

**Preventive Maintenance Contract  
Scope of Work  
For  
York Chillers**

**United States Embassy  
Yaounde  
2014**

**United States Department of State  
OVERSEAS BUILDING OPERATIONS**

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**SECTION 1 - THE SCHEDULE**

**1.0 DESCRIPTION**

The American Embassy in Yaounde, Cameroon requires preventive maintenance services for the chiller system. These services shall result in all systems being serviced under this agreement being in good operational condition when activated.

**1.1. TYPE OF CONTRACT**

This is a firm fixed price contract payable entirely in USD. 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 November 11, 2014.

**2.0 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).

2.1. Base Year. The Contractor shall provide the services shown below for the base period of the contract and continuing for a period of 12 months.

CLIN	Description	Quantity of Equipment	Type of services	No. of service	Unit price / service (\$)	Total per year (\$)
001	Unit # RENM008297	1	Semi annual	1		
001-A	Unit # RENM008297	1	Annual	1		
002	Unit # RENM008298	1	Semi annual	1		
002-A	Unit # RENM008298	1	Annual	1		
	<b>Total Base Year</b>					

2.2. Option Year 1. The Contractor shall provide the services shown below for Option Year 1 of the contract, and continuing for a period of 12 months.

CLIN	Description	Quantity of Equipment	Type of services	No. of service	Unit price / service (\$)	Total per year (\$)
101	Unit # RENM008297	1	Semi annual	1		
101-A	Unit # RENM008297	1	Annual	1		
102	Unit # RENM008298	1	Semi annual	1		
102-A	Unit # RENM008298	1	Annual	1		
	Total Option Year 1					

2.3. Option Year 2. The Contractor shall provide the services shown below for Option Year 2 of the contract, and continuing for a period of 12 months.

CLIN	Description	Quantity of Equipment	Type of services	No. of service	Unit price / service (\$)	Total per year (\$)
201	Unit # RENM008297	1	Semi annual	1		
201-A	Unit # RENM008297	1	Annual	1		
201-B	Unit # RENM008298	1	Semi annual	1		
202	Unit # RENM008298	1	Annual	1		
	Total Option Year 2					

2.4. Option Year 3. The Contractor shall provide the services shown below for Option Year 3 of the contract, and continuing for a period of 12 months

CLIN	Description	Quantity of Equipment	Type of services	No. of service	Unit price / service (\$)	Total per year (\$)
301	Unit # RENM008297	1	Semi annual	1		
301-A	Unit # RENM008297	1	Annual	1		
302	Unit # RENM008298	1	Semi annual	1		
302-A	Unit # RENM008298	1	Annual	1		
	Total Option Year 3					

2.5. Option Year 4. The Contractor shall provide the services shown below for Option Year 4 of the contract, and continuing for a period of 12 months

CLIN	Description	Quantity of Equipment	Type of services	No. of service	Unit price / service (\$)	Total per year (\$)
401	Unit # RENM008297	1	Semi annual	1		
401-A	Unit # RENM008297	1	Annual	1		
402	Unit # RENM008298	1	Semi annual	1		
402-A	Unit # RENM008298	1	Annual	1		
	Total Option Year 4					

2.6. Total for all years:

Base Year	\$ _____
Option Year 1	\$ _____
Option Year 2	\$ _____
Option Year 3	\$ _____
Option Year 4	\$ _____

TOTAL \$ \_\_\_\_\_

2.7 Repair option. Repairs are NOT included under this agreement (see 7.1.3) and are to be done outside this contract. However, we would like to have current labor rates in the event that there is an issue discovered during the preventive maintenance of the specified equipment. Please provide your current labor rates in the Repair Option fields below. As stated in 7.1.3 any necessary repairs or parts will be submitted for approval and then billed against a separate PO. The Contractor is not approved to do any additional work without approval.

