



**U.S. Consulate General**

Karachi, Pakistan

Date: August 27, 2020

To: Offeror Page 1 of 13

Request Number: PR8833767 – RFQ KHI-FM: Preventive Maintenance Service of DIKIN Air Cooled Chillers at NCC

From: Procurement & Contracting Department

U.S. Consulate General

Plot No- 3, 4, 5, New TPX, Area

Mai Kolachi Road

Karachi, Pakistan.

E-mail: KRCPoc@state.gov

**PR7014240 - PM of Utility Vehicles, Power Tools, Engine Driven Machines**

The U.S. Consulate Karachi requires following services for utility vehicles and equipment for FM, section and requests your participation in quoting for the said services. Preventive Maintenance services for high pressure washer, mules (gasoline & diesel), engine driven power tools and engine driven other machines.

**Item Description:**

**1. DESCRIPTION**

The American Consulate in Karachi requires preventive maintenance services for Chillers. These services shall result in all systems being serviced under this agreement being in good operational condition when activated. If this work is to be performed on systems accessing the PCC/CAA areas of the building. Please see section 6.2.3 for security requirements.

**1.1. Type of Contract**

This is a firm fixed price contract payable entirely in US\$. Prices for all Contract Line Item Numbers (CLIN) shall include proper disposal of toxic substances as per Item 8.4 where applicable. No additional sums will be



payable for any escalation in the cost of materials, equipment or labor, or because of the contractor's failure to properly estimate or accurately predict the cost or difficulty of achieving the results required. The contract price will not be adjusted due to fluctuations in currency exchange rates.

## 1.2. Period of Performance

The contract will be for a period of one-year, with a maximum of four one-year optional periods of performance and will be expected to commence no later than February 2020.

## 2. PRICING

The rates below include all costs associated with providing preventive maintenance services in accordance with the attached scope of work, and the manufacturer's warranty including materials, labor, insurance (see FAR 52.228-4 and 52.228-5), overhead, profit and GST (if applicable).

## 3. NOTICE TO PROCEED

After Contract award and submission of acceptable insurance certificates and copies of all applicable licenses and permits, the Contracting Officer will issue a Notice to Proceed. The Notice to Proceed will establish a date (a minimum of ten (10) days from date of Contract award unless the Contractor agrees to an earlier date) on which performance shall start.

## 4. EQUIPMENT AND PERFORMANCE REQUIREMENTS

4.1. The American Consulate General, Karachi requires the Contractor to maintain the following equipment in a safe, reliable and efficient operating condition. Please see equipment list included in Exhibit A for a more detailed description.

1. DIKIN Air-Cooled Modular Chiller for DX type AHU-Qty: 1

Model: RCS045DYYY, Sr. No.: FB0U160500822

Number of Chillers 01 with 02 No. Condensing Circuits each comprising of

02 No. compressors i.e. Total 04 No. of Compressors and 04 No. VFD controlled fans.

4.2. The Contractor shall provide all necessary materials required to perform inspection, maintenance, and component replacement as required to maintain the systems in accordance with this work statement.



#### 4.3. Performance Standards

The chillers shall be clean and in good operating condition upon completion of the service. The preventive maintenance service shall result in the parts of the system serviced being in a condition to operate efficiently and effectively.

### 5. ACCESS TO GOVERNMENT BUILDINGS AND STANDARDS OF CONDUCT

6.1 General. The Contractor shall designate a representative who shall supervise the Contractor's technicians and be the Contractor's liaison with the American Consulate General, Karachi. The Contractor's employees shall be on-site only for contractual duties and not for any other business or purpose. Contractor employees will be given access to the equipment and equipment areas and will be escorted by Embassy personnel.

