PART E

SPECIFICATIONS

PART E - SPECIFICATIONS

GENERAL

E1. GENERAL

E1.1 These Specifications shall apply to the Work.

E2. SERVICES

E2.1 The Contractor shall provide refrigeration services for regular maintenance, emergency service / startup and shutdown of ice plants in accordance with the requirements hereinafter specified.

E3. WORK

E3.1 Where a replacement of refrigeration/mechanical components is necessary and costs are in excess of five thousand ($5,000.00) dollars, the contractor must contact the Contract Administrator or his designate for approval before proceeding.

E3.2 Where a component or system is not immediately vital to the operation, a written cost estimate may be requested by the Contract Administrator.

E3.2.1 The City retains the right to request prices for substantial repairs from other contractors based on the information supplied by the Contractor.

E3.3 For energy conservation arenas with two or more compressors, will shut down one (1) compressor for the period of November 15 – February 15.

E3.4 The Contractor shall perform work in as continuous manner as practicable, except as otherwise authorized by the Contract Administrator.

E3.5 The decision of the Public Works Department in respect to the quality of the workmanship in the Contract works shall be final, nevertheless this provision shall not relieve the Contractor from the necessity of fulfilling all terms and provisions of the specifications.

E4. LOCATIONS

E4.1 The Work shall be performed on an "as-required" basis during the term of the Contract at various Sites within the City of Winnipeg.

E4.1.1 Work shall commence within three (3) Working Days of the placing of an order, except where otherwise agreed at the time of ordering.

E4.1.2 Work shall be completed within two (2) Working Days of commencement, except where otherwise agreed at the time of ordering.

E4.1.3 The Contractor shall promptly report any delay or change to an agreed commencement or completion date to the User.

E4.2 Work shall be performed between 8:30 a.m. and 4:30 p.m. on Business Days.

E4.3 Table B of these Specifications, lists the intended Sites, and is provided for the convenience of the Bidder only. The City reserves the right to add or delete Sites, within the boundaries of the City, or alter the type or quantity of Work to be performed at any Site as required by changes in its operations during the term of the Contract.

E5. EMERGENCY RESPONSE

E5.1 The average emergency repair is 1.5 to 2 hours it is the responsibility of the contractor to provide emergency service/repairs within this average. If this average is to be exceeded, the Contractor must contact the foreman or superintendent and provide an explanation, with an approximation of hours, to complete repairs before proceeding.

E5.2 Emergency repairs for all components of the ice plants, 24 hours/7 days per week, approximate dates of September 1 to April 30.

E5.3 Response time for emergency/call out shall be within one (1) hour of notification.

E5.4 The contractor must be capable of responding to up to three (3) emergency callouts at one time, 24 hours a day.

E5.5 The contractor must demonstrate that he/she stocks sufficient parts locally to accommodate most emergency breakdowns.

E5.6 Unavailable parts shall be available to service the equipment within twenty-four (24) hours of notification of breakdown at the expense of the contractor.

E5.7 Where replacement of refrigeration/mechanical components is necessary and costs are in excess of five thousand ($5,000.00) dollars, the Contractor must contact the Contract Administrator or the appropriate designated supervisor for approval before proceeding.

E5.8 The City retains the right to request prices for substantial repairs from other Contractors based on the information supplied by the Contractor.

E6. OVERTIME

E6.1 Overtime (evening and weekend) rates for repair work will not be allowed where the work is performed at these times:

(a) for the Contractor's convenience; or

(b) as the result of the Contractor's delay in responding to a call-out.

E7. SECURITY OF FACILITY

E7.1 The Contractor shall ensure that, at all times when his/her employees or representatives are in the facility, that it is kept secure from entry by unauthorized persons.

E8. EMPLOYEE BEHAVIOUR AND SUPERVISION

E8.1 The Contractor shall provide adequate supervision of its employees and shall ensure that all such employees behave at all times in a manner appropriate to persons in a City facility and shall without limitation ensure that employees:

(a) behave in a courteous and polite manner to City staff and other persons in the facility;

(b) do not smoke within the facility; and

(c) obey all posted safety rules.

E9. REPORTS

E9.1 The reports listed and included as samples of required documents, that are to be given to the Contract Administrator within thirty (30) Calendar days after the work is completed:

(a) Shutdown Report: and

(b) Start Up Report.

TABLE B – SITE LOCATIONS

Charles A Barbour Arena
500 Nathaniel Ave

Sargent Park Arena
1111 Wall Street

Century Arena
1377 Clarence Avenue

Civic Centre Arena
2055 Ness Avenue

Billy Mosienko Arena
709 Keewatin Street

Terry Sawchuk Arena
901 Kimberly Avenue

River East Arena
1410 Rothesay Street

St. Vital Arena
580 St. Anne's Road

Sam Southern Arena
625 Osborne Street

Vimy Arena
255 Hamilton Ave.