Repair Labor Rates	
Base Year	\$ _____/hr
Option Year 1	\$ _____/hr
Option Year 2	\$ _____/hr
Option Year 3	\$ _____/hr
Option Year 4	\$ _____/hr

### 3.0 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.

## DESCRIPTION/SPECIFICATION/WORK STATEMENT

### 4.0 EQUIPMENT AND PERFORMANCE REQUIREMENTS

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

#### 1) Equipment Description

##### Rotary- Screw Water Chillers (2 ea)

Manufacture: York International  
Model: YCAS0685EB50YGADPT  
Serial Numbers: RENM008297 / RENM008298  
Capacity: 656.2 kW  
Volts/PH/Hz: 380-415/3/50  
Refrigerant: 407C

4.2. The Contractor shall provide all necessary managerial, administrative and direct labor personnel, as well as all transportation, equipment, tools, supplies and materials required to perform inspection, maintenance, and component replacement as required to maintain the systems in accordance with this work statement. Under this Contract the Contractor shall provide:

- The services of trained and qualified technicians to inspect, adjust, and perform scheduled preventive maintenance.

4.3. Performance Standards

Under this contract the Contractor shall provide the services to maintain the Chiller/s on a scheduled basis and to inspect equipment operation and perform required preventive maintenance.

5.0 HOURS OF PERFORMANCE

5.1. The Contractor shall maintain work schedules. The schedules shall take into consideration the hours that the staff can effectively perform their services without placing a burden on the security personnel of the Post. The Contractor shall deliver standard services between the hours of 07:30 AM and 17:00 PM Monday through Thursday and 07:30 to 12:30 on Friday. No work shall be performed on US Government and local holidays. Below is a list of the holidays.

Jan 01	New Year's Day	A
Jan 16	Birthday of Martin Luther King, Jr.	A
Feb 11	Youth Day	C
Feb 20	President's Day	A
April 18	Good Friday	C
May 1	Labor Day	C
May 20	National Day	C
May 28	Memorial Day	A
May 29	Ascension Day	C
Jul 04	Independence Day	A
July 28 (TBA)	End of Ramadan (El al-Fitr)	C
August 15	Assumption Day	C
Sep 01	Labor Day	A
October 4 (TBA)	End of Ramadan (Eid al-Adha)	C
Oct 08	Columbus Day	A
Nov 11	Veterans Day	A
Nov 22	Thanksgiving Day	A
Dec 25	Christmas	A

A=American Holiday, C= Cameroonian Holiday, TBA = To be announced may fall on different date.

## 6.0 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 Embassy. The Contractor's employees shall be on-site only for contractual duties and not for any other business or purpose. Contractor employees shall have 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 shall be used on this Contract prior to their utilization. Submission of information shall be made within 5 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.**

6.2.1 Vehicles. Contractor vehicles will not be permitted inside the embassy compound without prior approval. If you need to have vehicle access please submit your vehicle information (Make, Model, License Plate #) along with a written justification as to why access is necessary. This should be submitted to the Facility Manager at least one (1) week prior to the visit.

6.2.1 Government shall issue identity cards to Contractor personnel, after they are approved. Contractor personnel shall display identity card(s) on the uniform at all times while providing services under this contract. These identity cards are the property of the US Government. The Contractor is responsible for their return at the end of the contract, when an employee leaves Contractor service, or at the request of the Government. The Government reserves the right to deny access to U.S.-owned and U.S.-operated facilities to any individual.

6.3. Security Clearances. Security clearances are not a requirement for performance on this contract, as there will be no access to classified information or areas.

6.3.1 The Contractor must comply with all of the following requirements relating to the protection of U.S. Embassy in Yaounde, Cameroon Diplomatic personnel, property and compound project information and cooperate fully in all security matters Sensitive But Unclassified (SBU) and information that may arise relating to this contract.

Contractor personnel may also be exposed to various documents and signs, including Post notices, event schedules, DoS regulations and conversations or announcements relating to the operation of the U. S. Embassy Conakry and diplomatic personnel. This information should not be shared with anyone not employed by or falling under the protection of the Embassy.

