Corrigendum:1 Supply, Installation, Testing & Commissioning of 4nos 11KV Cable Fault Locating Machine (Tender no.CMC/BR/22-23/RB/PR/KG/1061)

Date: 22.09.2022

Bidder-1

SI NO.	Technical Requirement		Bidder remarks	BRPL Reply
1	**Scope**	a) This specification covers the technical requirements of design, manufacture, maintenance, training, packing, forwarding, supply and unloading at site/store and performance of Fault Locating Van with all accessories for trouble free & efficient performance. b) This specification also covers the Familiarization and Training facility of the product as per the BRPL requirement. The training shall be arranged at OEM and hand holding for operations and analysis of data for one year post delivery of Fault Locating Van in Delhi, India. c) BRPL may purchase complete set including van or separate parts based on BOQ mentioned in the tender. For individual parts purchase OEM to follow equipment wise technical requirement mentioned in this specification. d) In case equipments wise purchase, OEM to install and commission the same inside the vehicle provided by BRPL at site after delivery.	------	
~~2~~	~~**Applicable Standards**~~	~~e) IEC 60270: High Voltage Test techniques-Partial Discharge measurements.~~ ~~f) IEC 60229: Electric cables - Tests on extruded over sheaths with a special protective function.~~ ~~g) IEEE 400.4-2015: Field testing and evaluation of the insulation of shielded power cable systems.~~ ~~h) IEEE 400.4-2015: Field Testing of shielded power cable system using VLM (less than 1 Hz)~~	Please be informed that this standards are not applicable to Cable fault location, this are related to Cable testing and diagnosis.	ok

3	**Climatic condition of services**	a) Maximum ambient temperature : 50 o C b) Minimum ambient temperature : 0 o C c) Maximum daily average ambient Temp : 42 o C d) Maximum Humidity : 100% e) Minimum Humidity : 10% f) Average annual Rainfall : 750 mm g) Rainy months : June to Oct h) Seismic Zone : 4 The equipment shall be suitable for operations as per Indian Climatic Conditions. The atmosphere is generally laden with mild acid and dust suspended during dry months and subjected to fog in cold months. The design of the equipment and accessories shall be suitable to withstand seismic forces corresponding to an acceleration of 0.1g.	-------	-----
4	**General Technical Requirements**			
4.1	**SURGE GENERATOR**	SUITABLE FOR FAULT LOCATION IN LOW/MEDIUM/HIGH VOLTAGE POWER CABLES --DC High Voltage Testing 4/8/16 kV. --Limited surge current up to 200mA. at 16kV -- Inbuilt ARC Reflection Filter. --Surge Testing Range 4/8/16 kV. --HV Connection cable 50 mtr. single core coaxial copper with drum -- Energy- 2000 joule at each step --Earth cable 75 mtr. minimum 16 sqmm multi stranded flexible copper with drum. --Main cable 70 mtr, minimum 3 core 2.5 sqmm copper -- Discharge rod with lead 5 mtr. -- Digital Multi meter -- 32 pieces tool kit -- Measuring wheel	-------	----

4.2	**Reflectometer**	Reflectometer for pre-location of cable faults from 0 to 50 km. --Digital Time Domain Reflectometer. --Pulse Echo, Impulse Current, Arc Reflection & Decay methods --Large and automatic graph storage. --Easy menu based operation. --Precise fault distance & cable end measurement. --Testing Range up to 50 KM. -- Arm Multi short (5 nos. minimum) (ARM Multi-shot 15nos) -- Sampling rate- 200MHz minimum(400MHz min) --Minimum Volt of pre locator- 50 --Pulse width- 50 ns to 10 micro sec --Return voltage protection Please include following feature: 1) Screen Size Minimum 8'' 2) Portable TDR and Battery Operated	--------- 1) The fault location is all about quick fault detection without damaging the cable under test. To achieve this goal it is very important to consider ARM multi-shot with minimum 15 graphs. In this feature user will get 15 fault traces in single high voltage pulse. Often user don't get the fault graphs if going with 5nos. of ARM Multi-shot. All other distribution utility like TATA, Torrent and Govt. utilities are having 15 fault trace feature. This feature is also available with other manufacturer. 2) Higher the sampling speed higher the resolution and accuracy. Please see the attached graph to see the difference. 3) TDR shall be portable and battery	1. As per NIT 2. As per NIT 3. Portable TDR shall be battery operated. Bidder has to consider accordingly in their price bid.

			operated, this will help user to operate it irrespective of mains supply. In- depended TDR can easily detect Close and open circuit faults without the need of surge generator.	

