

THE WEST BENGAL POWER DEVELOPMENT CORPORATION LIMITED
(A Govt. of West Bengal Enterprise)
Corporate Identity No. U40104WB1985SGC039154
Bakreswar Thermal Power Project
P.O.Bk.T.P.P , Dist -Birbhum,Pin -731104

NIT No.: WBPDC/Adv-CC/14-15/168/BkTPP Date:30.12.2014

SUB: Tender document for Procurement of 01 No. Circuit Breaker Analyser for 415V-400KV Circuit Breaker at Bakreswar Thermal Power Project.

SALE OF TENDER PAPER : **05/01/2015 to 24/01/2015 from 10:00 Hrs. to 14:00 Hrs.** on all working days except Sundays and holidays and Saturday from 10:00 Hrs. to 12:00 Hrs. against deposition of Cost of Tender Document at Cash Section of Bk.TPP.

PRE-BID DISCUSSION ON : **On 28/01/2015 at 11:00 Hrs.**

LAST DATE & TIME OF SUBMISSION OF TENDER PAPER : **12/02/2015 upto 14:30 Hrs.**

DATE & TIME OF OPENING (PART-A FOR TECHNICAL BID ALONGWITH COMMERCIAL TERMS & CONDITIONS) : **12/02/2015 at 15:00 Hrs.**

COST OF TENDER PAPER : Rs. 2,000/- (Rupees two thousand only)

DEPOSITED VIDE D.C.R.NO. _____

DATED _____

ISSUED TO M/s. _____

SR. MANAGER (Materials)
BAKRESWAR THERMAL POWER PROJECT
W. B. P. D. C. L.

Earnest Money Deposit

Rs. 1.50 lakhs (Rupees one lakh fifty thousand only) in the form of Demand Draft or Bank Guarantee in favour of "THE WEST BENGAL POWER DEVELOPMENT CORPORATION LIMITED" drawn on /issued by any Nationalised /Scheduled Bank, Suri or United Bank of India, BkTPP Branch. The requisite earnest money should be deposited along with tender papers in a separate sealed envelope. No tender will be entertained without Earnest Money.

NSIC holders are exempted from deposition of EMD. Necessary enlistment certificate should be submitted by the respective bidder.

Cost of Tender Paper

Rs. 2,000/- (Rupees two thousand) in cash only (non refundable)

Sale of Tender Paper

05/01/2015 to 24/01/2015 from 10:00 Hrs. to 14:00 Hrs. on all working days except Sundays and holidays and Saturday from 10:00 Hrs. to 12:00 Hrs. against deposition of Cost of Tender Document at Cash Section of BkTPP.

Pre-bid Discussion

On 28/01/2015 at 11:00 Hrs. at the Administrative Building of BkTPP. Bidders are requested to submit their queries before the Pre-bid discussion.

Last Date of Submission of Tender Papers:

Last date of submission of Tender Paper is 12/02/2015 upto 14:30 Hrs. and the same will be opened (Part-A) at 15:00 Hrs. on the same date in presence of the participating tenderers. Sealed tenders of the parties only who have deposited the requisite amount of Earnest Money will be opened for two part bid.

The Corporation reserves the right to accept / cancel any or all tenders or to split the work without assigning any reason whatsoever. The WBPDCCL does not bind itself to accept the lowest tender and qualification of tenderer will be adjudged as per sole discretion of WBPDCCL authority. The validity of tender will remain effective for 6 (six) months from the date of opening of Price Bid of tender. All other details are available in the tender document.

Enclo:

- Information to Bidders

(K. Sarkar)
Sr. Manager (Materials)
BkTPP/WBPDCCL

- Annexure – I, II & III

THE WEST BENGAL POWER DEVELOPMENT CORPORATION LIMITED
(A Govt. of West Bengal Enterprise)
Corporate Identity No. U40104WB1985SGC039154
Bakreswar Thermal Power Project.
P.O. Bk.T.P.P, Dist-Bibhum. Pin-731 104

NIT No.: WBPDC/Adv-Tend-CC/14-15/168/BkTPP Date:30.12.2014

INFORMATION TO BIDDERS

Sub : Tender document for Procurement of 01 No. Circuit Breaker Analyser for 415V-400KV Circuit Breaker as per detailed technical specifications at Bakreswar Thermal Power Project.