Contractor personnel may be exposed to various documents, such as blueprints, drawings, sketches, notes, surveys, reports, photographs, and specifications, received or generated in conjunction with this contract. These documents contain information associated with diplomatic facilities for the U.S. Department of State. These documents have been marked with the handling designations "Unclassified" or "Sensitive But Unclassified" and US Government warnings against reproduction and distribution. These documents require special handling and dissemination restrictions. All handling designations and warnings on original documents must be reproduced on subsequent copies.

The loss, compromise, or suspected compromise or loss of any SBU information, contract related information (personnel files, payroll information, etc.), any post or diplomatic facility related information (documents, notes, drawings, sketches, surveys, reports, exposed film, negatives, or photographs), or ANY information which may adversely affect the security interests of the United States, must be immediately brought to the attention of the Contracting Officer (CO) and Contracting Officer's Representative (COR).

Photographs of any diplomatic overseas building or facility must be authorized in advance by the COR and Regional Security Officer (RSO), who will establish any controls, limits, and/or restrictions as necessary. Exposed film depicting any Controlled Access Area and/or sensitive equipment must be developed in a U.S.- controlled environment by appropriately cleared personnel. No further dissemination, publication, duplication, or other use beyond that which was requested and approved is authorized without specific, advance approval from DS. DS reserves the right to demand retention of all copies of said photographs and/or negatives, following fulfillment of the previously authorized usage.

Transmission of any information marked Sensitive But Unclassified (SBU) or contract/personnel sensitive information, via the Internet, is prohibited. SBU information can be transmitted via ProjNet, mail, FedEx (or other commercial carrier) or fax, or hand carried by authorized contractor personnel.

Discussion of U.S. Diplomatic post activities while not on post, to include in homes, hotel rooms, restaurants and all other public places, is prohibited. Any contact with host or third country nationals that seems suspicious (such as undue curiosity in the project or project personnel) shall be reported immediately to the COR and RSO.

The Contractor and its employees shall exercise utmost discretion in regard to all matters relating to their duties and functions. They shall not communicate to any person any information known to them by reason of their performance of services under this contract which has not been made public, except to the extent necessary to perform their required duties in the performance of the contract requirements or as provided by written authorization of the Contracting Officer. All documents and records (including photographs) generated during the performance of work under this contract shall be for sole use of and shall become the exclusive property of the U.S. Government. No article, book, pamphlet, recording, broadcast, speech, television appearance, film or photograph concerning any aspect of the work performed under this contract shall be published or disseminated through any media, to include company or personal websites, without the prior written authorization of the Contracting Officer. These obligations do not cease upon the expiration or termination of this contract or at any other point in time. The Contract shall include the substance of this provision in all subcontracts hereunder.

#### 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.

6.4.2 Neglect of Duties. Neglect of duties shall not be condoned. This includes sleeping while on duty, unreasonable delays or failures to carry out assigned tasks, conducting personal affairs during duty hours and refusing to render assistance or cooperate in upholding the integrity of the worksite security.

6.4.3 Disorderly Conduct. The Contractor shall not condone disorderly conduct, use of abusive or offensive language, quarreling, and intimidation by words, actions, or fighting. Also included is participation in disruptive activities that interfere with normal and efficient Government operations.

6.4.4 Intoxicants and Narcotics. The Contractor shall not allow its employees while on duty to possess, sell, consume, or be under the influence of intoxicants, drugs or substances which produce similar effects.

6.4.5 Criminal Actions. Contractor employees may be subject to criminal actions as allowed by law in certain circumstances. These circumstances include but are not limited to the following actions: falsification or unlawful concealment, removal, mutilation, or destruction of any official documents or records or concealment of material facts by willful omission from official documents or records; unauthorized use of Government property, theft, vandalism, or immoral conduct; unethical or improper use of official authority or credentials; security violations; organizing or participating in gambling in any form; and misuse of weapons.

