شركة مصفاة البترول الاردنية المساهمة المحدودة

عمان – الأردن

مناقصة :- (109 / 2024) رقم طلب المواد (24010390) المواد المطلوبة (UPS SYSTEM)

الموضوع :- دعوة للاشتراك في مناقصة محلية

ترغب شركة مصفاة البترول الاردنية بشراء المواد المبينة تفاصيلها ومواصفاتها الفنية في الكشف المرفق وباعتباركم مورداً لهذه المواد نوجه هذه الدعوة لكم للاشتراك بالمناقصة اعلاه وتقديم عرض سعر للمواد المطلوبة اذا وجدتم ان بإمكانكم تنفيذه مع الالتزام بكافة الشروط والمواصفات وفيما يلي الشروط العامة للمناقصة :-

1. يقدم العرض (نسختين) قبل الموعد المحدد ادناه ضمن ظرف مغلق ومختوم مبينا عليه رقم المناقصة وتاريخ الاغلاق واسم وعنوان المناقص ويسلم باليد الى (دائرة المشتريات الإدارة لعامة – جبل عمان – الدوار الأول) ولا يقبل اي عرض يرسل بالفاكس نهائيا .
2. يجب ان يكون العرض مروساً باسم وعنوان المورد موقعا ومختوما بالخاتم الرسمي للمناقص ومرفقا بصورة الشروط موقعة ومختومة منه لتأكيد التزامه بكافة الشروط والمواصفات وكذلك تقديم نسخة من السجل التجاري ورخصة المهن .
3. على المناقص تثبيت الاسعار الافرادية والاجمالية على عرضه رقما وكتابة بخط واضح دون تصحيح او كشط او محو .
4. على المناقص بيان الامور التالية في عرضه بوضوح :-

- شمول السعر لضريبة المبيعات 16% او اية نسبة تحدد بعرض السعر والرسوم الجمركية .
- في حال وجود اي خدمة اضافية يراد تقديمها في العرض وغير واردة في مواصفات طلب المواد او امر الشراء يجب ان يتم ذكرها بالتفصيل وان يتم بيان كلفتها المالية بشكل واضح .
- مدة صلاحية الاسعار (يجب الا تقل عن (90) يوم من تاريخ تقديم العرض وخلاف ذلك يحق للمصفاة استبعاد العرض) .
- اجور النقل الى مستودعاتنا في الزرقاء يجب ان تكون مشمولة ضمن السعر المعروض .
- ان المواد المعروضة جديدة وغير مستعملة او مجددة وخالية من العيوب مع بيان سنة الصنع .
- ان يحدد منشأ البضاعة والالتزام بتقديم شهادة بلد المنشأ وتحديد اسم الشركة الصانعة، مده التوريد، مكان التسليم علما ان مكان التسليم مستودعاتنا في (الزرقاء).
- تثبيت السعر الافرادي والاجمالي رقما وكتابه بخط واضح دون شطب او تعديل.

5. على المناقص تقديم شهادة منشأ عند توريد المواد (مصدقة اصولا او تشير للبيان الجمركي)

6. الشركة غير ملزمة بالإحالة على اقل الاسعار ويحق لها رفض اي عرض دون ابداء الاسباب.

7. يحق للشركة الغاء المناقصة او اعادة طرحها او شراء جزء منها او التعديل على الكميات المطلوبة دون بيان الاسباب ودون ان تتحمل اي مسؤولية أيا كان نوعها.

8. على المناقص عدم مراجعة اي جهة فنية في الشركة الا بالتنسيق مع دائرة المشتريات.

9. المواد المطلوبة خاضعة للزيادة والنقصان بنسبة ± 25%.

10. يلتزم المناقص بقبول الإحالة الجزئية.

11. يلتزم المناقص بتقديم عينات حسب القياس المطلوب وشهادات الفحص المبينة في الشروط المرفقة او كتالوجات لأي من البنود المطلوبة مع العرض.

12. يلتزم المناقص بدفع قيمة طوابع الواردات والبالغة (6) بالاف على قرار الاحالة خلال عشرة ايام من تبليغه بالقرار.

13. على المناقص تقديم كفالة حسن تنفيذ غير مشروطة بنسبة 10% من القيمة الاجمالية (بعد الاحالة) لحين استلام المواد والموافقة عليها.

14. يتم دفع ثمن المواد المشتراه بعد استلام المواد في مستودعات الشركة وبعد صدور سند استلام يؤكد استلامها كاملة ومطابقة للشروط والمواصفات.

15. في حال تأخير توريد / تنفيذ المناقصة حسب ما تم الاتفاق عليه يترتب عليكم غرامة قدرها (20) دينار اردني عن كل يوم تأخير .

16. في حال اخلال المتعهد المحال عليه المناقصة باي من التزامات, يحق للشركة الغاء الاحالة واللجوء الى طرف ثالث دون الحاجة لأي اخطار او انذار عادي او عدلي ودون الحاجة لمراجعة القضاء وتحميل المتعهد كافة التكاليف المترتبة على ذلك

17. تعتبر هذه الشروط جزءاً لا يتجزأ من المناقصة وعلى المورد الالتزام بما جاء فيها.