1.0 BID QUALIFYING REQUIREMENT:

Required evidence for the following BQR conditions should be furnished along with the tender. Otherwise the offer will be summarily rejected.

1. Manufacturer or authorized distributor of circuit breaker analyzer should only participate in the tender.
2. The Bidder must have 24 Hours support facility in eastern region of India and details for the support should be enclosed. Any type of defectiveness of the kit to be rectified by the bidder in India on urgent priority basis.
3. The bidder should produce the performance certificate of the same kit using at any Central/State PSU's for at least 2 years
4. The bidder should produce the related support documents specified in the technical specification. i.e. different certificates of EMC: 2004/108/EC, Low voltage Directive (LVD): 2006/95/EC etc.
5. The bidder should confirm the support service or supplying spares of supplied circuit breaker analyzer for at least next 20 years

2.0 TERMS AND CONDITIONS

Sealed Tenders in two parts, Part A (for Technical Specification bid alongwith commercial terms and conditions) and Part B (for Price Bid) in duplicate (Non-transferable) with firm's own seal are invited as detailed in the attached sheet ANNEXURE-II under following terms and conditions:-

1. Tender Notice No. Brief description of the supply and due date of opening should be clearly mentioned on the top of the envelope.
2. Material Delivery Schedule: - Twenty (20) weeks from the date of the order. Delivery is to be effected at BkTPP Store. Unloading will be done by WBPDC.

3. LEAF LET ETC: - The descriptive literature of materials shall have to be enclosed along with the tender / quotation.
4. INSPECTION:-
 - a) Inspection will be carried out by our representative at your works, if required. Inspection will also be carried out at BkTPP stores by the representatives of concerned dept after effecting delivery.
 - b) Third party inspection such as D G S & D, LLYOD etc. may be agreed. In that case, inspection is to be arranged by the tenderer, cost of which will be borne by WBPDCCL.
 - c) Rejected Materials have to be lifted by party at their own cost. Loading at BkTPP for lifting the rejected materials will be arranged by party at their cost.
5. PRICE:-
 - a) Rates and total amount should be mentioned both in figure and words, if there be any difference the fewer amounts will be considered.
 - b) Excise duty, S.T. /VAT, Service Tax, other statutory Levies, Forwarding & Packing & freight etc must be clearly mentioned in the tender/quotation.
 - c) The rates inclusive of delivery at Bk.T.P.P. Stores must be quoted. Break up should also be submitted.
 - d) The D G S & D rate should be quoted, if there be any D G S & D rate contract that is to be furnished.
 - e) Bids or modification of bids received after opening of Tender will not be considered.
6. PAYMENT: 80% payment will be made by Cheque against Store Received Voucher (SRV). The SRV will be issued only after acceptance of material by user department. Payment by Demand Draft with bank charges on vendor's account may be considered subject to mention in relevant quotation / offer. Rest 20% of payment to be made after 6 months successful operation of the kit, certified by the user department.

PAYING AUTHORITY: Bill in triplicate alongwith challans is to be submitted to the G.M (F&A)/ Dy.GM (F & A), WBPDCCL Corporate Office. STD Form for concessional rate of S.T can be provided to the supplier only after completion of supply with submission of final bill. Excise duty can not be without E. Duty Gate Pass (GP-I) E.D. Gate Pass is to be submitted in original along with the Invoice/Bill. Part payment for part delivery will not be allowed.