6.4.6 Key Control. The Contractor **will not** be issued any keys. The keys will be checked out from Post 1 by a "Cleared American" escort on the day of service requirements.

6.4.7 Notice to the Government of Labor Disputes. The Contractor shall inform the COR of any actual or potential labor dispute that is delaying or threatening to delay the timely performance of this contract.

## 7.0 SCHEDULED PREVENTIVE MAINTENANCE

### 7.1. General

7.1.1. 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.

7.1.2. The Contractor shall inventory, supply and replace expendable parts (eg, filters, belts, hoses, gaskets) that have become worn down due to wear and tear. The Contractor shall maintain a supply of expendable and common parts on site so that these are readily available for normal maintenance to include: hoses, belts, oil, chemicals, coolant, filters (Air, Fuel, Oil), grease, sealant, thermostat, fuses; in addition to the appropriate tools, testing equipment, safety shoes and apparel for technicians, personal protective equipment (hands, hearing, eye protection), MSDS, cleaning material and oil spill containment kits. The contractor should inventory the supply after each visit and order replacement supplies and have them delivered on site.

7.1.3. Exclusion. This contract does NOT include repair of equipment and replacement of hardware (e.g. bearings, pistons, piston rings, crankshaft, gears.) **Hardware replacements will be separately priced out by the Contractor for the Government's approval and acceptance.** The Government has the

option to accept or reject the Contractor's quote for parts and reserves the right to obtain similar spare parts from other competitive sources. If required by the Government, the Contractor shall utilize Government-purchased spare parts, if awarded the work. Such repairs/replacements will be accomplished by a separate purchase order. However, this exclusion does not apply if the repair is to correct damage caused by Contractor negligence.

7.1.4. Replacement/repair of any electronic or electrical parts must be approved by the COR prior to installation of the part. If the Contractor proceeds to replace any electronic or electrical parts without COR approval, the Contractor shall de-install the parts at no cost to the Government.

## 7.2 Checklist Approval

The Contractor shall submit to the COR a schedule and description of preventive maintenance tasks which the Contractor plans to provide. The Contractor shall prepare this schedule and task description in a checklist format for the COR's approval prior to contract work commencement.

7.2.1. The Contractor shall provide trained technicians to perform the service at frequencies stated in Exhibit A and on the equipment called out in this SOW. The technician shall sign off on every item of the checklist and leave a copy of this signed checklist with the COR or the COR's designate after the maintenance visit.

7.2.2. It is the responsibility of the Contractor to perform all manufacturers' recommended preventive maintenance as well as preventive maintenance recommended by the manufacture technical manuals for the respective equipment.

## 8.0 PERSONNEL, TOOLS, CONSUMABLE MATERIALS AND SUPPLIES

The Contractor shall provide trained technicians with the appropriate tools and testing equipment for scheduled maintenance, safety inspection, and safety testing as required by this Contract. The Contractor shall provide all of the necessary materials and supplies to maintain, service, inspect and test all the systems to be maintained.

8.1 Contractor furnished materials. Will include but not limited to appropriate tools, testing equipment, safety shoes and apparel for technicians, hands, hearing and eye protection, MSDS, cleaning material and oil spill containment kit. Expendable/consumable items (e.g. hoses, belts, oil, chemicals, coolant, filters (Air, Fuel, Oil), generator starting batteries, grease, sealant, thermostat, fuse), will be maintained in the onsite inventory. See 7.1.2.

8.2 Repairs. Repairs are not included in this contract. See Item 7.1.3. Exclusions.

8.3 Disposal of used oil, fuel, battery and other toxic substances. The Contractor is responsible for proper disposal of toxic/hazardous substances. All material shall be disposed of according to Government and Local law. After proper disposal the contractor must show proof of authorized disposal of these toxic/hazardous substances.