**6.2 Personnel Security.** The Government reserves the right to deny access to U.S.-owned and U.S.-operated facilities to any individual. The Contractor shall provide the names, biographic data and police clearance on all Contractor personnel who to be used on this Contract prior to their utilization. Submission of information shall be made within 30 days of award of contract. **No technician will be allowed on site without prior authorization. Note: this may include cleared personnel if advance notice of visit is not given at least one week before the scheduled visit.**

#### 6.4 Standards of Conduct

6.4.1 General. The Contractor shall maintain satisfactory standards of employee competency, conduct, cleanliness, appearance, and integrity and shall be responsible for taking such disciplinary action with respect to employees as may be necessary. Each Contractor employee shall adhere to standards of conduct that reflect credit on themselves, their employer, and the United States Government. The Government reserves the right to direct the Contractor to remove an employee from the worksite for failure to comply with the standards of conduct. The Contractor shall immediately replace such an employee to maintain continuity of services at no additional cost to the Government.

### 6 SCHEDULED PREVENTIVE MAINTENANCE

#### 6.1. General

6.1.1. The Contractor shall perform preventive maintenance as outlined in

Exhibit A - STATEMENT OF WORK. The objective of scheduled preventive maintenance is to eliminate system malfunction, breakdown and deterioration when units are activated/running.



## 7. DELIVERABLES

Provide a written report in English to Post Facilities Manager containing following:

- a) System information (make, model, all devices types)
- b) Pass/Fail of each feature and type of component tested. If a device fails, note device type, address and location within Post
- c) Any comments on system (or device) condition pertaining to service life and dependability.
- d) Full printout of test from system printer
- e) Testing of exhaust gas by Gas Analyzer

The following items shall be delivered under this contract:

Description	QTY	Delivery Date	Deliver to
Names, biographic data, police clearance on Contractor personnel (#6.2)	1	30 days after contract award	COR
Certificate of Insurance (#11.2)	1	30 days after contract award	CO
PM Checklist signed by Contractor's employee (#7.2.1)	1	After completion of each maintenance service	COR
Invoice (#15)	1	After completion of each maintenance service	COR

## 2. EXHIBIT A

### Statement of Work



## I. GENERAL INFORMATION:

The United States Consulate General, in Karachi requires professional services and contractor cost proposals to perform preventive maintenance services of the facility's Modular Chillers.

## II. PROJECT

### REQUIREMENT:

### DESCRIPTION

### OF EQUIPMENT

*\*Please see attachment at the end of this sheet for more details*

1. DIKIN Air-Cooled Modular Chiller for DX type AHU-
2. Qty: 1 Model: RCS045DYYY, Sr. No.: FB0U160500822  
Number of Chillers 01 with 02 No. Condensing Circuits each comprising of 02 No. compressors i.e. Total 04 No. of Compressors and 04 No. VFD controlled fans.

## III. GENERAL REQUIREMENTS:

The Contractor under this SOW shall be responsible for labor, tools, and materials required to carry out all preventive maintenance as outlined in this SOW. The Government has the following manuals:

- O & M Manual

## IV. SCOPE OF WORK - CHILLERS MAINTENANCE

### SAFETY AND SPECIAL INSTRUCTIONS:

1. Follow site safety procedures and supervisor's instructions.
2. Schedule outage with operating personnel.
3. Use extreme caution when climbing access ladders.
4. Perform applicable lockout/tag out steps of site safety procedures.
5. Lockout and disconnect the main power before tightening the main supply lugs in order to avoid the hazard of electrical shock, which could result in serious personal injury or death.
6. Record and report equipment damage or deficiencies.
7. Review and follow the manufacturer's O&M instructions.
8. Record results in the equipment history log.
9. Allow only qualified personnel to do maintenance work on this equipment.



10. Record results in the equipment history log.
11. Check manufacturer's specifications for the maximum number of plugged tubes.
12. Allow only qualified personnel to do maintenance work on this equipment.

