	
6	Protection	Test Voltage Auto Off in case of Bottle failure/	
7	Display	Digital display: kV and μA; Accuracy: 3% max + /- 2 digits	
8	Minimum Indications/Warnings while performing test:	HT ON - When High voltage being applied. Healthy Indicator - When Vacuum bottle is healthy Failure Indicator - When Vacuum bottle is Defective	
9	Cables & Accessories:	Input supply cable, Necessary High Voltage Cables, Ground Cable High voltage cable should be provided with large test clip connectors for easy & firm connection	
10	The Vacuum bottle test kit should be able to ascertain healthiness of the vacuum bottle whether or not the is intact before putting back into service by giving optical Indication.		

8. TECHNICAL SPECIFICATION FOR DIGITAL MICRO OHM METER

Sr. No	Specification	Yes/ No	QTY in NO.			
1	The Instrument shall be capable of measuring low resistance with 1micro-ohm resolution		01			
2	The instrument shall be able to deliver guaranteed stable readings on inductive as well as resistive loads.					
3	The instrument shall be supplied with minimum 3mtr length leads along with both C-clamp & GP Kelvin clip.					
4	The instrument shall be provided with protection against Back EMF.					
5	Instrument shall be capable of operating at 230V±10%, 50Hz single phase supply.					
6	Measurement specification					
	Range	Resolution	Accuracy	FS rdg.	DC current applied	
	20mΩ	1uΩ	±(0.05+5)	19.999mΩ	1A	
	200mΩ	10uΩ	±(0.05+5)	199.99mΩ	1A	
	2000mΩ	100uΩ	±(0.05+5)	1999.9mΩ	100mA	
	20Ω	1mΩ	±(0.05+5)	19.999Ω	10mA	
	200Ω	10mΩ	±(0.05+5)	199.99Ω	1mA	
	2000Ω	100mΩ	±(0.05+5)	1999.9Ω	100uA	