18. اخر موعد لقبول واستلام العروض الساعة الثانية عشره والنصف من ظهر يوم الخميس الموافق 2024/03/28 وتسلم لدائرة المشتريات – الادارة العامة – جبل عمان – الدوار الأول –الطابق الأول – مكتب 10

19. في حال وجود أي استفسار يتم أرساله بالبريد الإلكتروني على العنوان (Purchasing@jopetrol.com.jo) .

20. يجب ان تكون الفاتورة المقدمة من قبلكم في حال شراء السلع او تقديم خدمة وفقا" لنظام تنظيم شؤون الفوترة والرقابة عليها رقم (34) لسنة 2019 وسيتم رفض أي فاتورة لا تكون وفقا" للنظام أعلاه .

21. الإلتزام بأمر الدفاع 11 أثناء مراجعة دوائر شركة مصفاة البترول.

كما يشترط تقديم البيانات التالية على الفواتير الصادرة من قبلكم :-

الاسم الكامل للشخص أو الشركة أو المفوض بالتوقيع وختم الشركة الرسمي او المفوض بالتوقيع وتوقيعه.

الرقم الوطني الكامل للشخص أو الشركة أو المفوض بالتوقيع .

العنوان الكامل بالإضافة إلى رقم الهاتف والصندوق البريدي والرمز البريدي .

الرقم الضريبي للشخص أو الشركة إن وجد .

R5545500QS

Jordan Petroleum Refinery Company

Quote Order

Date 04/03/2024
Page - 1

Order Number 24010114 OQ 00001

Delivery Instructions

Branch/Plant F510614
Order Date 04/03/2024
Request Date 04/03/2024
Freight Handling

Line No	VOCAB Number	Description	Part Number	Drawing Number	Ordered Quantity	Unit	Supplier Offer Unit Price	Supplier Offer Currency Code	Original Order No	Type	Orig Line No
1		DESIGN, SUPPLY, TESTING			1.000	EA			24010390	OR	1

Commissioning and Start Up of Complete Two Parallel
True Online Double Conversion Industrial UPSs Systems
for JPRC Power Station at Zarqa according to attached terms of Reference

Purchasing Manager : .....

Remarks of Purchasing Department :

.....

.....

TENDER NO. : 2024/109

SUPPLIER INFORMATION معلومات المورد

1	Company Name اسم الشركة	
2	Manager Name مدير العطاءات	
3	Company Address عنوان الشركة	
4	Specialty اختصاص الشركة	
5	Tel. Numbers أرقام الشركة	
6	Fax. Numbers أرقام الفاكسات	
7	E-Mails البريد الإلكتروني	
8	Website الموقع الإلكتروني	
9	Paid Capital راس المال المدفوع	
10	Annual Income (Turnover) الإيرادات السنوية للمورد	
11	Percentage of Increasing Prices Periodically نسبة رفع المورد للأسعار دوريا	
12	Cost Breakdown Analysis تحليل الكلفة	
13	Terms Of Payment طريقة الدفع التي يقبلها المورد	
14	Company Certificates الشهادات الحاصل عليها المورد	
15	Branches in the Middle East فروع الشركة في الشرق الأوسط	
16	Company References الشركات التي يتعامل معها المورد	

Design, Supply, Testing, Commissioning and Start Up of Complete Two Parallel True Online Double Conversion Industrial UPSs Systems for JPRC Power Station at Zarqa.

PART-I - General Requirements:

Item No.	Specification / Requirements	Deviation
1.	**Purpose:**	
	Design, Supply, Testing, Commissioning and startup of Complete Two parallel True Online Double Conversion UPSs20KVA/Each for power station of Jordan petroleum refinery Co. Ltd, here in after referred to as the "Company" or JPRC. Three phase input ($400V_{AC}$, 50Hz), single phase output ($V=110V_{DC}$ and $V=110V_{AC}$, 50Hz).	
2.	**Deviation From Specifications:**	
	1. This publication is part of and complements the inquiry or order to which it is attached and referred.	
	2. Manufacturers tendering or supplying against this publication shall adhere wherever possible to the Company's requirements.	
	3. Wherever a manufacturer's standard departs from the Company's requirements; the manufacturer shall clearly indicate in his offer where these differences occur; otherwise, the offer shall be considered as complying with the Company requirements. Deviations after awarding shall not be accepted.	
	4. The Company is not bound to consider any offer, which does not follow closely the requirements of this publication.	
	5. Manufacturer shall refer to each clause of this document and fill the column titled (DEVIATION) by (NONE) if the specification of the offer complies with the requirements. Deviations from our requirements, if any, shall be clearly explained and specified in the above-mentioned column, additional sheets could be used.	
3.	**Contractual Violations:**	
	1. Any of the following discrepancies after awarding shall be considered as a cause of rejection and consequently the performance bank guarantee and the remaining payments shall be confiscated:	
	a. Any change of the source of equipment (manufacturer and the origin).	
	b. Any defect in equipment and noncompliance of supplied equipment with test certificates during the visual inspection by the Company representative (s) prior shipment.	
	c. Changing of the manufacturer of requested equipment or offered model (s) before or after awarding.	
	2. Not submitting the required documents in the offer shall be considered as a cause for rejecting the offer.	
4.	**Instructions to Suppliers:**	
	1. After award any change in offered specifications shall not be acceptable.	
	2. All information, documents and correspondence shall be in English language.	
	3. It is the full responsibility of the supplier to provide all required information during the offering stage. Any lack or misguidance of the required information provided by the supplier shall be considered a reason for refusing the offer and disqualifying the supplier.	
	4. Suppliers are required to recommend their current best technology, materials, testing and inspection requirements that suit service. Offers shall include full details and specifications for the offered equipment.	

