

**CITY OF FORT COLLINS
INVITATION TO BID
BID #5707
CHILLER REPLACEMENT AT LIBRARY**

Sealed bids will be received and publicly opened at the office of the Director Of Purchasing and Risk Management, PO Box 580, 215 North Mason St., 2nd floor, Fort Collins, Colorado 80524, at the time and date noted on the bid proposal and/or contract documents. If delivered, they are to be delivered to 215 North Mason Street, 2nd Floor, Fort Collins, Colorado 80524. If mailed, the address is P.O. Box 580, Fort Collins, 80522-0580.

Bid may faxed to the Purchasing Office at 970-221-6707, attention John Stephen, CPPB, Senior Buyer.

Bids must be received at the Purchasing Office prior to 3:00p.m. (our clock), May 8, 2002.

Special Instructions

All bids must be properly signed by an authorized representative of the company with the legal capacity to bind the company to the agreement. Bids may be withdrawn up to the date and hour set for closing. Once bids have been accepted by the City and closing has occurred, failure to enter into contract or honor the purchase order will be cause for removal of supplier's name from the City of Fort Collins' bidders list for a period of twelve months from the date of the opening. The City may also pursue any remedies available at law or in equity. Bid prices must be held firm for a period of forty-five (45) days after bid openings.

Submission of a bid is deemed as acceptance of all terms, conditions and specifications contained in the City's specifications initially provided to the bidder. Any proposed modification must be accepted in writing by the City prior to award of the bid.

Only bids properly received by the Purchasing Office will be accepted. All bids should be clearly identified by the bid number and bid name contained in the bid proposal.

No proposal will be accepted from, or any purchase order awarded, to any person, firm or corporation in default on any obligation to the City.

Bids must be furnished exclusive of any federal excise tax, wherever applicable.

Bidders must be properly licensed and secure necessary permits wherever applicable.

Bidders not responding to this bid will be removed from our automated vendor listing for the subject commodities.

The City may elect where applicable, to award bids on an individual item/group basis or on a total bid basis, whichever is most beneficial to the City. The City reserves the right to accept or reject any and all bids, and to waive any irregularities or informalities.

Sales prohibited/conflict of interest: no officer, employee, or member of City Council, shall have a financial interest in the sale to the City of any real or personal property, equipment, material, supplies or services where such officer or employee exercises directly or indirectly any decision-making authority concerning such sale or any supervisory authority over the services to be rendered. This rule also applies to subcontracts with the City. Soliciting or accepting any gift, gratuity, favor, entertainment, kickback or any items of monetary value from any person who has or is seeking to do business with the City of Fort Collins is prohibited.

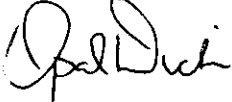
Freight terms: unless otherwise noted, all freight is F.O.B. Destination, Freight Prepaid. All freight charges must be included in prices submitted on proposal.

Discounts: any discounts allowed for prompt payment, etc., must be reflected in bid figures and not entered as separate pricing on the proposal form.

Purchasing restrictions: your authorized signature of this bid assures your firm's compliance with the City's purchasing restrictions. A copy of the resolutions are available for review in the Purchasing Office or the City Clerk's Office. Request Resolution 91-121 for cement restrictions.

Collusive or sham bids: any bid deemed to be collusive or a sham bid will be rejected and reported to authorities as such. Your authorized signature of this bid assures that such bid is genuine and is not a collusive or sham bid.

Bid results: for information regarding results for individual bids send a self-addressed, self-stamped envelope and a bid tally will be mailed to you. Bid results will be posted in our office 7 days after the bid opening.


James B. O'Neill II, CPPO, FNIGP
Director of Purchasing and Risk Management

CITY OF FORT COLLINS
BID PROPOSAL

BID #5707

BID OPENING: May 8, 2002, 3:00 p.m. (our clock)

WE HEREBY ENTER OUR BID FOR THE CITY OF FORT COLLINS' REQUIREMENTS FOR **100 TON CHILLER AT CITY OF FORT COLLINS LIBRARY**_PER THE BID INVITATION AND ANY REFERENCED SPECIFICATIONS:

The City of Fort Collins Operation Services Department is requesting bids for one 100 ton chiller to replace an existing chiller at the City of Ft. Collins Library located at 200 Peterson Street, per the attached specification. The chiller will be installed by the City under a separate contract. Bids must include shipping, FOB Destination to 800 Wood St. Fort Collins, Co. 80521.

Any technical questions regarding this bid should be directed to Steve Strickland, Project Manager, at 970-221-6536.

Any purchasing questions regarding this bid should be directed to: John Stephen, CPPB, Senior Buyer (970) 221-6775.

BID SCHEDULE

LUMP SUM TOTAL \$ _____

FIRM NAME _____
Are you a Corporation, Partnership, DBA, LLC, or PC

SIGNATURE _____

ADDRESS _____

PHONE/FAX # _____

Specifications for Replacement of 100 ton Chiller at City of Fort Collins Library
200 Peterson Street, Fort Collins, Co.