7. TEST CERTIFICATE:- Material test certificate from Govt. Approved Laboratory may be submitted along with supplies.
8. GUARANTEE:- The material must conform to the specifications as indicated in the purchase order. Also the material should be guaranteed against any manufacturing defects due to faulty design or bad workmanship or defected material for a period of 12 months from the date of commissioning or 18 months from the date of supply whichever is earlier. If any material or part thereof is found or proved to be defective within this period, you shall be liable to replace the same at free of cost within a reasonable period, failing which Bk.TPP authority will take necessary measure for replacement of damaged material from elsewhere and expenditure incurred on above ground shall be realized from you. Guarantee Certificate for supplied material is to be submitted along with material.

9. PERFORMANCE BANK GUARANTEE:- A Bank Guarantee for 5% of the limiting value of basic price will be submitted for security cum performance guarantee. The said Bank Guarantee will be furnished prior to commencement of supply of materials and Bank Guarantee will remain valid till expiry of the guarantee period.
10. LIQUIDATED DAMAGE:- The WBPDCCL reserves the right to repudiate the contract if the materials are not delivered within the stipulated time. However, the authority may waive this condition and impose a L.D. for delayed supply @1/2% on the value of undelivered materials which may be either for total quantity or delivery effected partly beyond the scheduled time and for each week of delay or part thereof up to a maximum of 5% of the total value of the materials.
11. OTHER REQUIREMENTS:- Copies of orders received from Govt. agencies, Undertaking along with proof of execution of the orders shall have to be furnished along with the bids.

Notwithstanding any thing stated above WBPDCCL reserves the right to assess the bidder's capability and capacity to perform the contract, should be circumstances warrant such assessment in the overall interest of WBPDCCL.

WBPDCCL reserves the right to split the order, alter the quantity and reject any or all tenders without assigning any reasons whatsoever. WBPDCCL does not take any responsibility for postal delays.

SR. MANAGER (Materials)
BAKRESWAR THERMAL POWER PROJECT
W. B. P. D. C. L.

ANNEXURE-I

TECHNICAL SPECIFICATION FOR

Circuit Breaker Analyser for 415V-400KV Circuit Breaker at Bakreswar Thermal Power Project:

Sl No.	Item Code	Item Description	Quantity	UOM
1	15T010004	Circuit Breaker Analyser for measuring the operation timing of main, PIR and Auxiliary contacts (Wet & Dry) as well as Individual coil currents, coil resistance & Control voltage of coil with PIR value (Resistance value of parallel contact) in single operation of all type breakers (415 V -400kV).The analyzer should record PIR value & CRM value in numerical form. The analyzer should be able to measure & store parameters.	1.0	NO

1. GENERAL TECHNICAL PARAMETERS

General: The scope of this specification covers Design, Engineering, Manufacturing, testing before dispatch, supply and delivery to site, demonstration of the kit in all types of breaker, training of fully automatic three phase Circuit Breaker test kit along with the accessories as per relevant standards and each set shall be supplied with 2 sets of technical / users manual.

BkTPP Breakers details:

400kV Switchyard:

Make : BHEL, Type : 3AT3 and 3AT2

220kV Switchyard:

1. Make : AEG, Type : S1 – 245

2. Make : AREVA, Type : GL314

33kV Switchyard:

1. Make : ABB, Type : EDF SK 1 - 1

2. Make : CGL, Type : 30 – SFGP – 25A

6.6 KV Breakers:

1. Make: BHEL Type: VM12

2. Make: ABB Type: HPA12/1640C

415 V Breakers

1. Make: L&T (ACB)

2. Make: C&S (ACB)

1.1. The analyzer should be required to measure healthiness of LV, MV, HV, EHV (415V, 6.6kV, 33kV, 220kV, 400kV) circuit breakers CGL / BHEL /

ABB/AEG/ Areva /L&T/C&S etc make. The test results should have repeatability, consistency & immunity to electromagnetic interference in live switchyard up to UHV level.

1.2. The analyzer shall have the features of system configuration, rugged data acquisition and signal condition hardware, user friendly, windows based Graphical user interface.

