شركة مصفاة البترول الاردنية المساهمة المحدودة

عمان – الأردن

مناقصة : - (109 / 2022) رقم طلب المواد (22010314) المواد المطلوبة (UPS System 15 K)

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 2022/05/12 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 .

ATTACMENT- I TERMS OF REFERANCE:

Item No.	Specification / Requirements	Deviation
1.	**Purpose:**	
	The purpose of this publication is to set forth standard specification for the Design, Supply, Testing, Commissioning and startup of two parallel Complete True Online Double Conversion 15KVA/12KW UPSs, Three phase input (400V AC, 50Hz), single phase output (V_{L-N}=230V, 50Hz) for DCS panels in control room of sphere tanks of Jordan petroleum refinery Co. Ltd / Zarqa, here in after referred to as the "Company" or JPRC.	
2.	**Scope:**	
	This specification covers the Company's requirements. It gives general outlines of the required system, quality, spare parts, testing , preparation for shipment, inspection, installation , commissioning, training of technicians on site, operation and maintenance, documentation , guarantee and warranty for above mentioned equipment.	
3.	**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. Tenderer 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.	
4.	**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 non compliance 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.	
5.	**Relationship With Other Documents:**	
	This publication shall be read in conjunction with any standard or code referred to herein. In case of discrepancy between requirements of this publication and reference codes, the requirements of codes shall prevail.	
6.	**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.	
	5.	The Contractor shall have a past experience of a minimum three projects of similar equipment and materials within the last 5 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.	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.	
	9.	All instructions and general conditions in the tender documents shall be met.	
7.	**Payment Method:**		
	1.	**To be agreed later**	
8.	**Guarantee and Warranty**		
	1.	The supplier shall guarantee that the UPS 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 two 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 24 months from successful commissioning or 30 months from delivery to Zarka Refinery site, whichever comes later.	
	3.	The warranty period shall be (36) months from date of delivery.	

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1.	**Introduction:**				
	1.1	**Local Conditions:**			
		1.	The atmosphere is tropical.		
		2.	The UPS will be installed indoor.		
		3.	Maximum shade temperature	40 °C	
		4.	Maximum ambient temperature in Summer	40 °C	
		5.	Minimum ambient temperature in Winter	-5 °C	
		6.	Average relative humidity	: 50% at 35 °C in summer : 75% at 15 °C in winter : 96% (maximum value)	
		7.	Elevation above sea level	550 m	
	1.2	**Standards:**			
		All equipment and devices shall comply with latest applicable standards recognized internationally, such as:-			
		1.	IEC (IEC62040, 60240-1, 60240-2) standard (International Electro technical Commission).		
		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 UPSs shall be furnished with parallel kit for parallel operation.		
		2.	Each 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 in the displaying unit.		
		4.	Galvanic Isolation between input and output shall be provided.		
		5.	Dimensional drawing for each panel shall be provided. All panels of UPS's system shall be suitable for the available space.		
		6.	The system shall be ventilated sufficiently by means of extraction fans or other suitable method to be specified in the offer.		
		7.	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.		
		8.	UPS shall be have self-diagnosis function to discover hidden faults of UPS in time		
		9.	The UPSs should be easy to maintain and accessible to internal parts		
		10.	The software for the UPSs must be supplied with it so that the entire UPSs is controlled and resets for any messages that appear on it without the need to return to the manufacturer		
	2.2	**System Principle of Operation:**			
		1.	The UPS operating principle shall be include but not limited the following modes of operation:		
			a.	**Normal Mode:** AC power flows to each UPS—one input into the rectifier and one into an internal bypass, where individual output from both UPSs are merged into a single output (Synchronizing) and sharing to supply a common output loads. Any failure of any kind Should occur with either ups module, the critical load is still UPS-protected. and supplied from	