4.3	**Pinpointing Set**	Sensitive acoustic and magnetic sensor to pinpoint fault. --Proportional signal on large L.C.D. --Coincidence figure readout i.e. distance to the fault in milliseconds. --Accurate display of magnetic and acoustic indications. --Light weight receiver -- Automatic noise rejection -- Automatic mute function. -- Route navigation -- Display of fault distance in mtr	------	---
4.4	**HIGH VOLTAGE MURRAY LOOP**	FOR PRE-LOCATION OF LOW & HIGH RESISTANCE CONSTANT LEAKAGE FAULT. --Portable, Battery operated. --Suitable for constant leakage fault up to 5 K.V. DC. --Gives reading in % of cable length. -- Accuracy up to 1% of fault distance.	-------	---
4.5	**CABLE IDENTIFICATION SET**	--For Identification of the Cable. --Accessories included: - Inductive clamps -- Voltage- 100 volt minimum -- Current- 100 amp minimum	-------	----
4.6	**CABLE ROUTE TRACER AND LIVE CABLE LOCATOR**	FOR ROUTE TRACING OF UNDERGROUND CABLES --Route tracing of underground cable. --Depth measurement -- Watt- 5 minimum, -- 5 mtr depth minimum can be measured.	Please consider 10W generator for Cable route location. 5 wats can be effective up to 6.6kV cables, but not for 11kV cable n/w.	As per NIT
4.3	**General Construction:**	The entire operation control is carried out via a central operating / interface unit which comprises the TDR for fault location and controls the individual high voltage operating modes and phase selection. All operation modes and techniques and safety control must be fully integrated in the central system control. The system must consist of modern interfaces, preferably USB eg: for a memory stick, Printer preferably a colour printer. All equipments must be installed such that they are compatible for a moving Vehicle and easily bear the vibrations as per the city road conditions. These interfaces must be accessible to enable an updating of the measuring system and recording or logging of all measuring processes. An online help shall support the operator. Operation shall be in English or with help of ICONS. Operating errors should be eliminated by the system. Keys with firm function like Mains “ON”, Mains “OFF” and Emergency “OFF” shall be designed as switches with direct functionality.		As per NIT

	Safety requirement	- Separation of operational and protective earthing in conjunction w an isolating transformer. - Protective earthing cable, minimum 16 mm² for equity in potential between cable test van and station ground. - Fault voltage protection facility for monitoring the maximum permissible contact voltage between the test van and the surround earth, and of quick voltage increases with max. 1/Vs during high voltage operation. - Monitoring the resistance of the connected station ground and protective earth for safe parameters in conformity with VDE. - Safety switching device with warning lights and an external Emergency-Off switch. - Automatic discharge and earthing switch. - Safety contacts on the doors. - Partition panel between HV cabin and operating cabin. - Floor of the Vehicle should be suitably insulated - Analogue indication of residual high voltage at the test object in case of a mains failure. - Caution plate (6 nos. Minimum) shall be provided along with Van. Following are the required parameters for Caution plates a. Plate shall be painted by fluorescent paint b. Tie shall be provided to bind on cable c. Printing shall be- i. “Danger Plate” ii. “BSES Rajdhani Power Ltd” iii. “HV Cable Under Test” iv. “Mobile No.....”		

	Vehicle	- All cable test equipment should be installed in a vehicle as consistent with lowest possible dimensions. - System should be fitted in a Force traveller van or Tata Van of any Indian make or equivalent. - Seating space should be provided for minimum 3 additional persons apart from Driver. - The Van should include an operator's station in the form of a table with storage space and Swivel chair with locking facility. - Partition panel between HV cabin and operating cabin. - The operator's cabin should include air conditioner. - Van should be CNG based. - The van must have availability of single phase supply of 220kV, 50 Hz as required for station uses. - It should have USB Mobile charging points (2 Nos.)		
	Name Plates and Marking	Name Plate: i. Fixing by rivet only ii. Material : Anodized aluminum 16SWG / SS iii. Background : Satin Silver iv. Letters, diagram &border : Black v. Process : Etching vi. Printing Details: Month & year of manufacture, equipment type, input & output rating, purchaser name & order number, guarantee period Marking: The Fault Locating van shall be painted with white colour. The vehicle shall have markings as "BSES RAJDHANI POWER Ltd" in standard BSES colour along with BSES LOGO at suitable locations. A marking with EHV Cable Fault Locating Van. A marking depicting HIGH VOLTAGE CABIN should also be given on the Vehicle including Danger Plate	-------	

