

**ANNEXURE-1**  
**LIST OF EQUIPMENT LOT-2**

<b>Sl. No.</b>	<b>Description</b>	<b>Quantity Nos</b>	<b>Recommended Make</b>
1	Secondary Injection Kit	1	OMICRON/ISA/MEGGER

## ANNEXURE-1

### 1. TECHNICAL SPECIFICATION FOR RELAY SECONDARY INJECTION KIT

Sr. No	Specification	Yes/ No		
1	Both protection test set and universal calibrator under one equipment.			
2	Protection relay test set should be capable of testing <ul style="list-style-type: none"> <li>- Numerical relays</li> <li>- Static relays</li> <li>- IEC 61850 IEDs (GOOSE and Sampled Values)</li> <li>- Electromechanical relays (high burden relays / single phase)</li> <li>- Relay panels</li> <li>- End-to-End testing with GPS or IRIG-B</li> <li>- Bus-bar protection (up to 22 signal generators)</li> <li>- Wide area protection</li> </ul>			
3	Kit should possess following features <ul style="list-style-type: none"> <li>- Transient fault simulation.</li> <li>- Power swing.</li> <li>- Advance distance.</li> <li>- Advanced differential.</li> <li>- CT saturation simulation.</li> <li>- CB simulation.</li> <li>- Compensated network.</li> <li>- Transient playback (COMTRADE, PL4 (EMTP), ...)</li> <li>- Checking SCADA annunciations</li> <li>- Burden measurement</li> <li>- CT/VT polarity checker</li> <li>- Wiring checker</li> <li>- Event recording</li> </ul>			
4	Continuous synchronized output.			
5	Software with manual and automated testing functionality.			
6	10-channel analog measurement and transient recording functionality.			
7	Current Generator specifications			
	Current setting minimum ranges	6-phase AC (L-N)	6 x 0 ... 12.5 A or better	
		3-phase AC (L-N)	3 x 0 ... 25 A or better	
		1-phase AC (3L-N)	1 x 0 ... 75 A or better 2 x 0 ... 37.5 A or better	
DC (3L-N)		1 x 0 ...±35 A or better		

			2 x 0 ...±17.5 A or better	
	Power for current generators (Minimum)	6-phase AC (L-N)	6 x 80 VA or better	
		3-phase AC (L-N)	3 x 160 VA or better	
		1-phase AC (3L-N)	1 x 480 VA or better 2 x 240 VA or better	
		1-phase AC (L-L)	1 x 320 VA or better	
8	Voltage generator specifications			
	Voltage selection ranges (Minimum)	4-phase AC (L-N)	4 x 0 ... 300 V	
		3-phase AC (L-N)	3 x 0 ... 300 V	
		1-phase AC (L-L)	1 x 0 ... 600 V	
		DC (L-N)	4 x 0 ... ±300 V	
	Power for Voltage Generator (Minimum)	3-phase AC (L-N)	3 x 100 VA	
		4-phase AC (L-N)	4 x 75 VA	
		1-phase AC (L-N)	1 x 200 VA	
		1-phase AC (L-L)	1 x 275 VA	
		DC (L-N)	1 x 420 W	