9.0 -----

## 10. DELIVERABLES

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	5 days after contract award	COR
Certification of disposal of toxic chemicals by local authorities (#8.3)	1	After each change	COR
Certificate of Insurance (#10.2)	1	10 days after contract award	COR
Applicable permits	1	10 days after contract award	COR
Approved 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

## 11.0 INSURANCE REQUIREMENTS

11.1 Personal Injury, Property Loss or Damage (Liability). The Contractor assumes absolute responsibility and liability for any and all personal injuries or death and property damage or losses suffered due to negligence of the Contractor's personnel in the performance of this Contract

The Contractor's assumption of absolute liability is independent of any insurance policies.

11.2 Insurance. The Contractor, at its own expense, shall provide and maintain during the entire period of performance of this Contract, whatever insurance is legally necessary. The **Contractor shall carry the following minimum insurance:**

### Public Liability Insurance

Bodily Injury	\$ per occurrence	\$ Cumulative
Property Damage	\$ per occurrence	\$ Cumulative

### Workers' Compensation and Employer's Liability

11.3 Worker's Compensation Insurance. The Contractor agrees to provide all employees with worker's compensation benefits as required under local laws (see FAR 52.228-4 "Worker's Compensation and War-Hazard Insurance Overseas").

## 12.0 LOCAL LAW REGISTRATION

If the local law or decree requires that one or both parties to the contract register the contract with the designated authorities to insure compliance with this law or decree, the entire burden of this registration shall rest upon the Contractor. Any local or other taxes which may be assessed against the Contract shall be payable by the Contractor without Government reimbursement.

## 13.0 QUALITY ASSURANCE PLAN (QAP).

13.1 Plan. This plan is designed to provide an effective surveillance method to promote effective Contractor performance. The QAP provides a method for the Contracting Officer's Representative (COR) to monitor Contractor performance, advise the Contractor of unsatisfactory performance, and notify the Contracting Officer of continued unsatisfactory performance. The Contractor, not the Government, is responsible for management and quality control to meet the terms of the Contract. The role of the Government is to conduct quality assurance to ensure that Contract standards are achieved.

Performance Objective	PWS Para	Performance Threshold
<b><u>Services.</u></b> Performs all services set forth in the performance work statement (PWS)	1 thru 12	All required services are performed and no more than one (1) customer complaint is received per month

13.2 Surveillance. The COR will receive and document all complaints from Government personnel regarding the services provided. If appropriate, the COR will send the complaints to the Contractor for corrective action.

13.3 Standard. The performance standard is that the Government receives no more than one (1) customer complaint per month. The COR shall notify the Contracting Officer of the complaints so that the Contracting Officer may take appropriate action to enforce the inspection clause (FAR 52.212-4, Contract Terms and Conditions-Commercial Items), if any of the services exceed the standard.

13.4. Procedures.

13.4.1 If any Government personnel observe unacceptable services, either incomplete work or required services not being performed, they should immediately contact the COR.

13.4.2 The COR will complete appropriate documentation to record the complaint.

13.4.3 If the COR determines the complaint is invalid, the COR will advise the complainant. The COR will retain the annotated copy of the written complaint for his/her files.

13.4.4 If the COR determines the complaint is valid, the COR will inform the Contractor and give the Contractor additional time to correct the defect, if additional time is available. The COR shall determine how much time is reasonable.

13.4.5 The COR shall, as a minimum, orally notify the Contractor of any valid complaints.

13.4.6 If the Contractor disagrees with the complaint after investigation of the site and challenges the validity of the complaint, the Contractor will notify the COR. The COR will review the matter to determine the validity of the complaint.

13.4.7 The COR will consider complaints as resolved unless notified otherwise by the complainant.

13.4.8. Repeat customer complaints are not permitted for any services. If a repeat customer complaint is received for the same deficiency during the service period, the COR will contact the Contracting Officer for appropriate action under the Inspection clause.