	Tests	**Type Test:** All the accessories must be type tested from CPRI/ERDA/any other international laboratory in accordance of IEC/IEEE/IS and the report shall not be older than 5 years. Type test report validity is 5 years from the date of tender floating. In case of expired type test (type test report is older than 5 years), bidder has to conduct the test in accordance with IEC/IEEE/IS from above mentioned laboratory from BRPL PO without any cost implication to BRPL. **Routine Test and Acceptance Test:** All the routine and acceptance tests shall be carried out in accordance with the relevant IS/IEC standards. All the Routine/Acceptance tests shall be witnessed by BSES Rajdhani Power Ltd authorized representative or any other agency deputed by BRPL	--------	
	Warranty	5 Years	---------	
	Demo	The OEM shall provide the demonstration of the vehicle covering all the factors. In case pats purchase, individual demo to be given by OEM at BRPL site based on requirement	---------	
	Pre Dispatch Inspection	BRPL reserve the right to conduct the inspection at any stage of manufacturing as well as before final clearance for dispatching without any intimation to OEM. For dispatch clearance, OEM must raise inspection call at least 10 days before from the proposed date of inspection.	---------	
	PQR	The bidder or its OEM shall have supplied minimum 5 units of offered or higher model to Govt. utility/PSU's . The bidder shall submit the PO copies along with tender documents.	Please include qualification criteria to get the proven instrument.	Shall be as per NIT

Bidder-2

SL NO	Clause no	parameters	Existing specification	Query/Amendment	Remarks	BRPL Reply
1	3.2	Applicable Standards	e) IEC 60270: High Voltage Test techniques- Partial Discharge measurements. f) IEC 60229: Electric cables - Tests on extruded over sheaths with a special protective function. g) IEEE 400.4-2015: Field testing and evaluation of the insulation of shielded power cable systems. h) IEEE 400.4-2015: Field Testing of shielded power cable system using VLM (less than 1 Hz)	These standard are applicable for cable testing and diagnostics and not related to fault locating		ok
2	4.2	Reflectometer	Arm Multi short (5 nos. minimum)	ARM multishot with atleast 15 fault traces per HV shot	The fault location is all about quick fault detection without damaging the cable under test. To achieve this goal it is very important to consider ARM multi-shot with minimum 15 graphs. In this feature user will get 15 fault traces in single high voltage pulse. Often user don't get the fault graphs if going with 5nos. of ARM Multi-shot. All other distribution utility like TATA, Torrent and Govt. utilities are having 15 fault trace feature. This feature is	As per NIT

SL NO	Clause no	parameters	Existing specification	Query/Amendment	Remarks	BRPL Reply
					also available with other manufacturer	
			Sampling rate- 200MHz minimum	Sampling rate- 400MHz minimum	Higher the sampling speed higher the resolution and accuracy. Please see the attached graph to see the difference.	As per NIT
		Screen Size		Minimum 8''	screen size should be mentioned for better dipaly of graphs	10 inch (touch screen)
		Portable		TDR should be portable detachable and Battery Operated	TDR shall be portable and battery operated, this will help user to operate it irrespective of mains supply. In- depended TDR can easily detect Close and open circuit faults without the need of surge generator	Portable TDR shall be battery operated. Bidder has to consider accordingly in their price bid.

SL NO	Clause no	parameters	Existing specification	Query/Amendment	Remarks	BRPL Reply
	4.4	High voltage Murray loop	For pre-location of low & high resistance constant leakage fault. --Portable, Battery operated. --Suitable for constant leakage fault up to 5 K.V. DC. --Gives reading in % of cable length. -- Accuracy up to 1% of fault distance.	This item is not mention in BOM. So, please confirm whether needs to offered?		Not required- As per NIT BOQ
	4.5	Cable Identification set	For Identification of the Cable. Accessories included: - Inductive clamps Voltage- 100 volt minimum -- Current- 100 amp minimum	This item is not mention in BOM. So, please confirm whether needs to offered?		Not required- As per NIT BOQ
	4.6	Cable Route tracer and live cable locator	For route tracing of underground cables --Route tracing of underground cable. --Depth measurement -- Watt- 5 minimum, -- 5 mtr depth minimum can be measured.	This item is not mention in BOM. So, please confirm whether needs to offered?		Not required- As per NIT BOQ
PQR criteria to be added						
1				The bidder or its OEM shall have supplied minimum 5 units of offered or higher model to Govt. utility/PSU's . The bidder shall submit the PO copies along with tender documents		As per NIT
2				OEM service centre in India	Regional service centre for quick service support	OK