Item No.	Specification / Requirements		Deviation
	5.	The Contractor shall have a past experience of a minimum seven projects of similar equipment and materials within the last 10 years. Contractor shall provide Clear data and full details about qualifications of his staff, Quality Plan, Test & Inspection based on the applicable codes shall be provided.	
	6.	The manufacturer shall possess authorization / accreditation certificate issued by an authority / agency / association (authorized firm) that authorizes the manufacturer to manufacture UPS systems according to international codes and regulations. A copy of these certificates shall be submitted to the company during the offering stage.	
	7.	The attached "Qualification form" shall be completely filled by the Tenderer and submitted with the offer.	
	8.	The offered UPS shall be had good history in oil and gas field, and the manufacture shall submit his references in this field.	
	9.	Any items or accessories necessary to have the offered UPS (as complete sets) complete in every respect should be quoted even if they are not mentioned in this specification, failure of the Tenderer to do so shall be his full responsibility, and equipment shall be rectified as necessary at his own expense. The quotations shall be as detailed as possible and they shall separately include for the supply of equipment, accessories, spare parts, documents nameplates, testing, and sea freight to Aqaba Port, the Guarantee and Warranty.	
	10.	All instructions and general conditions in the tender documents shall be met.	
5.	**Guarantee and Warranty**		
	1.	The supplier shall guarantee that the UPSs are furnished and all supplied accessories and materials are brand new and updated design and materials, free from fault in design, workmanship and materials, and are of proper material to fulfill satisfactorily the operating conditions specified herein. Should any defect in design, materials, workmanship or operating characteristics develop during the first year of operation, the supplier shall make all necessary or desirable alterations, repairs and replacements of defective materials, free of charge, and shall pay for any transportation involved in this regard. If the failure or defect cannot be corrected, the supplier shall replace promptly, free of charge, said materials/equipment or remove the materials, equipment and refund the full purchase price.	
	2.	The Contract winner shall submit an unconditional irrevocable bank guarantee in the sum of 10 % of the total Contract price (**as a Performance Guarantee**), within 10 days of acceptance by the Company of his offer / proposal as per attached form. This Guarantee shall be valid for 12 months from successful commissioning or 18 months from delivery to Zarka Refinery site, whichever comes later.	
	3.	The warranty period shall be (36) months from date of delivery.	

PART- II Technical Requirements:

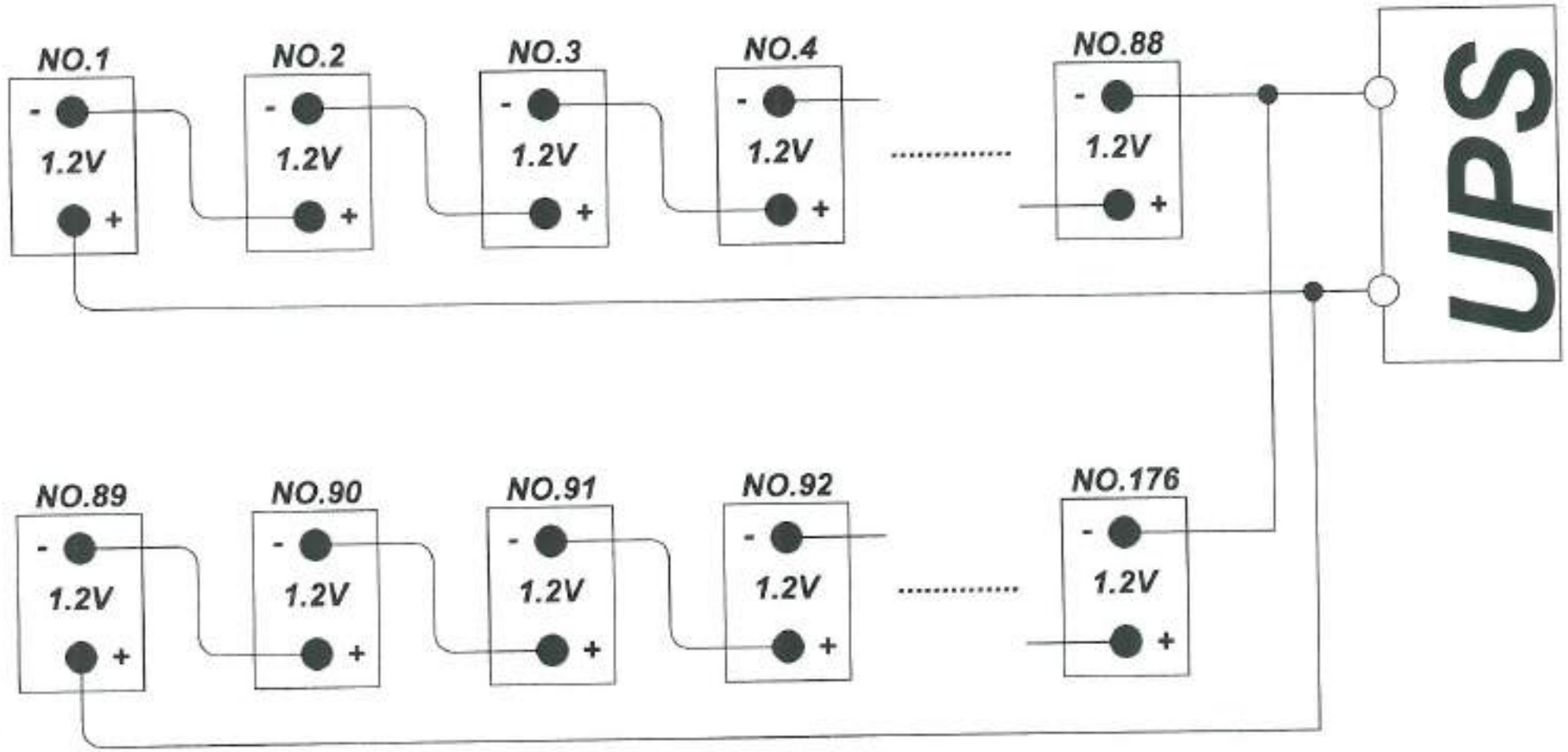
Item No.	Specification / Requirements				Deviation
1.	**Introduction:**				
	1.1	**Local Conditions:**			
		1.	The atmosphere is tropical.		
		2.	Maximum shade temperature	40 ℃	
		3.	Maximum ambient temperature in Summer	45 ℃	
		4.	Minimum ambient temperature in Winter	-5 ℃	
		5.	Average relative humidity: (50% at 35 ℃ in summer, 75% at 15 ℃ in winter, 96% (maximum value)).		
		6.	Elevation above sea level	545 m	
	1.2	**Standards:**			
		All equipment and devices shall comply with latest applicable standards recognized internationally, such as: -			
		1.	IEC (62040, 60240-1, 60240-2) standards		
		2.	EN 50091 UPS safety.		
		3.	IEC 60146 Power Electronic Converters and Semiconductors.		
		4.	Quality/Environmental (ISO 9001:2000)		
2.	**Equipment Specifications:**				
	2.1	**General Requirements:**			
		1.	The system shall be of industrial type and prepared for operation.		
		2.	The system shall include 2-position manual bypass switch to isolate the system serviceable parts for maintenance when required.		
		3.	Measuring devices for all electric component (voltage, current, harmonic, …etc.) shall be provided both analogue and digital in the displaying unit, AC and DC		
		4.	Power analyzer meter shall be provide to measure the load parameters (V,I,P,Q,PF,H, …etc),complete with RS485.		
		5.	The power supply panel shall be provided with UPSs to feed the two UPSs it shall have breakers for main and bypass supply.		
		6.	Galvanic Isolation between input and output shall be provided.		
		7.	Dimensional drawing for each panel shall be provided.		
		8.	The system shall be ventilated sufficiently by means of extraction fans or other suitable method to be specified in the offer.		
		9.	SNMP (Simple Network Management Protocol) card with management software (network supported monitoring), and any accessories (cable, modem, ..etc) shall be provided and included in scope of supply.		
		10.	The UPS shall be furnished with all requirements to have the ability to send SMS for maintenance team (warning alarms, failure alarms)		
	2.2	**System Principle of Operation:**			
		1.	The UPS operating principle shall include but not limited the following modes of operation:		
			a.	**Normal Mode:** AC power flows to UPS—one input into the rectifier and battery charger and one into aux. transformer and internal bypass, where outputs from UPS are into a single phase outputs to supply loads AC and DC.	
			b.	**Emergency Mode:** Upon failure or degradation of the utility AC power, the critical AC and DC loads shall be supplied from aux. input if failure happened for aux. input the loads shall be supplied and draw its power from the batteries.	
			c.	**Recharge Mode:** Upon restoration of utility AC power, even if the batteries are completely discharged, the UPS will restart.	

Item No.	Specification / Requirements				Deviation
			d.	**Bypass Mode:** When there is a need for isolating serviceable system components, i.e., rectifier, inverter, and static switch, so that the critical AC loads supplied directly from AC mains through transformer, and DC loads from the batteries. also before moving from Normal operation to emergency operation, it moves initially to bypass which is supplied from other feeder.	
	2.3	**System Components:**			
		The new UPS systems shall be furnished (but not limited) to the following main components:			
		1.	**Topology:**		
			a.	Three phase inputs (400 V±10%, 50±2% Hz) single phase output (V= $110V_{DC}$, V_{L-N}=$110V_{AC}$, 50 Hz) double conversion online UPS.	
			b.	20 KVA/16KW, 0.8 power factor.(Minimum)	
			c.	Microprocessor controlled system.	
			d.	2Wire input 400V for auxiliary transformer (V_{L-L}=400 V±10%, 50±2% Hz) single phase output (V_{L-N}=$110V_{AC}$, 50 Hz)	
		2.	**Input Specifications:**		
			a.	Three Phase (400V ± 10%), 50 Hz.	
			b.	Input current Distortion (Total Harmonic Distortion THD) < 5%.	
			c.	Harmonic Distortion doesn't exceed 8 % at V-Input (at 100% load).	
		3.	**Output Specification:**		
			a.	Single Phase output: (V_{DC}= 110V, V_{AC} =$110V_{L-N}$, 50Hz).	
			b.	Rated output power 40KVA @ 0.8 PF lagging.	
			c.	Provided with advanced module card for network monitoring and protection.	
			d.	Communication Interface provided with RS 232, RS 485 ports.	
			e.	DC load not exceed 60A	
		4.	**Rectifier for Inverter Supply:**		
			a.	Full bridge phase angle controlled Thyristor module rectifier (IGBT also possible)	
			b.	Microprocessor controlled system.	
			c.	Input Voltage 3Phase (3wire), ($400V_{AC}$ ± 10%), 50Hz.	
			d.	The rectifier output shall be provided with sufficient filtering to prevent damage to battery.	
		5.	**Inverter**		
			a.	Full bridge high frequency IGBT inverter module.	
			b.	Pure sinusoidal waveform.	
			c.	Efficiency not less than 80%.	
			d.	Harmonic Distortion Less than 5%.	
			e.	Protection:	
				1. Short circuit protection.	2. Over voltages protection.
				3. Under voltage protection.	4. Over current protection.
				5. Over temperature protection.	
			f.	Front panel Indicator:	
				1. Inverter DC input low.	2. Inverter DC input high.
				3. Bypass out of limit.	4. Bypass MCB off.
				5. Output MCB off.	6. Inverter overload.
				7. Internal over temperature.	8. IGBT fuse failure.
				9. Inverter output high.	10. Inverter output low.
				11. Inverter over temperature.	12. Maintenance switch ON.
				13. Inverter failure.	14. Mains ON
				15. Load on bypass.	16. Load on inverter.
				17. Load on battery.	18. Auto ON.