14. TRANSITIONS/CONTACTS

Within 10 days after contract award, the Contracting Officer may ask the contractor to develop a plan for preparing the contractor to assume all responsibilities for preventive maintenance services. The plan shall establish the projected period for completion of all clearances of contractor personnel, and the projected start date for performance of all services required under this contract. The plan shall assign priority to the selection of all supervisors to be used under the contract.

14.1 On site contact. The following are the designated contact personnel between the US Embassy and the Contractor

- Facility Manager: Keith Adkins  
+237 2220 1507 ext: 4630  
adkinsbk@state.gov
- Technical Specialist: Christopher Che  
+ 237 2220 1507 ext: 4650

15. SUBMISSION OF INVOICES

The Contractor shall submit an invoice after each preventive maintenance service has been performed. Invoices must be accompanied by a signed copy of the Maintenance Checklist for the work performed including parts replacement and break down calls, if any. No invoice for preventive maintenance services will be considered for payment unless accompanied by the relevant documentation.

The Contractor should expect payment 30 days after completion of service or 30 days after receipt of invoice at the Embassy's payment office, whichever is later. Invoices shall be sent to:

AMERICAN EMBASSY YAOUNDE  
6.050 AVENUE ROSA PARKS PO BOX 817,  
ATTN: FINANCIAL MANAGEMENT OFFICER  
YAOUNDE, Cameroon

## Exhibit A - - STATEMENT OF WORK

### I. GENERAL INFORMATION:

The United States Embassy in Yaounde requires professional services and contractor cost proposals to perform preventive maintenance services of the facility's chiller/s systems.

### II. PROJECT REQUIREMENTS:

#### DESCRIPTION OF EQUIPMENT \*:

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

#### 1) Equipment

Manufacture: York International  
Model: YCAS0685EB50YGADPT  
Serial Numbers: RENM008297 / RENM008298  
Capacity: 656.2 kW  
Volts/PH/Hz: 380-415/3/50  
Refrigerant: 407C

### III. GENERAL REQUIREMENTS:

The Contractor under this SOW will be responsible for labor, tools, and materials required to carry out all preventive maintenance as outlined in this SOW. Embassy staff has service manuals for all chillers onsite.

### IV. SCOPE OF WORK - - CHILLER PREVENTIVE MAINTENANCE

Contractor shall provide all materials, supervision, labor, tools and equipment to perform preventive maintenance. All personnel working in the vicinity shall wear and /or use safety protection while all work is performed. Any questions or injuries **shall** be brought to the attention of the Post Occupation Safety and Health Officer (POSHO). Material Safety Data Sheets (MSDS) shall be provided by the Contractor for all HAZMAT materials. Copies will be provided to the COR for approval.

If any discrepancies are found with the generator system that are not covered under this scope of work then the contractor must provide the following:

1. Detailed report noting the discrepancy found.
2. Bill of Materials (BOM) to include component name, quantity, part #, and price for any repair material required and material lead time.
3. Price quote for repair labor.

At a minimum, the following work must be done:

## **Rotary-Screw Water Chiller:**

### Special Instructions-

1. Follow site safety procedures and supervisor's instructions.
2. Schedule outage with operating personnel.
3. Use extreme caution when climbing roof access ladders.
4. Perform applicable lockout/tag out steps of site safety procedures.
5. Record and report equipment damage or deficiencies.
6. Review and follow the manufacturer's O&M instructions.
7. Follow safety and environmental procedures for the handling and disposing of refrigerants and compressor oil.
8. Don't vent refrigerants. Refrigerants must be recovered.
9. Record quantities of refrigerants and compressor oil, added or removed.
10. Record results in the equipment history log.
11. Check manufacturer's specifications for the maximum number of plugged tubes.