1.3. The analyzer should be adapted for outdoor use and should be possible to run stand alone.

1.4. The instrument should be suitable for measuring the operation timing of main, PIR and Auxiliary contacts (Wet & Dry) as well as Individual coil currents, coil resistance & Control voltage of coil with PIR value (Resistance value of parallel contact) in single operation. The analyzer should record PIR value & CRM value in numerical form. The analyzer should be able to measure & store parameters:

1) Timing of Main Contact of all three phase minimum two breaks per phase, simultaneously. Result should be presented as traditional timing measurement.

2) Value and Timing of PIR (Pre-insertion Resistor Contacts) of 20 Ohm to 10 K Ω with Main Contact measurement.

3) Healthiness checking of auxiliary contact by measurement of auxiliary contacts timings.

4) It is possible to measure Static contact resistance with same kit.

5) The kit should be capable of doing Dynamic contact resistance and static contact resistance measurement from the same current injection unit with up to 200A DC. The separate command of CRM needs to provide to get CRM value in parameter menu. DCRM cum SRM kit shall be maintenance free & battery less and to be supplied with accessories required.

6) Kit should be capable for Motion measurements of all type of breakers installed at BkTPP to reveal even marginal changes in the breaker mechanics and to be supplied with accessories required.

7) Coil current measurement for 3 phases to indicate whether a winding has been short-circuited or not.

8) Breaker Operation C, O, C-O, O-C , O-C-O, C-O-C , CO-CO, O-CO-CO timings.

9) Kit should capable for Vibration analysis. The Kit should have feature for Vibration testing & measurement to understand the mechanical defects in rotating mechanism or in moving contact and to be supplied with accessories required.

10) Healthiness of Close / Trip coils of all three poles should be monitored simultaneously.

11) Minimum pick-up test.

12) The kit should be both side grounded during perform the testing.

13) Test Leads and accessories: One complete set of cables of sufficient length (min 15 meters) with suitable clamps & connectors, compatible with the instruments should be provided for successfully carrying out the test. All the required accessories should be provided for the smooth functioning of Kit.

1.5. It should be supported by Microsoft Windows (latest version) based software for handling measurement data & analysis.

1.6. The hardware & software shall be user friendly, portable and installed in another PC of similar configuration. The supplier has to assure that he will support in any such event where change of PC and software arise. Support services related to hardware and software for both kit and PC/HMI by the supplier should be given to customer end for minimum 20 years.

1.7. The analyzer should have inbuilt display or other facility to observe & validate the measurement taken at site itself, otherwise it will supply with laptop for interfacing.

1.8. Printing of test report should be possible on any printer with its driver loaded in window.

1.9. The system shall have electrical safety featuring complying IEC 61010-1 and EMC as per IEC: 61326-1.

2. Technical Parameters:

2.1. Power Specification

Mains input: 100 – 240 V AC, 50 / 60 Hz

Power consumption: 250 VA (max)

2.2. Measuring Ranges:

1) General

A) Trigger Operations: C, O, C-O, O-C, O-C-O, C-O-C, CO-CO, O-CO-CO

B) Sampling Speed: 1 KHz to 40KHz – Selectable

C) Trigger: Internal through build in software/ hardware

D) Display: Monitor of laptop or in Build at least 5” diagonally LCD display

E) Test Leads: Suitable for circuit breaker (415V, 6.6kV, 33kV, 220kV, 400kV) testing

2) CONTACT TIMING MODULE

A) Configuration: Isolated channel for timing of 6 Main + 6 PIR + 6 Auxiliary Contacts

B) Resolution: 0.05 mSec at 20KC

C) Accuracy: Value \pm 0.01%

D) Isolation: 2kV between two channel & channel to earth

E) Power: DC, Internally derived

3) CONTROL MOUDLE

A) Channels: 3

B) Configuration: 3 Solid state ‘NO’ contacts rated at 25A/ 250V, DC for issuing commands to the breaker. Over current protection inbuilt.

