



Bharat Heavy Electricals Limited

(A Govt. Of India Undertaking)

Power Sector, Eastern Region

BHEL BHAWAN, PLOT NO. DJ-9/1, SECOTR II,

SALT LAKE CITY, KOLKATA, WEST BENGAL, INDIA

Phone : 033-23398220,033-23211690 FAX : 033-23211960

Sub	TENDER CHANGE NOTICE (TCN-02 DTD. 11/11/2024)
Job	SUPPLY AND COMMISSIONING OF 01 NO 50KV 5A AC HV TEST KIT AT BHEL PSER SITES
Ref	E-TENDER NO. PSER:PUR:TSX:30(II):055(ENQ:24:PP:0015:PUR:58) DATE: 25/10/2024

- 1) [With reference to above, following points/documents, relevant to tender, may please be noted and complied with while submitting the offer.](#)

Sl. No.	Description / Tender clause	MODIFIED TECHNICAL SPECIFICATIONS 50KV/5A AC HIGH VOLTAGE TEST KIT			
1	PART-C: TECHNICAL SPECIFICATION AND SPECIAL TERMS AND CONDITION OF CONTRACT	Sl. No	Technical Specification, Rev00 (Existing Provision)		Technical Specification, Rev01 (Modified Provision)
		1.	INTRODUCTION:	The above test equipment is used to test AC High Voltage Power Frequency (HVPF) dielectric withstand test on wound stators and rotors of generators / motors at various stages of manufacturing assembly and / or erection at different applied voltages.	Same as Rev00
		2.		Input Supply 415Volts \pm 10%, 50Hz \pm 5%, 1 Phase (Between two phases of three phase system) AC.	Same as Rev00
				Output Voltage: Continuously variable 0 to 50 KV AC.	Same as Rev00
				Capacity: 5 A max. at HT side. Current setting regulator to be provided for setting leakage/capacitive current before testing the subject.	Same as Rev00
				Duty Cycle: Intermittent duty cycle i.e. 5 mins. ON, 10 mins. OFF.	Same as Rev00
				Overall Accuracy: \pm 1.5% or better	Same as Rev00

				Percentage Impedance: Not more than 8% in any case.	Same as Rev00
				Operation Control: Microcomputer based Manual control (programmable test Voltage, test current, test duration, rate of rise, ramp and Dwellcontrol, automatic controls of motorized voltage Regulator).	Same as Rev00
		3.	<u>GENERAL ARRANGEMENT:</u>	The above test kit will consist of ACB for Mains ON-OFF, Control Unit, Regulator, Reactor, HV Transformer, HV Potential Divider with measurement box (for HV measurement from HT side) and display meter.	The above test kit will consist of MCCB for Mains ON-OFF, Control Unit with display meters of reputed make, Regulator, Reactor, HV Transformer, HV Potential Divider with measurement box (for HV measurement from HT side).
		4.	<u>TECHNICAL FEATURES:</u>	Power Mains ON – OFF operation by means of an ACB.	Power Mains ON – OFF operation by means of an MCCB.
				‘HT’ ON-OFF push-button, ‘EMERGENCY OFF’ mushroom type push.	Same as Rev00
				Max. HV test level can be adjusted at any value between 0.5 to 50.0 KV at a step of 0.5 KV. After reaching the set voltage the Regulator will stop and HV will remain constant at the set voltage for whole duration of testing.	High Voltage is variable from almost 0 (i.e. 0.5kV) to 50kV Rate of Rise/Fall: At the fixed rate of not more than 1KV/Sec.
				For Automatic Test mode the test sequence will run automatically and Manual Mode to be used mainly for calibration purpose.	Same as Rev00
				Programmable microcontroller system will measure the time duration of HV applied.	Same as Rev00
		5.	<u>METERING:</u>	Suitable panel meters will be provided to set programs. Panel meters will indicate the following:	Same as Rev00
				• Current at the input side	
				• Input Voltage	
				• Output HV	
				• Current at the HT side	
				• Reactor current	
				• Rate of Rise	