Item No.	Specification / Requirements							Deviation
		6.	**Static By-Pass Switch**					
			a.	Uninterruptible static switch with back feed protection.				
			b.	The system shall include bypass switch type of bypass shall be manual and automatic.				
			c.	The transfer process shall be done without any loss in power supply, less than 5m sec.				
		7.	**Battery Charger**					
			a.	Input voltage 3Phase *400V_{AC} line to line (± 10%).				
			b.	Blocking Diode between charger and batteries shall be provided for safety rules.				
			c.	The charger output shall be provided with sufficient filtering to prevent damage to battery.				
			d.	The charger shall have the ability for boosting and floating charging modes.				
		8.	**Control and Monitoring Signals**					
			a.	An LCD displaying and motioning microprocessor based unit shall be included in the system placed in the front side panel.				
			b.	The LCD unit shall be subdivided (and not limited) to the following functional units:				
				1.	Display unit.	2.	Operation.	
				3.	Operating status indications.	4.	Alarm Indications.	
			c.	The control shall have two level passwords (users and administrator)				
		9.	**Alarms**					
			a.	List of alarms shall be specified in the offer and shall be provided in the system and displayed at LCD for major alarming issues.				
			b.	An alarm log contains last 250 arisen events shall be included.				
			c.	Alarm indication concept shall enable a more precise fault diagnosis through the distinction between first alarm, further alarm, permanent fault and transient faults.				
		10.	**Auxiliary Input Transformer**					
			a.	Auxiliary transformer input 2 wire 400 V_{L-L}, and the output single phase 110V_{AC}, 50Hz				
			b.	The transformer shall be suitable to feed full load without interruption.				
			c.	Transformer shall be supplied complete with UPS system				
3.	**Existing Batteries Specification:**							
	3.1	The system will be connected to our existing batteries with the following specifications:						
		a.	Nickel cadmium battery, (ALCAD MC185P) are exist.					
		b.	Number of existing batteries cell are: 176 batteries					
	3.2	Battery connections diagram is attached.						
	3.3	Battery datasheet is attached.						
	3.4	If the existing batteries are not suitable for the offered UPSs, the contractor shall specify his suggestion and recommendations, and provide offer for batteries.						
	3.5	The system shall provide supply for the loads1 hour after the supply power failure at full load without any interruption.						
4.	**Mechanical Specification & Dimensions:**							
	4.1	Cable entry to panels shall be from bottom.						
	4.2	Noise level shall not exceed 55 dBA at (1) m away from system as per (ISO7779).						
	4.3	It is the manufacturer's responsibility to select the proper cooling method for the system and specify it with details in the offer.						
	4.4	All System panels shall be weatherproof protected; the degree of protection shall be not less than IP31 (as per IEC 60529).						