## **CHILLERS**

### **MAINTENANCE PROCEDURES:**

#### **Air Cooled Chiller:**

##### Semi-Annually

1. Check unit for proper operation, excessive noise or vibration.
2. Run system diagnostics test.
3. Check oil level in oil separator sight glass. Add oil as necessary.
4. Check liquid line sight glass, oil, and refrigerant pressures.
5. Record system operating temperatures and pressures in the checklist.
6. Check programmable operating set points and safety cutouts. Assure they are correct for the application.
7. Verify motor amperage load limit.
8. Thoroughly clean evaporator and condenser tubes.
9. Inspect plumbing and valves for leaks, adjust as necessary.
10. Check compressor and evaporator heater operation.
11. Check superheat on the evaporator and the economizer feed to the compressor.
12. Check condenser sub-cooling. Check for dirt in the panel. Check door gasket for sealing integrity.
13. Clean chiller and surrounding area.
14. Fill out maintenance checklist and report deficiencies.

##### Annually

1. Disconnect power source and lock out. Check electrical wiring and connections; tighten loose connections.
2. Perform all check items in the Semi-Annual schedule.
3. Perform analysis on oil and filter. Change if necessary. Check compressor oil pump and seals. Check oil heater and thermostat. Check all strainers, valves, etc.
4. Conduct vibration analysis of motor & assembly: Check all alignments to specifications. Check all seals.
5. Lubricate shaft bearings and motor bearings as required.
6. Check superheat and sub-cooling temperatures.
7. Check contactors, sensors, and mechanical safety limits.
8. Check the chiller for leaks. Add refrigerant if low. Record amounts and address leakage problems.
9. Thoroughly clean intake side condenser coils, fans, and intake screens.
10. Perform any additional maintenance tasks as recommended in the manufacture's operation and maintenance manuals.
11. Perform operational test and return to service.



12. Remove debris from work-site.
13. Fill out maintenance checklist and report deficiencies.

### **Water Cooled Chiller:**

#### Semi-Annually

1. Check unit for proper operation.
2. Check oil level; add oil as necessary.
3. Check oil temperature.
4. Check dehydrator or purge system; remove water if observed in sight.
5. Run system control tests.
6. Check refrigerant charge/level, add as necessary.
7. Check compressor for excessive noise/vibration.
8. Check sensor and mechanical safety limits; replace as necessary.
9. Clean area around equipment.
10. Document all maintenance and cleaning procedures.

#### Annually

1. Disconnect power source and lock out. Check electrical wiring and connections; tighten loose connections.
2. Perform all check items in the Semi-Annual schedule.
3. Clean dehydrator float valve.
4. Perform spectrochemical analysis of compressor oil; replace oil as necessary.
5. Replace oil filters and add oil as necessary.
6. Inspect cooler and condenser tubes for leaks; clean screens as necessary.
7. For dedicated PCC chillers the glycol level of the chilled water is to be checked and adjusted to the percentage required by OBO Engineering Dept.
8. Inspect utility vessel vent piping and safety relief valve; replace as necessary.
9. Inspect/clean the economizer, gas line damper valve and actuator arm.
10. Run an insulation test on the centrifugal motor.
11. Clean area around equipment.
12. Document all maintenance and cleaning procedures.

### **Scroll Chiller:**

#### Monthly

1. Measure and record the evaporator superheat.
2. Measure and record the system sub-cooling.
3. Manually rotate the condenser fans to ensure that there is proper clearance on the fan shroud openings.

#### Annually

1. Disconnect power source and lock out. Check electrical wiring and connections; tighten loose connections.
2. Complete all monthly maintenance checks.



3. Check the oil level and refrigerant charge.
4. Have a qualified laboratory perform a compressor oil analysis to determine system moisture content and acid level.
5. Leak test the chiller, check operating and safety controls, and inspect electrical components for proper operation.
6. Inspect all piping components for leaks and damage. Clean all water strainers
7. Clean and repaint any components that show corrosion.
8. Clean the condenser coils.
9. Clean the condenser fans. Check the fan assemblies for proper clearance in the fan shroud openings and for motor shaft misalignment or abnormal end-play, vibration and noise.

