UNIVERSITY OF CALCUTTA
Centre for Research in Nanoscience and Nanotechnology
JD-2, Sector-III, Salt Lake City
Kolkata- 700106

NOTICE INVITING QUOTATION

Sealed Quotations are invited from reputed suppliers or manufacture for the 60 KVA UPS for XRD System in Clean Room Block at CRNN.

1	N.I.Q No	Dir/170/XRD/60 KVA UPS/CRNN(2016) Date: 04.03.16
2	Name of Work	Supply of 60 KVA UPS for XRD System at Clean Room block of Technology Campus (Acharya Prafulla Chandra Roy Siksha Prangan), Salt Lake.
3	Time of completion	Within 1 month from issuing Order.
4	Eligibility Criteria	Appendix – A4
5.	Technical Specification	Annexure D
6	Last date of Application for participating in bid	29/07/2016 (up to 2.00 PM)
7	Last date of Collection of Quotation Papers	02/08/2016 (up to 2.00 PM)
8	Last date of dropping of Quotation	05/08/2016 (up to 2.00 PM)
9	Date of opening of Quotation	-

For details enquiry & further correspondence feel free to contract CRNN office at any working day between 11.00 am to 4.00pm.

N. B. The authority reserves the right to reject any or all tenders/quotation without assigning any reason what so ever.

Director, CRNN

APPENDIX-A4

University of Calcutta has procured X-Ray Diffractometer (Model: SmartLab 9KW, Make Rigaku, Japan) for its Center for Research in Nanoscience and Nanotechnology, Saltlake, JD-2, Sector-3, Kolkata-98. **Quotations are invited from bonafide vendors for an online UPS systems with 60 KVA capacity** to be installed at the same address for the suppling power to the said X-Ray diffractometer. The details of the tender specification are given herewith:

1) Eligibility criteria for participation in the Tender :

A) The Bids shall be submitted by only the OEM (Original Equipment Manufacturer) or authorized sales and service provider of OEM in case OEM is not participating. Declaration from OEM specific to this tender in this regard needs to be submitted.

B) The tenderer must take the responsibility for the delivery, installation and commisioning of the product at the site specified during the order procress and at time specified during the order procress. Delay in installation and /or commissioning will be subject to penalize.

C) Manufacturer should be ISO 9001:2008 Certified, ISO 14001:2004 certified.

D) The vendor, to whom the order shall be placed is required to provide necessary certificate(s) from ERTL/ETDC/CPRI for the particular instrument at the time of delivery.

E) Manufacturer should have factory and R&D in India. Manufacturer is required to provide the full details of factory address in India.

F) The Bidder shall be an established UPS Manufacturing company registered under the Companies Act, 1956 having operations in India for the last three years as on 31.12.2014 (Certificate of Incorporation) and shall have their registered offices in West Bengal and submit valid documentary proof of

· Certificate of incorporation
· Trade License of West Bengal

G) The Bidder should have executed (completed) at least two similar or higher rating orders in or around Kolkata at any Govt. Department / Educational & Research Institutes / PSU / Board / Council or similar. The UPS should have installed alongwith same kind of load which is running successfully atleast for a period of not less than 2 years.

H) Copies of suitable documents like Purchase Orders, etc. for verification of the order values and work completion / customer satisfaction certificates (or similar documents) from customers against the same orders for verifying successful completion of the orders must be submitted as evidences.

I) The Bidder should have delivered and installed at least two similar UPS equipment to support high value sophisticated scientific instruments at reputed research institutions/Universities in India

J) The manufacturer should have WB sales tax registration for more than 5 years with same company name. A copy of the certificate should be enclosed with the offer.

2) Technical specifications :

The details of the technical Specifications for 60 KVA online UPS is given in ANNEXURE-D.

ANNEXURE-D

Technical Specifications for 60 KVA online UPS suitable for XRD system

Description	Specification
CAPACITY	60 KVA
TECHNOLOGY	Should be digitally controlled, IGBT based double conversion On-line **VFI** according to IEC62040-3 specification
	Input & output EMI Filter should be provided
	Built-in Isolation Transformer should be provided on the Inverter output (No external IT will be excepted)
Input	
Rated voltage	400 VAC three-phase + N
Voltage Range	± 20% at full load
Frequency Range	45 to 65 Hz
Power Factor	$\geq$ 0.95
Power Walk-in	Progressive in 10 seconds
By Pass (Static & manual)	
Rated Voltage	400 VAC
Number of Phases	3 + N
Permitted voltage range	± 15% (selectable from ± 10% to ± 25% from front panel)
Rated Frequency	50/60 Hz
Permitted Frequency Range	± 2% (selectable from ± 1% to ± 5% from front panel)
Batteries	
Type	Sealed Maintenance Free Lead Acid type 12V
Make	Exide Power Safe / Amara Raja Quanta
Backup Time	½ Hour
Battery capacity	Should not be less than 46000 VAH
Battery Rating	should be specified by the vendor alongwith the qty offered
Recharge Time	4-6 Hrs.
Temperature Control & Battery Charging	The system should compensate for any variations in temperature while recharging the batteries. The recharge voltage should be temperature depended-the higher the temperature, the lower the recharge voltage should be
Automatic battery test	The UPS should carry out battery tests automatically. The period between and the duration of the test should be configured via the control panel, or the test can be completely deactivated.
Current ripple	In normal operating condition and with the battery charged, the current ripple should be nearly zero.