				<ul style="list-style-type: none"> • Test Duration 	
				Protective status/error message (if any, Over Voltage, Over Current, Regulator OverRun, Trip)	
		6.	<u>INDICATION:</u>	Visual Indication: 'MAINS ON', 'HT ON', 'REGULATOR NOT AT ZERO', 'TEST PROGRAM START', 'END of TEST' & 'TEST FAILURE' etc.	Same as Rev00
				Audio alarm for 'OVERVOLTAGE', 'END of TEST' & 'TEST FAILURE' etc.	Same as Rev00
		7.	<u>PROECTION & INTERLOCK:</u>	Tripping mechanism for protecting the HV Transformer against over loading. After tripping, HV will be switched OFF.	Same as Rev00
				Zero Start Interlock & over run protection for Regulator.	Same as Rev00
				Enclosure interlocking will be provided.	Same as Rev00
				Control circuitry housed within a robust sheet metal cabinet i.e. control desk withadequate ventilation and good aesthetic appearance.	Same as Rev00
				The wiring cables terminated on suitable terminal blocks with crimped lugs and ferrule nos.	Same as Rev00
				Gland plate with gland holes shall be provided at the bottom or rear side for cable entry.	Same as Rev00
				Good quality of plug in cables along with plug socket (wherever required) is to be given to nullify chances of loose connection in the terminals as it creates trouble during testing.	Same as Rev00
		8.	<u>REGULATOR:</u>	Variable Autotransformer with automatic control.	Same as Rev00
				Variable rate of rise / rate of fall of depending on the max. HV set.	Variable rate of rise / rate of fall fixed at not more than 1KV/Sec.
		9.	<u>REACTOR:</u>	Reactor required to avoid too low power factor for compensating the mains supply current (i.e. to compensate for Capacitive Current for minimum losses, so that Line current drawn during testing is minimum). The Reactor unit is a combination of Shunt Reactor along with aVariable Reactor.	Same as Rev00
		10.	<u>HV TRANSFORMER:</u>	HV Transformer will be oil natural cooled (ONAN) type and of suitable capacity. One end of the high voltage winding will get earth connection through an insulated bushing housed in a small separate cabinet at the side	Same as Rev00

			of LV Terminal Box. Other end of HV winding will be connected to HV terminal. The HV point to be brought out through suitable porcelain insulator and will have isolated LV point brought out suitably to assist tan-delta measurement with existing equipment.	
			The transformer should be designed to withstand frequent intermittent spark over or short circuit conditions under which such testing transformers are designed to operate.	Same as Rev00
			The core of HV Transformer will be of high grade CRGO steel of M4, M3 or M2H grade material only.	Same as Rev00
			The coils will be made of electrolytic copper conductor with suitable insulation between turns and layers.	Same as Rev00
			Two nos. of CTs. Shall be provided at HV winding Neutral side of which one Core shall be to measure HV side Current & 2 nd . Core shall be used to trip Incomer Breaker beyond pre-set value of HV winding current.	CT operated protective trip circuit will be provided in both primary side of the High Voltage Transformer and in the earth return path of the H V winding. Hence it will provide both way protections.
		11.	<u>HV CAPACITIVE POTENTIAL DIVIDER:</u>	
			There will be a capacitive HV Potential Divider provided with low voltage arm. A UHF connector with co axial cable is used to connect a metering circuit (provided in the panel) to indicate High Voltage.	Same as Rev00
			Rated max working voltage: 50KV AC rms.	Same as Rev00
			Capacitance : 100pF (nominal)	Same as Rev00
			The capacitor will be oil-cooled type, provided with corona guard and will be movable with wheels at bottom.	Same as Rev00
		12.	<u>ACCESSORIES:</u>	
			INSULATED DISCHARGE ROD with suitable Earthing cable.	Same as Rev00
		13.	<u>CABLES:</u>	
			Primary cables will be 3 core and minimum 20 Meters long suitable for connection to 415V \pm 10%, 50Hz. \pm 5% 3 Phase AC supply. Voltage grade of cable: 1100V suitably crimped at both end with cable marker indicating place of connection.	Same as Rev00
			Secondary cable will be of flexible copper, 10 meters long suitable for rated current & crimped at both ends	Same as Rev00