### **Modular Chiller:**

#### Annually

1. Disconnect power source and lock out. Check electrical wiring and connections; tighten loose connections.
2. Inspect all electrical connections to check that they are not damaged and terminals are tight. Inspect all contactors for pitting and corrosion replace as necessary.
3. Inspect all cabinet screws nuts and bolts, fan motor mount bolts, fan blade set screws, shell and tube evaporator mounting, end cap bolts and connection bolts, brazed plate evaporator mounting bolts as well as compressor and pump mounting bolts for tightness as well as anti-vibration and isolator pads.
4. Check all fuses to make sure that they are sized correctly with proper amp rating.
5. Check all refrigerant pressures and inspect compressor in operation – look for signs of overheating, oil leaks or refrigerant leaks.
6. Conduct “sniffer” leak check of entire refrigerant piping system. Inspect compressor terminals when powered down for pitting, corrosion and loose connections.
7. Check that pressure switches and thermostats have correct cut-in and cut-out settings.
8. Check that the oil level is visible in each compressor and not discolored or bubbled. Take oil sample and analyze for destructive acids, corrosive materials and metal deposits.
9. Check that the pump(s) overload settings match the nameplate(s) and that they work properly.
10. Ensure that the condensing unit is clean and clear of surrounding debris and that panels are clear.
11. Check and record the compressor amperage draws and voltage.
12. Check and record the fan motor amp draws and voltage. Make sure of proper rotation and lubricate if required.
13. Check and record amp draw of the pumps and voltage. Check for signs of leakage at pump seal and suction and discharge





- connections.
14. Record G.P.M. water flow and compare to design specifications.
  15. Check the glycol level of the chilled water.
  16. Check that there is a sufficient Glycol level in feeder tank and check for proper operation.
  17. Tighten all Rota-Lock nuts at the Compressors, Receivers and accumulators. Torque is per manufacturer's recommendations.
  18. Inspect all control capillary tubing to ensure that the lines are separated and not vibrating against each other or any part of the frame or housing.
  19. Inspect all other refrigeration lines for secure mountings. Take corrective measures necessary to prevent piping from rubbing the frame etc.
  20. Inspect all insulation on piping and control sensors. Repair and replace as necessary. Inspect entire plumbing system for leaks and clean any strainers on the system. Replace as necessary.
  21. Check crank case heaters to verify proper operation. Keep spares in stock.
  22. Take a refrigerant sample and analyze for moisture, acid, and rust.
  23. Check operating pressures and temperatures and evaluate whether the system has a full refrigerant charge.
  24. Review logged alarms and look for repeat trends.
  25. Document the preventive maintenance task that have been completed and submit to the Government.

### **Motor Starter /Variable Frequency Drive (5 HP to Less Than 100 HP):**

#### **MAINTENANCE PROCEDURES:**

##### Annually:

1. Vacuum dust and dirt from heat sink fins
2. Check ventilation fans for proper operation and clean as needed.
3. Check line voltage, motor & output phase balance
4. Complete RCM Procedure CM-0002 (Qualitative Infrared Testing).
5. Visually inspect for broken parts, contact arcing, or any evidence of overheating.
6. Check motor nameplate for current rating and controller manufacturer's recommended heater size (report discrepancy to supervisor).
7. Check line and load connections for tightness (check manufacturer's instructions for torque specifications).
8. Check heater mounting screws for tightness.
9. Check all control wiring connections for tightness.
10. On units equipped with motor reversing capacity, check mechanical interlock.
11. On units equipped with two-stage starting, check dash pots and timing controls for proper operation. Adjust as required.
12. On units equipped with variable speed starters:



- a. Record the VFD parameter settings using MCT-10
  - b. Confirm the VFD doors and covers are in place and properly closed.
  - c. Check tightness of connections to resistor bank.
  - d. Check resistor coils and plates for cracking, broken wires, mounting and signs of overheating. Clean as required.
  - e. Check tightness of connections to drum controller.
  - f. Check contacts of drum controller for arcing and overheating. Apply a thin film of lubricant to drum controller contacts and to rotating surfaces.
13. Check starter contact connections by applying a thin film of black contact grease to line and load stabs, operate contacts and check surface contact.
  14. Lubricate all moving parts with proper lubricant.
  15. Clean interior of cabinet.
  16. Clean exterior of cabinet.
  17. Energize circuit and check operation of starter and any pilot lights. Replace as required.