Output	
Number of Phases	3 + N
Rated Voltage	380 – 400 – 415 V AC Selectable
Power Factor	0.8
Voltage setting	Should be via Control Panel
VTHD	<2% for Linear load & <3% for Non-Linear load
Crest factor (Ipeak/Irms)	3 : 1
Waveform	Sinewave
Voltage stability at steady state	± 1%
Voltage stability at dynamic state	± 5%
Frequency	50/60 Hz selectable
Frequency stability with the Inverter in Synchronisation with the bypass supply	± 2% (configurable via the control panel ±1-5%)
Frequency stability with the Inverter out of Synchronisation with the bypass supply	± 0.05%
Overload	110% for 1 Hr., 125% for 10 mins., 150% for 1 min.
Overall efficiency at full load	Should be $\geq$ 90%
Protection	
Back feed protection	The back feed protection should be installed in series with bypass SCRs. (When the mains power supply fails, and in the event of fault occurring with the SCRs, the back feed protection device prevents any current that could cause an electric shock from back feeding to the incoming power supply connections. Further more, when a mains supply failure occurs, an electromagnetic switch should positioned at the rectifier input opens, for preventing any current back feed on to the electrical system prior to this point.)
Normal Protection	Input, output, rectifier input, battery fuse, bypass fuse, short circuit etc. Thermal on system, rectifier, bypass and inverter. Protection against prolonged battery discharge
Environmental Conditions	
Operating temp. for UPS	0 – 40º C
Relative humidity	<95% non condensing
Noise	<60dBA at 1 m
Mechanical Data	
Protection Degree of the cabinet	IP 20
Cable input	Should be Bottom entry
Display & Software	
Minimum List of information should be appeared on the LCD Display	Input Voltage, Frequency, Power By-pass Voltage, Frequency Output Voltage, Frequency, Power, Peak Power Battery Voltage, Battery Peak Pulse Current Battery discharge current Inverter Input Voltage Internal temperature (system / converter / Bypass/ Inverter/magnetic Components) Inverter Operation Time By-pass operation time

	Battery Operation Time No. of battery interventions No. of complete discharges Date of first activation <u>Commands</u> Battery Test, Display Contrast, By-pass Off, End discharge pre-alarm, System Off <u>Customization</u> Output Voltage, Output Voltage Compensation, Batteries, End discharge pre-alarm , Auto off, By-pass voltage tolerance, By-pass frequency tolerance
Communication & Software	RS232 serial port,
	Advanced, Multi-platform Communication, for all operating systems and network environments; shutdown & monitoring software
Other mandatory points:	
Reliability of the system	The total system (Charger & Inverter section) should be controlled by redundant microprocessor system. If a fault occurred to either of the microprocessors, the power supply to the protected load should not be interrupted
Mimic Display	Mimic diagram should be provided to know the status of the rectifier, inverter, battery and output.
Self Diagnostics	The system should provide "EVENT RECORDING" facility. The system should able to store atleast last 100 events i.e. input voltage variation or out of tolerance, operating conditions of the system at any time, its include cause of the fault and should be able to display the name of the faulty area in terms of rectifier fault, inverter fault, battery contactor fault etc. through code. All events should be readable from front panel LCD/LED of the system and also from PC/Laptop through the RS 232 communication interface port.
Input Phase Reversal	In the event of any phase reversal in the input power source, the system should neither trip nor go to battery discharge mode. It should works on mains but with fault alarm indicating input phase reversal. This should be an inbuilt feature of the system design.
Auto restart facility	The UPS should configured to automatically restart after a mains supply failure or after the batteries have become fully discharged
EPO (Emergency Power Off)	In the event of an emergency the UPS can be completely shutdown by an external command
Standards	Should complies the following safety & EMC Standards : Low Voltage Directive 2006/95/EC: Test Standards CEI EN 62040-1 EMC Directive 2004/108/EC: Test Standards EN62040-2
Important	The Technical Specification along with **Credentials & Eligibility should be certified and verified as per the tender notice.**