Part 1 — General

1.01 SYSTEM DESCRIPTION

Easy-to-use, microprocessor-controlled air-cooled liquid chiller utilizing two independent refrigerant circuits with minimum of two reciprocating compressors in one single package unit.

1.02 QUALITY ASSURANCE

- A. Unit shall be rated in accordance with ARI Standard 550/590-98 (U.S.A.).
- B. Unit construction shall be designed to conform to ASHRAE 15 latest revision safety standard, NEC (U.S.A.), and ASME (U.S.A.) applicable codes.
- C. Unit shall have UL (U.S.A.) or CSA (Canada) approvals (60 Hz).
- D. Unit shall be manufactured in a facility registered to ISO 9002/BS5750, Part 2 (International Standards Organization) manufacturing quality standard.
- E. Unit operation shall be fully tested at the factory.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Unit shall be delivered in packaging that will allow purchaser to store unit for as long as 6 (six) months off the job site. ***Unit will be installed this spring or next fall by City's HVAC contractor.*** Unit to be shipped to: **City of Fort Collins, 800 Wood St., Fort Collins, Co. 80521.**
- B. Unit controls shall be capable of withstanding 150 F (66 C) storage temperature in the control compartment for an indefinite period of time. Units alpha numeric diagnostic display shall be capable of withstanding direct sunlight or shall have a protective cover incorporated.
- C. Manufacturer/Supplier to provide unit startup, testing, and minimum 2 hour training to City Staff by factory authorized technician after installation by City's HVAC contractor.
Submit startup checklist with electrical ratings and readings recorded, refrigerant pressures and temperatures taken at time of startup. Record inlet and outlet water temperatures.
- D. Supplier to provide all installation, maintenance, and support documentation to City upon receipt of equipment by City of Fort Collins.
- E. Manufacturer to include a one (1) year warranty on material and workmanship from the date of startup by manufacturer's representative.

Part 2 — Products

2.01 EQUIPMENT

A. Acceptable Manufactures

1. McQuay International
2. York
3. Carrier
4. Trane

A. General:

Factory-assembled, single piece, air-cooled liquid chiller. Contained within the unit cabinet shall be all factory wiring, piping, controls, refrigerant charge (R-22), and special features required prior to field start-up.

B. Unit Cabinet:

1. Frame shall be of heavy-gage galvanized steel members.
2. Cabinet shall be galvanized steel casing with a pre-painted finish.
3. Cabinet shall be capable of withstanding 500-hour salt spray test in accordance with the ASTM B-117 standard.

C. Fans:

Condenser fans shall be direct-driven propeller type discharging air vertically upward and shall be equipped with the following features:

1. Permanently lubricated bearings.
2. Steel wire safety guards coated with PVC.
3. Statically and dynamically balanced fan blades.

D. Compressors:

1. Reciprocating semi-hermetic type only with part-winding start.
2. Each equipped with an automatically-reversible oil pump, operating oil charge, suction and discharge shutoff valves, compressor oil site glass, and an insert-type factory-sized crankcase heater to control oil dilution.
3. Each mounted on spring vibration isolators with an isolation efficiency of no less than 95%.
4. Speed shall not exceed 1750 rpm (29.2 r/s).
5. Cycles per hour per compressor shall not exceed 6.

E. Cooler:

1. Shell-and-tube type with removable heads.
2. Design shall incorporate 2 independent direct-expansion refrigerant circuits.
3. Cooler shall be tested and stamped in accordance with ASME Code for a refrigerant working side pressure of 278 psig (1916 kPa). Cooler shall have a maximum fluid-side pressure of 300 psig (2068 kPa).
4. Cooler shall have integrated heaters and associated controls for freeze protection to - 20 deg F. with associated vent and drain fittings.

F. Condenser:

1. Coil shall be air-cooled with integral subcooler, constructed of aluminum fins mechanically bonded to seamless copper tubes which are then cleaned, dehydrated, and sealed.
2. Air-cooled condenser coils shall be leak tested at 150 psig (1034 kPa) and pressure tested at 450 psig (3103 kPa).

G. Refrigeration Components:

Refrigerant circuit components shall include hot gas muffler, high side pressure switch, liquid line shutoff valves, suction and discharge shutoff valves, filter drier, moisture-indicating sight glass, stepper motor actuated electronic expansion valve

(EXV) or thermostatic expansion valve (TXV), and complete operating charge of refrigerant R-22 and compressor oil.

H. Controls, Safeties, and Diagnostics:

1. Controls:

a. Unit controls shall include the following minimum components:

- 1) Microprocessor.
- 2) Power and control circuit terminal blocks.
- 3) ON/OFF control switch.
- 4) Replaceable solid-state relay panel.
- 5) Clear language, expandable, alpha numeric diagnostic display/set point panel.
- 6) Thermistor installed to measure saturated condensing temperature, cooler saturation temperature, compressor return gas temperature, and cooler entering and leaving fluid temperatures.

b. Unit controls shall be capable of performing the following functions:

- 1) Automatic circuit lead/lag capabilities and compressor runtime balancing.
- 2) Pumpout at beginning and end of every circuit cycle.
- 3) Limiting of the chilled fluid temperature pulldown to prevent excessive demand spikes (charges) at start-up.
- 5) Seven-day time schedule.
- 6) Leaving chilled fluid temperature reset from return fluid, outdoor-air temperature, space temperature, or external reset from BAS using 0-10 volt DC.