**Panel, Electronic Controls:**

Annually

1. Clean panel interior.
2. Verify functionality of supported devices.
3. Clean ventilation filter and fan (if applicable).
4. Record and report equipment damage or deficiencies.
5. Record results in the equipment history log

Bi-Annually

1. Replace battery where applicable.

Equipment List:

<b>Equipment</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Serial Number</b>	<b>Specifications</b>	<b>Location</b>
Air Cooled Modular Chiller	DAIKIN	RCS045DYY Y	FB0U16050082 2	01 Chiller having 02 Condensing Circuits each comprising 02 Compressors. i.e. Total of 04 Compressors and 04 VFD	On ground just outside of



				controlled Condenser fans.	INOX Building

**Prices:**

Firm Fixed Price.

**TAX:** Your prices shall be duty/tax free. U.S. Consulate General Karachi will neither deduct nor pay any tax for this service.

**Inspection & Acceptance:**

A Government representative will inspect the service(s) delivered to determine the quality and acceptability. Substandard services/products shall be unacceptable at vendor’s expense.

**Payment Terms:**

Payment will be made within 30 days through Electronic Funds Transfer (EFT) upon successful completion of services per month to the U.S. Consulate General, Karachi and submission of legitimate invoice to Financial Section after delivery, and submission of receipt.

**SUBMISSION OF INVOICE:**

Each invoice shall include vendor invoice number, purchase order/contract number, date issued, brief description of supplies/services provided, quantities, unit and total price, and signed by the signing authority.

Invoices must be routed to:

1. One original invoice in pdf format to the Financial Management Center to [KarachiFical@State.gov](mailto:KarachiFical@State.gov)
2. One copy clearly marked “DUPLICATE Copy for Proc & Contracting.” [KRCproc@state.gov](mailto:KRCproc@state.gov)

Although email is the preferred method, invoices may also be submitted by mail (do not send electronically if you mail the invoice to the following address to avoid duplication):

Karachi Fiscal Office  
U.S. Consulate General  
Plot No- 3, 4, 5, New TPX Are



U.S. CONSULATE GENERAL, KARACHI.

Mai Kolachi Road  
Karachi

For payment related queries contractor will contact Karachi Fiscal Office [KarachiFical@state.gov](mailto:KarachiFical@state.gov). Contracting Officer takes no responsibility for payment and/or associated queries.

**Contract Clauses:**

FAR & DOSAR (attached) clauses will apply to this purchase order. These clauses can be accessed through following link:

[http://aopepd.a.state.gov/Content/documents/overseas\\_comm-item-fac-2005-36.docx](http://aopepd.a.state.gov/Content/documents/overseas_comm-item-fac-2005-36.docx)

52.249-2 Termination for Convenience of the Government (Fixed-Price)

(MAY 2004) Alternate I (APR 1984)

52.212-4 Contract Terms and Conditions--Commercial Items (May 2015)

52.212-5 Contract Terms and Conditions Required to Implement Statutes or Executive Orders--Commercial Items (Feb 2016)

**Offer Due Date:**

1. Please submit your quote on or before **September 01, 2020 at 1200Hrs**, to **Procurement Contracting Officer, U.S. Consulate General Karachi**, or via Email to following email addresses:

[KRCProc@state.gov](mailto:KRCProc@state.gov)

No quote will be acceptable after the due date.

2. Please prepare a quotation on your company letterhead in accordance with the requested details of this RFQ.
3. Please provide reference of our Request Number **PR8833767** in all your correspondence regarding this request for price quotation.