Item No.	Specification / Requirements		Deviation
5.	**Spare Parts:**		
	5.1	It is the Contractor's responsibility to supply recommended spare parts, in addition to itemized priced list of spare parts for the following: 1. First guaranteed year. 2. Next five years operation.	
	5.2	The spare parts shall be clearly labeled to distinguish them from the main equipment.	
	5.3	The spare parts shall be delivered at the same time with the main equipment, and shall include static switch, Thyristor, IGBTs, capacitors, PCB boards, breakers, fuses, cooling fans ….etc	
	5.4	The manufacturer shall guarantee and shall secure to the Company the guarantees of the manufacturers for the supply of spare parts upon request during 20 years after delivery.	
	5.5	In case that any spare parts are needed during the first guaranteed year and not included in the offered spare parts, the Contractor shall provide these spare parts for the first guaranteed year at his own expense, within shortest time (by air freight). Transporting expense up to Q.A.I. Airport shall be borne by the Contractor.	
	5.6	After sales technical support is required and to be clarified and confirmed in the offer.	
6.	**Inspection and Testing:**		
	6.1	The Contractor shall carry out all necessary tests in the shop on each equipment and material. Offers shall include clearly the standard tests which the Contractor shall carry out in the shop.	
	6.2	Acceptance of shop tests shall not constitute a waiver of requirements to meet field tests under specified operating conditions, nor does inspection relieve the Contractor from his responsibilities in any way whatsoever.	
	6.3	Test certificates and reports are required for each equipment.	
	6.4	Any piece of equipment, that shall prove inadequate operation or malfunction, or does not meet the test requirements, shall be rejected. The Contractor shall be fully responsible to replace any rejected equipment with proper one that shall meet the Contract requirements at his own expense.	
	6.5	Test certificates shall be submitted for the Company review / acceptance prior to shipping of equipment. Materials and equipment which shall be covered by the required test certificates shall be specified in the offer.	
	6.6	Any item not meeting the applicable codes referred to in the Contract shall be replaced by the Contractor at his own expense.	
	6.7	The UPS shall be tested by the manufacturer to the requirements of the specified international standards. All UPS tests shall be carried out at manufacturer site in attendance of JPRC/Representative(s), Only all expenses of the representative visit shall be borne by JPRC (i.e sir tickets, hotel accommodation and expenses), other costs related to the tests shall be borne by the manufacturer. The witnessed tests shall be indicated on the test sheets or accompanying documents and the manufacturers have to inform JPRC/ Representative four weeks in advance of the test dates.	
	6.8	The following tests are required according to IEC62040-3, if another standard selected then an equivalent to these tests shall be provided:	
		1. Visual Inspection/ Interconnection check (inverter and rectifier).	
		2. High Voltage test, Insulation Test, and earth continuity test (Inverter and rectifier).	
		3. Checking of auxiliary devices (inverter and rectifier).	
		4. Checking of protective devices (Inverter and Rectifier).	
		5. Functional Test (Inverter and Rectifier).	
		6. Rated output/Current test/Full load test (Inverter and Rectifier).	

Item No.	Specification / Requirements			Deviation
		7.	Over current/Over load capability test/ checking of protective devices (Inverter and Rectifier).	
		8.	Temperature rise test (Inverter and Rectifier).	
		9.	Power loss determination and efficiency test (Inverter and Rectifier)	
		10.	Measurement of THD/THF for voltage and current (Inverter).	
		11.	Power factor measurements (Inverter and Rectifier).	
		12.	Measurement of output voltage (Inverter) .	
		13.	Confirmation of output voltage adjustable range (Inverter) .	
		14.	Checking automatic control/Checking the properties of the control equipment (Inverter and Rectifier).	
		15.	Measurement of ripple voltage and current (Rectifier).	
		16.	Control and monitoring signals.	
		17.	UPS output load steps (linear load).	
		18.	UPS transfer test.	
		19.	UPS manual bypass transfer test.	
		20.	UPS AC input failure test.	
		21.	UPS AC input return test.	
		22.	Short circuit test (Inverter).	
		23.	Stabilizer test.	
7.	**Preparation For Shipment:**			
	7.1		Packing and preparation of equipment and materials for shipment and storage is the full responsibility of the Contractor. The purchased equipment and materials shall be properly prepared for shipment and storage, recommendations of the manufacturer in this regard shall be followed strictly.	
	7.2		All unpainted surfaces of equipment shall be protected from corrosion and rust, which may form during the shipment and storage.	
	7.3		All loose fittings and spare parts shall be coated with protective compound, wrapped in thick moisture proof paper, separately packed in suitable crates and not mounted on machines.	
8.	**Commissioning, Startup and Training:**			
	8.1		The Contractor shall provide typical designs for equipment installation.	
	8.2		Commissioning and startup shall be carried out by the manufacturer according to complete detailed procedure to be submitted by the Contractor for the Company for review ahead of time.	
	8.3		Complete UPS system shall pass successful commissioning and continuous test run for not less than three months without any failure.	
	8.4		The engineers and technicians of the Company will do the installation but commissioning shall be under the supervision and responsibility of the manufacturer and Contractor.	
	8.5		The manufacturer shall verify all alarm items in presence for the company's engineers.	
	8.6		Commissioning and test run shall be included with the total lump sum price of the contract.	
	8.7		Complete training program shall be held for maintenance staff in the JPRC location at Zarqa for three days minimum, the trainer shall be from manufacturer side.	
	8.8		Training program shall include theoretical and practical training, training subjects shall be clearly mentioned in the offer stage.	
9.	**Attachments**			
	1.		Battery connections diagram.	
	2.		Battery datasheet.	



Attachment (1)