Bidder-3

Sl No	Clause No	Description in BRPL Tender	Bidder's Remarks	BRPL Reply
01	2.0 Qualification Criteria Sub clause Note	One successful demonstration of all equipment shall be given by bidder at BRPL site/network/faulty cable during technical evaluation of the tender and it shall be mandatory part of tender. After delivery of equipment at site, hand holding training of 3 months/tracing of 30 faulty cables (whichever is earlier) shall be provided by OEM at BRPL site	Demo shall be waived off, if same equipment is being used by BRPL. It is not mentioned that hand holding training for 3 months is for each equipment or only one person	As per NIT
	2.0 Qualification Criteria Sub clause 1	The equipment with similar or higher rating must have been fully type tested as per relevant IS/IEC and/or any other specified national/international standards from National/ International/ NABL accredited lab. The bidder must have valid type test reports carried out within last 5 (five) years. In case type test reports are older than five (5) years from the date of bid opening, bidder shall submit the undertaking that "since the last type test, the product has not undergone any change in design and the material used and the dimensions of the product are the same as the one on which the type test was conducted". (Type test report older than 10 years shall not be considered for bid participation)	There is no change in offered model since 2010 hence it is requested to consider type test report older than 10 years	Max 10 yrs shall be considered for validity of type test subject to no changes in offered model andtheir design. If type test report is more than 10 yrs old, bidder has to conduct fresh type test (in the event of award of order) from relevant reputed lab before commencement of supply
02	Section II: special terms and conditions of contract. Sub clause 1.4	Calibration cost for 5 years within warranty period (NABL approved lab only) for surge generator shall be in the scope of the vendor.	Annual Calibration of surge generator is applicable. It is requested to remove it	As per NIT
03	Section IV price format	Surge generator : Limited surge current up to 200mA. at 16kV	Current at 4 KV and 8 KV is not mentioned. Please mention the corresponding current at 4 & 8 KV for clear evaluation . Corresponding current at 400 mA at 8 KV and 800 mA at 4 KV (according to 200 mA at 16 KV)	As per NIT (Mathematical calculation shall be validated during tender technical evaluation stage)

Sl No	Clause No	Description in BRPL Tender	Bidder's Remarks	BRPL Reply
		Pre locator Size of display	Size of display is not mentioned.	
04	Section IV price format	Price of Surge Generator, Pre locator and pin pointing set need to be mention in the price format	In detailed technical specification of NIT cable route tracer, cable Identification, Murray loop also mentioned Please provide list of equipment to be consider in bid.	As per the BOQ mentioned in the NIT
05	Section IV price format	Qty of Surge Generator, Pre locator and pin pointing set is not similar.	Please clarify the qty of pin pointing set	As per price format/BOQ of NIT
06	Technical specification clause 2 system requirement (page 3 of 9	Mentioned system requirement is for Fully automatic micro processor based equipment. Size of monitor is mentioned 21" or suitable size	Please clarify the requirement (Manual/Semi Automatic/Fully Automatic. Price format and Technical specification are not supporting each other.	Semi-automatic
07	Technical specification clause 3 Technical requirement sub clause 1 b	This specification also covers the Familiarization and Training facility of the product as per the BSES requirement. The training shall be arranged at OEM and hand holding for operations and analysis of data for one year post delivery of Fault Locating Van in Delhi, India.	In Qualifying Criteria hand holding is for 3 month and here 12 month. Please clarify	3 months or 30 nos cable fault identifications (which one is earlier)
08	Technical specification clause 3 Technical requirement sub clause 2 applicable standard	e) IEC 60270: High Voltage Test techniques-Partial Discharge measurements. f) IEC 60229: Electric cables - Tests on extruded over sheaths with a special protective function. g) IEEE 400.4-2015: Field testing and evaluation of the insulation of shielded power cable systems. h) IEEE 400.4-2015: Field Testing of shielded power cable system using VLM (less than 1 Hz)	Mentioned standards are not related to cable fault locator. Please clarify	ok
09	Technical specification clause 4 General Technical requirement sub clause 4.4 to 4.7	Cable Route tracer, Cable Identification set, Murray Loop is mentioned in Technical requirement.	Same is not mentioned in Price Format Please clarify	Bidder has to quote according to price format
10	Delivery Date	Due date for Bid submission	Please extend	Bid Submission date has been extended up to 05.10.2022