				with cable marker indicating place of connection.	
				Control cables shall be flexible copper and each core shall be with identification ferrule nos.the control cables shall have external protection cover against mechanical injury.	Same as Rev00
				A set of flexible Earthing wire with yellow-green insulation shall be provided for body.	Same as Rev00
				Earthing of different equipment of HV test Kit as well as Neutral Earthing of HV Transformer with proper crimp / lug at both ends.	Earthing of different Units of HV test Kit will be done.
				Carrying case will be provided for cables	Same as Rev00
		14.	<u>PAINTING:</u>	The Units will be powder coated outside and inside with white epoxy paint and all bright steel components will be coated with rust preventive paint before dispatch.	Control Unit will be powder coated outside and inside. The Other Units will be epoxy painted. All screws, nuts & Bolts are either of SS or bright steel coated with rust preventive paint.
		15.	<u>Documents:</u>	Operation & Maintenance Manual, Works Test Report, Warrantee Certificate, Circuit Diagram of each unit and total system shall be supplied along with the set.	Same as Rev00
				Soft Copy of all the above documents including Circuit diagram of the system in AUTOCAD& PDF from shall be submitted in two CDs and over email along with the set.	Soft and hard Copy of all the above documents including Circuit diagram shall be submitted in pdf format in two pen drives and over email.
		16.	<u>COMMON STRUCTURE & TRANSPORTATION COVER:</u>	All the above units (except HV Transformer) will be mounted on a structure with lifting arrangement, wheels and proper sheet steel cover for easy movement from site to site without requirement of packing and reconnection between the units every time the set is transferred to a new site.	Same as Rev00
				Control unit to be given at a safe distance separately for safety of the operator.	Same as Rev00

				Necessary shock absorbing pad will be provided to arrest transportation shocks wherever applicable.	Same as Rev00
				Any minor customization if required shall be intimated later.	Same as Rev00
		17.	<u>Warranty & After sale SERVICE:</u>	The Offered model shall be warranted for 3 years from the date of successful commissioning at site	Same as Rev00
				Suitable After Sale Service to be provided as on when it shall be required.	Same as Rev00
		18.	<u>Right to visit Bidders factory</u>	BHEL reserves the right to witness assembly of offered kit at bidder's factory. Prior intimation shall be given before assembly of the units.	Same as Rev00
		19.	<u>Inspection requirement</u>		After complete installation of the kit and before delivery of the kit successful bidder shall intimate BHEL for inspection of the kit at their works. Testing and demonstration of the kit is to be done by the successful bidders in presence of BHEL representative during inspection in bidders works. After getting clearance from BHEL bidder shall proceed for delivery of the kit.

- 2) Due date of submission of offer against the subject tender is hereby **extended from 11-11-2024 (14-00 Hrs. IST) to 21-11-2024 (14-00 Hrs. IST). Techno-commercial bid shall be opened on 21-11-2024 (16-30 Hrs. IST).**
- 3) 'No deviation certificate' is attached. Bidder to submit their offer along with stamped & signed copy of this TCN & 'No deviation certificate' as per attached format only.
- 4) All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

MANAGER (PURCHASE)

(Signature, date & seal of authorized representative of the contractor)

ANNEXURE - IV

FORMAT FOR NO DEVIATION CERTIFICATE
(To be submitted in the bidder's letter head)

To,
Bharat Heavy Electricals Limited,
Power Sector – Eastern Region
2nd FLOOR, Block-DJ, Plot-9/1, Sector – II,
Salt Lake City, Kolkata – 700 091
FAX – 033-2321-1960

Job: SUPPLY AND COMMISSIONING OF 01 NO 50KV 5A AC HV TEST KIT AT BHEL PSER SITES

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Dear Sir/Madam,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/modified the tender documents as appeared in the websites and in case of observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT *and confirm our acceptance to reverse auctioning process* and we hereby convey our unqualified acceptance to all terms and conditions as stipulated in the tender and NIT.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted offer strictly in accordance with tender instructions.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized representative of the bidder)