2. Safeties:

a. Unit shall be equipped with thermistors and all necessary components in conjunction with the control system to provide the unit with the following protections:

- 1) Loss of refrigerant charge protection.
- 2) Low fluid flow detection.
- 3) Low chilled fluid temperature protection.
- 4) Low and high superheat protection (optional).
- 5) Low control voltage (to unit) protection.
- 6) High-pressure switch.
- 7) Low oil protection for each compressor circuit.
- 8) Ground current compressor protection.

b. Compressors shall be equipped with the following manual-reset type protections:

- 1) Pressure overload.
- 2) Electrical overload through the use of definite-purpose contactors and calibrated, ambient compensated, magnetic trip circuit breakers. Circuit breakers shall open all 3 phases in the event of an overload in any one phase (single-phasing condition).

c. Fan motors shall have inherent overcurrent protection.

3. Diagnostics:

a. The diagnostic display module shall be capable of indicating the safety lockout condition by displaying a code for which an explanation may be scrolled at the display. Information included for display shall be:

- 1) Compressor lockout.
- 2) Loss of charge.
- 3) Low fluid flow.
- 4) Low oil pressure.

- 5) Cooler freeze protection.
- 6) High or low suction superheat.
- 7) Thermistor malfunction.
- 8) Entering and leaving-fluid temperature.
- 9) Evaporator and condenser pressure.
- 10) Electronic expansion valve positions.
- 11) All set points.
- 12) Time of day.

- b. Display module, in conjunction with the microprocessor, must also be capable of displaying the output (results) of a service test. Service test shall verify operation of every switch, thermistor, fan, and compressor before chiller is started.

I. Operating Characteristics:

1. Unit shall be capable of starting and running fully loaded at outdoor ambient temperatures from 0° F to 125 F (-18 to 52 C), without special controls.
2. Unit shall be capable of starting up with 95 F (35 C) entering-fluid temperature to the cooler.
3. Multi-step cooling capacity control shall be accomplished through the use of unloaders and compressor staging.
4. Two refrigerant circuits shall be provided to protect against loss of total capacity.
5. Unit shall have automatic lead/lag feature to automatically alternate the lead circuit to ensure even compressor wear.

J. Motors:

1. Compressor motors shall be cooled by suction gas passing around motor windings.
2. Condenser-fan motors shall be 3-phase type with permanently lubricated bearings and Class B insulation.
3. Fan motors are totally enclosed, air-over (TEAO) type in accordance with IP-55 (50 Hz only).

K. Electrical Requirements:

1. Unit primary electrical power supply (3-phase) shall be connected to a single location.
2. Unit control power (single-phase) shall be connected to a separate entry point.
3. Unit shall be shipped with factory control and power wiring installed.

L. Special Features:

1. Hail Guard:
Unit shall be field-equipped with louvered condenser coil hail guards and installation hardware.
2. Flow Switch:
A chilled fluid flow switch shall be field-installed for low fluid flow detection.
3. Pressure Gages: Unit shall be field-equipped with suction and discharge pressure gages with manual shutoff valves.
4. Oil Pressure Switch:
Unit shall be equipped with an oil pressure safety switch to protect compressor against loss of lubrication (accessory for sizes 040-060, 070 [60 Hz]; standard on sizes 070 [50 Hz], 040-070 brine units, and 080-420).
5. Unit Control Display Access Door:
Kit contains door and necessary mounting hardware to permit control module access without opening or removing control box panels.
6. Energy Management Module:

Shall be factory- or field-installed and capable of 4 to 20 mA or 0-10 volt DC leaving fluid temperature reset or cooling set point reset

M. Options:

1. Interface chilled water temperature / supply & return to Johnson BAS using 1000 ohm sensor.
2. Extended Warranty:
Five (5) year extended compressor warranty.
3. Removable core dryers on the liquid side.
4. Low noise package.
5. Three Phase power loss with under and over voltage protection.
6. Integrated fused manual disconnect or breaker on the chiller.

O. Documentation to be included with Bid submittal:

1. Unit Model Number, with all associated unit specifications for installation (including electrical requirements, footprint detail and measurements, location of unit components – compressor, condenser, etc, and piping requirements). *All information pertaining to submitted equipment must be highlighted on associated literature.*
2. Sound data information and measurement parameters showing how testing was done.
3. Unit operational specifications showing unit performance under its design conditions.
4. Manufactures availability of unit showing unit production timeframe and shipping timeframe from date of order. Pricing of unit to include shipping/handling to Fort Collins, Co.