Item No.	Specification / Requirements				Deviation
				healthy other UPS	
			b.	**Emergency Mode**: Upon failure or degradation of the utility AC power, the critical AC load supplied by the inverters will 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 automatically.	
			d.	**Bypass Mode:** When there is a need for isolating serviceable system components, i.e., rectifier, inverter, and static switch, so that the critical loads supplied directly from AC mains , 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.	3 phase input (400 V, 50 Hz) / 1 phase output (V_{L-N}=230V, 50 Hz) double conversion online UPS.	
			b.	Parallel configuration, two separate UPS working parallel.	
			c.	15 KVA / 12KW, 0.8 power factor / each UPS	
			d.	Microprocessor controlled system.	
		2.	**Input Specifications:**		
			a.	Three Phase 400V (± 10%), 50 Hz, PF≥ 0.85	
			b.	Input current Distortion (Total Harmonic Distortion THD)< 5%.	
			c.	Harmonic Distortion doesn't exceed 5 % at V-Input (at 100% load).	
		3.	**Output Specification:**		
			a.	Single Phase output: (V_{L-N}=230V), 50Hz.	
			b.	Rated output power 15KVA @ 0.8 PF lagging.	
			c.	Provided with advanced module card for network monitoring and protection.	
			d.	The loads are DCS panels, servers, computers, and the load power supply is single phase 230 V, 50 Hz.	
			e.	Communication Interface provided with RS 232, RS 485 ports, USB, dry contacts, Cold Start	
		4.	**Rectifier for Inverter Supply:**		
			a.	Full bridge phase angle controlled Thyristor module rectifier	
			b.	Microprocessor controlled system.	
			c.	Input Voltage 3Phase (4wire), (400VAC±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%.	
		6.	**Static By-Pass Switch**		
			a.	Uninterruptible static switch with back feed protection.	

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	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.		
	d.	The system shall be provided with redundant capability.		
7.	**Battery Charger**			
	a.	Input voltage 3Phase X 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.		
8.	**Batteries**			
	a.	Lead Acid battery with 10 Years lifetime		
	b.	Batteries shall be sufficient to operate the load for one hour at full load for each UPS without interruption.		
	c.	Number of battery cell elements shall be specified; also battery arrangement and connections shall be indicated clearly on the offer.		
	d.	The battery shall include accessories and suitable racks for easy installation.		
	e.	Calculation for battery requirement shall be provided with offer		
	f.	Each UPS shall be have its external Separate batteries cabinet.		
	g.	The UPSs shall be suitable to start cold; If there is no utility, we can use the battery to start cold		
9.	**Protections**			
	1.	Short circuit protection.		
	2.	Over voltages protection.		
	3.	Under voltage protection.		
	4.	Over current protection.		
	5.	Over temperature protection.		
	6.	battery under-voltage warning protection		
	7.	battery overcharge protection		
	8.	input phase sequence protection		
10.	**Front panel Indicator:**			
	1.	Inverter not synchronized		
	2.	Inverter DC input low / DC input high		
	3.	Bypass out of limit.		
	4.	Bypass MCB off / Output MCB off.		
	5.	Inverter overload.		
	6.	Internal / Inverter over temperature.		
	7.	IGBT SCR fuse failure.		
	8.	Inverter output high / output low		
	9.	Maintenance switch ON.		
	10.	Inverter failure.		
	11.	Mains ON / . Auto ON.		
	12.	Load on bypass / Load on inverter / Load on battery.		
11.	**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.		

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			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.	
		12.	**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.		
3.	**Mechanical Specification & Dimensions:**					
	3.1	The complete panel assembly shall be installed within the available space specified, taking into your consideration the required space requirements around panels for ventilation and access works for maintenance activities.				
	3.2	Cable entry to panels shall be from bottom.				
	3.3	Noise level shall not exceed 53 dBA (at (1) m away from system as per ISO7779).				
	3.4	It is the manufacturer's responsibility to select the proper cooling method for the system and specify it with details in the offer.				
	3.5	All System panels shall be weatherproof protected; the degree of protection shall be not less than IP31 (as per IEC 60529).				
4.	**Nameplates :**					
	4.1	**General:**				
		Components shall have nameplates fixed securely to the equipment. The plates shall be riveted on, or if screws are used, their heads shall be hammered to prevent removal. The manufacturer may add the data required below to their standard plates. The data shall be clearly stamped or preferably engraved. The language used shall be English.				
	4.2	**Data:**				
		Nameplate shall include the following data :				
		1.	The Company's F.P.O. (Foreign Purchase Order) number and date of order.			
		2.	Manufacturer's name, order number or works identification details, serial numbers, type and size .			
		3.	Manufacturer's standard nameplate data for each panel/ system secured at each panel at a suitable place.			
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 three guaranteed years. 2. Next five years of 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.				

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	5.4	The Tenderer 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 guaranteed years and not included in the offered spare parts, the Contractor shall provide these spare parts 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).	
		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).	

Item No.	Specification / Requirements			Deviation
		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 regards 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 be provide typical designs for equipment installation.		
	8.2	Commissioning and startup shall be carried out by the Contractor 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 30 days.		
	8.4	The engineers and technicians of the Company will do the installation but commissioning shall be under the supervision and responsibility of the Contractor.		
	8.5	The Contractor 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.		
9.	**Training**			
	9.1	A training course should be held on the systems in general and on the operation and maintenance of the supplied systems in particular and in detail		