C) Allotted for: 1 each for CLOSE & TRIP1 & TRIP2 commands

D) Switching: Within 40 μ Sec

E) Isolation: 2kV between two channels and between channels & earth

F) Power: internally derived

G) Accuracy: \pm 0.02% reading \pm 1 sample interval

H) Sample rate: 10 kHz (max.)

I) Non Bouncing Switch:

a) Max. Current: 60A AC/DC, pulse<100ms

b) Duration: user configurable 2 ms steps

c) Delay: user configurable 2 ms steps

J) Current Measurement:

a) Range: 0-55A (at least) AC/DC

b) Resolution: 16 bits

c) Accuracy: \pm 0.01 of reading \pm 0.1% of range

K) Voltage Measurement:

a) Range: 0-250 V AC/DC

b) Resolution: 10mV

c) Accuracy: \pm 0.01 of reading \pm 0.1% of range

4) ANALOG INPUT MODULE

4.1.A) Configuration: Two for CLOSE/ TRIP1 or TRIP2 coil currents, signal conditioning inbuilt. Programmable gain selection for maximum amplification.

B) Current Range: 0 to 25 Amps. User selectable

C) Resolution: 8 bit

D) Accuracy: Value $\pm 1\% \pm$ resolution

E) Isolation: 2kV between two channels and between channels & earth

4.2.A) Configuration: One for closing/ tripping speed and mechanism travel, signal conditioning inbuilt, automatic gain/ offset selection for maximum amplification. Excitation source for transducer inbuilt (5V DC)

B) Resolution: 8 bit

C) Accuracy: Value $\pm 1\% \pm$ resolution

D) Isolation: 2kV between two channels and Channels & earth

5) DCRM CHANNEL

A) Configuration: In a single operation DCRM of all three phases should be carried out. Also there is a provision for measuring of individual poles DCRM.

B) Range: 0 to 10000 $\mu\Omega$

C) Current Range: upto 200A DC

D) Resolution: 8 bit

E) Accuracy: Value $\pm 0.01\% \pm$ resolution

2.3. Environment

1) Application field: For use in high voltage generating station and industrial environments

2) Operating Temperature: at least -5 deg C to +55degC

3) Storage & transport: at least -45 deg C to +60degC

4) Humidity: at least 5% – 95% RH, non-condensing

2.4. System Requirement in case of no internal interface & display

Device:

Laptop: Branded laptop (Make: HP/COMPAQ/IBM/ DELL) with parallel and spare USB ports,

CPU: Pentium core i3 3.0 GHz or above

Hard disk: 500 GB Hard disk

RAM: 2GB or above

Operating System: User friendly Windows based operating system.

Windows XP not be allowed

Others: LAN Card, Inbuilt DVD Combo drive. Should be preloaded with license and registered software

Necessary Microsoft S/W: MS Office2010/ 2007 (Professional) version.

Interface: Ethernet, RS232, RJ45.

2.5. Printer : A4 size page, Colour laser Jet, Resolution in DPI: Colour 600X600

2.6. Dimension

The test set dimension should be such that it can be easily transported to any site via four wheeler jeep like vehicles. The kit should also be transported easily in internal yard.

2.7 Weight

The test set weight should be such that it can be easily lifted by 2 persons.

2.8. Shocks & Vibrations

The kit shall be used for testing of LV, MV and HV (415V, 6.6kV, 33kV, 220kV, 400kV) circuit breakers at various locations at BkTPP generating station. The kit will therefore be required extensive transportation by road, making it prone to shocks & vibration and its performance should not be affected in any way. This is very important feature and hence relevant type test satisfying relevant IEC/IS should be conducted in accredited national lab and test certificate should be attached for the same.