MC / MB Range

Capacities and dimensions - International System of units

Cell Type	Capacity	Height		Width		[illegible]		[illegible]		[illegible]	[illegible]		[illegible]	[illegible]
MC 9P	9	270	10,6	121	4,8	46	1,8	1,6	3,5	145	0,24	0,77	13,33	M6
MC 14P	14	270	10,6	121	4,8	46	1,8	1,7	3,7	145	0,23	0,72	8,89	M6
MC 22P	22	270	10,6	121	4,8	46	1,8	1,9	4,2	145	0,2	0,62	2,82	M6
MC 31P	31	270	10,6	121	4,8	46	1,8	2,1	4,6	145	0,18	0,55	2,00	M6
MC 39P	39	270	10,6	121	4,8	70	2,8	3,1	6,8	242	0,34	1,02	1,59	M6
MC 47P	47	270	10,6	121	4,8	70	2,8	3,3	7,3	242	0,32	0,95	1,42	M6
MC 50P	50	270	10,6	121	4,8	70	2,8	3,5	7,7	242	0,29	0,9	1,24	M6
MC 55P	55	270	10,6	121	4,8	70	2,8	3,5	7,7	242	0,29	0,84	1,13	M6
MC 60P	60	350	13,8	196	7,7	72	2,8	6,3	13,9	577	0,86	2,6	1,30	M8
MC 70P	70	350	13,8	196	7,7	72	2,8	6,3	13,9	577	0,85	2,04	1,11	M8
MC 80P	80	350	13,8	196	7,7	72	2,8	6,9	15,2	577	0,8	2,5	0,96	M8
MC 90P	90	350	13,8	196	7,7	72	2,8	6,6	14,6	577	0,8	2,14	0,87	M8
MC 100P	100	350	13,8	196	7,7	72	2,8	7,3	16,1	577	0,75	2,3	0,78	M10
MC 110P	110	350	13,8	196	7,7	72	2,8	7,2	15,9	577	0,75	2,01	0,71	M10
MC 115P	115	350	13,8	196	7,7	72	2,8	8,1	17,7	577	0,7	2,1	0,66	M10
MC 130P	130	350	13,8	196	7,7	72	2,8	7,7	17	577	0,7	1,79	0,60	M10
MC 140P	140	350	13,8	196	7,7	97	3,8	8,7	19,2	809	1,08	3,2	0,56	M10
MC 145P	145	350	13,8	196	7,7	97	3,8	9,9	21,8	809	1,08	2,9	0,54	M10
MC 150P	150	350	13,8	196	7,7	97	3,8	10	22	809	1,08	3,2	0,52	M10
MC 165P	165	350	13,8	196	7,7	97	3,8	10,3	22,7	809	1,02	2,87	0,47	M10
MC 170P	170	350	13,8	196	7,7	97	3,8	10,6	23,4	809	1,02	3,1	0,46	M10
MC 185P	185	350	13,8	196	7,7	97	3,8	10,7	24,6	809	0,97	2,45	0,42	M10
MC 190P	190	411	16,2	196	7,7	97	3,8	11,7	25,8	809	1,36	3,8	0,45	M10
MC 200P	200	411	16,2	196	7,7	97	3,8	12,4	27,3	809	1,2	3,8	0,43	M10
MC 215P	215	411	16,2	196	7,7	97	3,8	12,3	27,1	809	1,2	3,72	0,40	M10
MC 230P	230	411	16,2	196	7,7	97	3,8	12,8	28,4	809	1,13	3,4	0,39	M10
MC 240P	240	411	16,2	196	7,7	97	3,8	12,9	28,4	809	1,13	3,36	0,36	M10
MC 250P	250	411	16,2	196	7,7	126	5	16,4	36,2	1079	1,62	4,8	0,34	2xM10
MC 260P	260	411	16,2	196	7,7	126	5	16,4	36,2	1079	1,62	4,6	0,33	2xM10
MC 277P	277	411	16,2	196	7,7	126	5	16,5	36,4	1079	1,62	4,6	0,31	2xM10
MC 285P	285	411	16,2	196	7,7	126	5	16,2	35,7	1079	1,62	5,08	0,30	2xM10
MC 300P	300	411	16,2	196	7,7	126	5	17	37,5	1079	1,56	4,7	0,29	2xM10
MC 310P	310	411	16,2	196	7,7	126	5	16,7	36,8	1079	1,55	4,79	0,28	2xM10
MC 323P	323	411	16,2	196	7,7	126	5	17,5	36,6	1079	1,46	4,5	0,27	2xM10
MC 335P	335	411	16,2	196	7,7	126	5	17,9	39,1	1079	1,49	4,4	0,26	2xM10
MB 350P	350	411	16,2	195	7,7	146	5,7	19,5	43	1133	1,62	4,8	0,25	2xM10
MB 360P	360	350	13,8	195	7,7	183	7,2	20	44,1	1458	1,73	5	0,22	2xM10
MB 370P	370	411	16,2	195	7,7	159	6,3	20,5	45,2	1247	1,81	4,8	0,23	2xM10
MB 382P	382	411	16,2	195	7,7	159	6,3	20,5	45,2	1247	1,72	5,3	0,23	2xM10
MB 390P	390	411	16,2	195	7,7	171	6,7	22,1	48,7	1353	1,99	5,3	0,22	2xM10
MB 404P	404	411	16,2	195	7,7	171	6,7	22,3	49,2	1353	1,92	5,9	0,21	2xM10
MB 415P	415	411	16,2	195	7,7	183	7,2	23,7	52,2	1458	2,16	5,8	0,21	2xM10
MB 430P	430	350	13,8	195	7,7	237	9,1	25,5	56,2	1871	2,31	6,4	0,18	3xM10
MB 440P	440	411	16,2	195	7,7	183	7,2	23,5	51,8	1458	2,09	5,8	0,20	2xM10