### Semi-Annual Schedule-

1. Check oil level in oil separator sight glass.
2. Check liquid line sight glass/moisture indicator.
3. Record system operating temperatures and pressures in the checklist.
4. Check programmable operating set points and safety cutouts. Assure they are correct for the application.
5. Check compressor and evaporator heater operation.
6. Check superheat on the evaporator and the economizer feed to the compressor.
7. Check condenser sub-cooling.
8. Check for dirt in the panel. Check door gasket for sealing integrity.

### Annual Schedule-

1. Sample compressor oil, check for acid, and replace if necessary.
2. Disconnect power source and lock out. Check tightness of power wiring connections.
3. Check the chiller for leaks.
4. Thoroughly clean the condenser coils.
5. Test fans for proper operation.
6. Perform operational test and return to service.
7. Remove debris from work-site.

## **Motor Starter (5 HP to Less Than 100 HP):**

### Special Instructions-

1. Schedule outage with operating personnel.
2. Follow site safety procedures and your supervisor's instructions.
3. De-energize, tag, and lock out circuit. Check for secondary sources of voltage. **DANGER – CHECK THAT CIRCUITS ARE DEAD BEFORE STARTING WORK.**

4. Record and report to your supervisor any equipment damage or deficiencies found during this maintenance task.
5. Record all test results in the component maintenance log.
6. Obtain and review manufacturer's operation and maintenance instructions.
7. All tests shall conform to the manufacturer's recommended procedures.

#### Annual Schedule-

1. Complete RCM Procedure CM-0002 (Qualitative Infrared Testing).
2. Visually inspect for broken parts, contact arcing, or any evidence of overheating.
3. Check motor name plate for current rating and controller manufacturer's recommended heater size (report discrepancy to supervisor).
4. Check line and load connections for tightness (check manufacturer's instructions for torque specifications).
5. Check heater mounting screws for tightness.
6. Check all control wiring connections for tightness.
7. On units equipped with motor reversing capacity, check mechanical interlock.
8. On units equipped with two-stage starting, check dash pots and timing controls for proper operation. Adjust as required.
9. On units equipped with variable speed starters:
10. Check tightness of connections to resistor bank.
11. Check resistor coils and plates for cracking, broken wires, mounting and signs of overheating. Clean as required.
12. Check tightness of connections to drum controller.
13. Check contacts of drum controller for arcing and overheating. Apply a thin film of lubricant to drum controller contacts and to rotating surfaces.
14. Check starter contact connections by applying a thin film of black contact grease to line and load stabs, operate contacts and check surface contact.
15. Lubricate all moving parts with proper lubricant.
16. Clean interior of cabinet.
17. Clean exterior of cabinet.
18. Energize circuit and check operation of starter and any pilot lights. Replace as required.

#### **Panel, Electronic Controls:**

#### Special Instructions-

1. Schedule outage with operating personnel.
2. Record and report equipment damage or deficiencies.
3. Record results in the equipment history log

#### Annual Inspection-

1. Clean panel interior.
2. Verify functionality of supported devices.
3. Clean ventilation filter and fan (if applicable).
4. Submit a Work Order to correct deficiencies.

#### 2 Year Inspections-

1. Replace battery where applicable.

#### **Dry Cooler:**

##### Special Instructions:

1. Perform applicable lockout/tag out steps of site safety procedures to ensure machinery will not start.
2. Schedule outage with operating personnel.
3. Use extreme caution when climbing roof access ladders.
4. Follow site safety procedures and your supervisor's instructions.
5. Record and report to your supervisor any equipment damage or deficiencies found during this maintenance task.
6. Review and follow the manufacturer's O&M instructions.

#### Annual Inspection-

1. Remove debris from air screen and clean underneath unit.
2. Pressure wash coils with coil clean solution or water as required.
3. Straighten fin tubes with fin comb.
4. Inspect controller for proper operation. Inspect electrical connections for tightness.
5. Inspect for and remove corrosion rust from unit and supporting steel, prime and paint as necessary.
6. Inspect and lubricate fan motors.
7. Cycle all valves at least two times.
8. Verify proper operation of fans.
9. Clean up work area.