2.9 HMI:

Software: User friendly

Language: English (mainly)

Keyboard: Built-in

2.10 Kit Should be Suitable to test

Breaker 415V: L&T, C&S, ABB (ACB)

Breaker 6.6kV: BHEL, ABB (VCB & ACB)

Breaker 33kV: ABB & CGL (SF6); Operating mechanism: spring operated

Breaker 220kV: AEG & AREVA (SF6); Operating mechanism: spring operated

Breaker 400kV: BHEL (SF6); Operating mechanism: Hydraulic

2.11 CE-marking:

EMC: 2004/108/EC

Low voltage Directive (LVD): 2006/95/EC

2.12 Warranty/Guarantee

At least One year

N.B.

- 1. Maintenance Manual, Drawing, Other relevant certificates are to be supplied by the Party along with the package.**
- 2. Training is to be provided by the party.**
- 3. Complete recommended spare parts list with part number, drawing and ordering code for spare procurement must be provided.**
- 4. One Casing should be provided with the kit for safety of the kit.**

ANNEXURE-III

GUARANTEED TECHNICAL PARTICULARS FOR
CIRCUIT BREAKER ANALYZER WITH 3 CHANNEL DCRM
(TO BE FILLED IN BY THE TENDERER AND FURNISH WITH TECHNICAL BID)

The GTP is to be filled up in this format and, in the page of Tender Specification only, to be submitted in duplicate along with the offer. This is intended for speedy comparison of various bidders GTP. The tenderer shall fill in the particulars against appropriate items in respect of each rating and type of equipment offered in the broad categories listed below:

Sl No.	Description	Details of the party's specification
1	Makers' Name	
2	Type and Model of Instruments	
	POWER SPECIFICATION	
	Input	
	MEASURING RANGES	
	General	
	Trigger Operation	
	Sampling Speed	
	Internal Trigger (Yes/ No)	
	Display Size (Diagonally)	
	Test Leads (Size & Nos)	
	Contact Timing Module	
	No. of Channel Configuration	
	Resolution	
	Accuracy	
	Isolation	
	Accuracy	
	Control Module	
	Channel Configuration	
	Allotted For	

	Switching Time	
	Isolation	
	Analog Input Module	
	Measurement of Close/Trip Coil Current	
	Channel Configuration	
	Current Range	
	Resolution	
	Accuracy	
	Isolation	
	Measurement of Mechanism speed, travel	
	Channel Configuration	
	Resolution	
	Accuracy	
	Isolation	
	DCRM Channel	
	Configuration	
	Range	
	Current injection	
	Resolution	
	Accuracy	
	No. of Channel	
	Vibration Analysis possible (Yes/No)	
	If possible details	
	Safety: Provision for testing of CB with dual grounding (Yes/No)	
	All the above mentioned features of three phases to be tested in single operation (Yes/No)	
	Transducer to be Provided (Mentioned type)	
	400kV Switchyard: Make : BHEL, Type : 3AT3 and 3AT2	
	220kV Switchyard: Make : AEG, Type : S1 – 245, Make : AREVA, Type : GL314	
	33kV Switchyard: Make : ABB, Type : EDF SK 1 – 1, Make : CGL, Type : 30 – SFGP – 25A	

	6.6 KV Breakers: Make: BHEL Type: VM12, Make: ABB Type: HPA12/1640C	
	415 V Breakers: Make: L&T (ACB), Make: C&S (ACB)	
	Laptop Configuration (In case no internal interface available)	
	Printer Configuration	
	Kit Warm Up Time to comply parameter as per specification	
	LIST OF ACCESSORIES	
	ENVIRONMENT	
	Temperature	
	RH	
	COMPITABILITY WITH EMI/EMC AS PER RELEVANT IEC. CERTIFICATE TO BE SUBMITTED	
	CE-Marking available (Yes/ No)	
	OTHER	
	Dimension	
	Weight (Including Accessories)	
	GURANTEE/WARRANTY OFFERED	
	ANY OTHER RELATED INFORMATIONS TO FURNISH	