MB 450P	450	411	16,2	195	7,7	183	7,2	24,3	53,6	1458	1,98	6,1	0,19	2xM10
MB 460P	460	411	16,2	195	7,7	183	7,2	24	52,9	1458	2,03	5,7	0,19	2xM10
MB 480P	480	411	16,2	195	7,7	183	7,2	24,7	54,5	1458	2,09	5,4	0,18	2xM10
MB 505P	505	411	16,2	195	7,7	213	8,4	27,5	60,6	1706	2,47	6,5	0,17	3xM10
MB 525P	525	411	16,2	195	7,7	213	8,4	27,6	60,8	1706	2,47	7,3	0,16	3xM10
MB 540P	540	350	13,8	195	7,7	268	10,6	31,5	69,4	2187	2,98	7,4	0,14	3xM10
MB 555P	555	411	16,2	195	7,7	232	9,1	30	66,1	1871	2,72	7,3	0,15	3xM10
MB 575P	575	411	16,2	195	7,7	232	9,1	30,3	66,8	1871	2,72	8	0,15	3xM10
MB 575P	575	411	16,2	196	7,7	305	12	34	75	2495	2,72	6,6	0,14	4xM10
MB 600P	600	411	16,2	195	7,7	244	9,6	32,1	70,8	1977	2,88	6,5	0,14	3xM10
MB 625P	625	411	16,2	195	7,7	268	10,6	35,5	78,3	2187	3,24	6,7	0,14	3xM10
MB 645P	645	411	16,2	195	7,7	268	10,6	35,4	78	2187	3,24	9,5	0,13	3xM10
MB 670P	670	411	16,2	195	7,7	268	10,6	35,9	79,1	2187	3,18	8,8	0,13	3xM10
MB 690P	690	411	16,2	195	7,7	268	10,6	37	81,6	2187	3,04	8,6	0,12	3xM10
MB 703P	703	411	16,2	195	7,7	268	10,6	36,5	80,5	2187	2,98	9,1	0,12	3xM10
MB 720P	720	411	16,2	195	7,7	268	10,6	37	81,6	2187	3,04	8,9	0,12	3xM10
MB 720P	720	411	16,2	195	7,7	353	13,9	40,5	89,3	2917	3,04	10	0,11	4xM10
MB 740P	740	411	16,2	195	7,7	305	12	40	88,2	2495	3,63	9,6	0,12	4xM10
MB 765P	765	411	16,2	195	7,7	305	12	40,2	88,6	2495	3,64	10,6	0,11	4xM10
MB 790P	790	411	16,2	195	7,7	317	12,5	42	92,6	2600	3,8	11,2	0,11	4xM10
MB 808P	808	411	16,2	195	7,7	329	13	44,5	98,1	2706	3,8	11,3	0,11	4xM10
MB 830P	830	411	16,2	195	7,7	353	13,9	47	103,6	2917	4,32	11,7	0,10	4xM10
MB 845P	845	411	16,2	195	7,7	341	13,4	46	101,4	2811	4,63	12,4	0,10	4xM10
MB 865P	865	411	16,2	195	7,7	353	13,9	47,6	104,9	2917	4,32	12,7	0,10	4xM10
MB 890P	890	411	16,2	195	7,7	353	13,9	47,6	104,9	2917	4,26	12,5	0,10	4xM10
MB 900P	900	411	16,2	195	7,7	438	17,2	50,5	111,3	3646	4,08	12,5	0,09	5xM10
MB 920P	920	411	16,2	195	7,7	353	13,9	49,5	109,1	2917	4,06	11,8	0,09	4xM10
MB 940P	940	411	16,2	195	7,7	353	13,9	48,7	107,4	2917	4,12	12	0,09	4xM10
MB 965P	965	411	16,2	195	7,7	373	14,7	50,5	111,3	3057	4,28	11,4	0,09	4xM10
MB 1000P	1000	411	16,2	195	7,7	402	15,8	53,7	118,4	3330	4,88	14,2	0,09	5xM10
MB 1040P	1040	411	16,2	195	7,7	438	17,2	57,5	126,8	3646	5,4	14,8	0,08	5xM10
MB 1080P	1080	411	16,2	195	7,7	438	17,2	58,8	129,6	3646	5,4	16,7	0,08	5xM10
MB 1100P	1100	411	16,2	195	7,7	438	17,2	59,3	130,7	3646	5,34	15,6	0,08	5xM10
MB 1150P	1150	411	16,2	195	7,7	438	17,2	60	132,3	3646	5,07	15,7	0,07	5xM10
MB 1180P	1180	411	16,2	195	7,7	438	17,2	60,9	134,3	3646	5,14	15	0,07	5xM10
MB 1220P	1220	411	16,2	195	7,7	511	20,1	67,5	148,8	4270	6,31	16,9	0,07	6xM10
MB 1250P	1250	411	16,2	195	7,7	499	19,6	68,5	151	4164	5,85	18	0,07	6xM10
MB 1270P	1270	411	16,2	195	7,7	511	20,1	69	152,1	4270	6,31	18,5	0,07	6xM10
MB 1320P	1320	411	16,2	195	7,7	523	20,6	71	156,5	4375	6,42	18,8	0,07	6xM10
MB 1390P	1390	411	16,2	195	7,7	523	20,6	72	158,7	4375	6,05	17,4	0,06	6xM10
MB 1440P	1440	411	16,2	195	7,7	523	20,6	73,7	162,5	4375	6,09	17,7	0,06	6xM10
MB 1465P	1465	411	16,2	195	7,7	523	20,6	73,7	162,5	4375	6,09	17,7	0,06	6xM10

Attachment (2)