Eric Coy Arena
535 Oakdale Drive

Pioneer Arena
799 Logan Avenue

Old Exhibition Arena
90 Sinclair St

Roland Michener Arena
1121 Wabasha Street

Bertrand Arena
294 Bertrand Street

Maginot Arena.
910 Maginot Street

SHUTDOWN REPORT

ARENA_____

1. **Brine System** _____
   - Check oil level _____
   - Check freeze point _____
   - Expansion tank level _____
   - Check shut-off valves _____
   - Condition of gauge _____
   - Condition of thermometers _____
   - Condition of headers _____
   - Specific gravity _____
   - Chromate p.p.m. _____

2. **Under Floor Heating (if required)** _____
   - Check PH level _____
   - Check freeze point _____
   - Expansion tank level _____
   - Check shut-off valves _____
   - Condition of gauge _____
   - Condition of thermometers _____
   - Condition of headers _____

3. **Chiller and Receiver** _____
   - Check for refrigerant leaks _____
   - Refrigerant level _____
   - Liquid line drier _____
   - Liquid sight glass _____
   - Chiller insulation _____
   - Drain oil from chiller _____
   - Operation of H.P. float _____
   - Operation of float sol. valve _____

4. **Condenser** _____
   - Fan belt condition _____
   - Fan motor operation _____
   - Water pump operation _____
   - Water pressure gauge _____
   - Water spray nozzles _____
   - Condenser fan wheels _____
   - Water tanks _____
   - Condition of water reg. _____

5. **Electrical** _____
   - Condition of contractors _____
   - Condition of terminals _____
   - Indicator bulbs _____
   - Spare fuses _____
   - Operation of condition panel _____
   - Fuse puller _____

6. **General** _____
   - Pump down complete _____

7. Compressors	No. 1	No.2	No.3	No.4
Compressor Oil level				
Oil condition				
Oil pressure gauge				
Suction pressure gauge				
Discharge pressure gauge				
Discharge temp. thermometer				
Check crankcase heater				
Condition of drive belts				
Tension drive belts				
Record Hourmeter readings				

COMMENTS ON ALL OF THE ABOVE:

Company Name	Name (Signed)
Date (mm/dd/yy)	Name (Print)

START UP REPORT

ARENA_____

	Brine system	Underfloor Heat	Heat Reclaim
Expansion Tank Level			
Circ Pump Level			
Circ Pump Shaft Seal			
Circ Pump Coupling			
Pump Noise or Vibration			
Pump Amperage Rating			
Pump Amperage Reading			

Chiller and Reclaimer _____

Check for leaks _____

Refrigerant Level _____

Expansion Device _____

Liquid Drier _____

Liquid Sight Glass _____

Vessel Relief Valves _____

Condition of headers _____

Oil Drained _____Quantity _____

_____

General _____

Piping, Vibrations, Hangers _____

Refrigerant Leaks _____

Grease all Motor Bearings _____

Fuses on Hand _____

Log Books on Hand _____

Oil on Hand_____Type _____

Exhaust Fan Operation _____

Condenser _____

Purge condenser _____

Fan Motor Operation _____

Fan Belt Condition _____

Condenser Air Intakes _____

Spray Nozzle Condition _____

Water Flow at Sprays _____

Flush Out Water Tank _____

Clean Water Strainer _____

Water Pump Seal _____

Water Pump Pressure _____

Water Bleed Line _____

Water Tank Float Valve _____

Condenser Leaks _____

Condenser Eliminators _____

Compressors	**No. 1**	**No. 2**	**No. 3**	**No. 4**
Oil Changed				
Check Shaft Seal				
Drive Belt Tension				
Drive Belt Alignment				
Direct Drive Alignment				
Oil Separator Float				
Crankcase Heater				
Water Jacket Temperature				
Water Jacket Flow				
Water Jacket Solenoid				
Discharge Temperature				
Suction Pressure				
Discharge pressure				
Coil Pressure				

Water Treatment

System Voltage_____ Control_____

	RATED	ACTUAL
Compressor 1		
Compressor 2		
Compressor 3		
Compressor 4		
Brine Pump		
Condenser Pump		
Condenser Fan 1		
Condenser Fan 2		
Condenser Fan 3		
Condenser Fan 4		
Condenser Fan 5		
Under Floor Pump		
Heat Reclaim Pump		
Water Jacket Pump		

Compressor Hours: No.1_____ No. 2 _____ No. 3. _____ No. 4_____

H.P. Cutouts _____ Fan 1: In _____ Out _____ Fan: 2 In_____ Out _____

L.P. Cutouts _____ Pump 1: In _____ Out _____ Pump 2: In _____ Out _____

Oil Fail Controls _____ Operating & Safety Temp. Controls_____

Comments:_____

_____

Company Name	Name (Signed)
Date (mm/dd/yy)	Name (Print)

ARENA_____

COMPRESSOR – MAINTENANCE OVERHAUL

MYCOM Model N8A

Parts

Unit No.	Part No.	Description	Quantity
1.	RP2-34-A	Gasket, Top Head	4
2.	RP2-37-A	Gasket, Name Plate	4
3.	RP2-40	Gasket, Water Jacket Flange	8
4.	RP3-1-A	Gasket, Hand Hole Cover	2
5.	RP3-8-A	Gasket , Oil Strainer Cover	1
6.	RP1-38-A	Gasket. Cuno Filter	1
7.	RP1-30-A	"D" Ring, Oil Pump	1
8.	RP1-35-A	Gasket, Oil Pump	1
9.	RP4-3-A	Gasket, Oil Cooler Coil Shell End	1
10.	RP4-5	Gasket, Oil Cooler Coil	1
11.	RP3-28-A	Gasket, Suction Strainer Cover	1
12.	RP3-28-8A	Gasket, Suction Strainer & Unloader	1
13.	RP2-20-A	Valves Rings Suction	8
14.	RP2-21-A	Springs, Suction Valve	48
15.	RP2-27-A	Valve Rings DischargeE	8
16.	RP2-28-A1	Springs Discharge Valve	56
17.	RP2-13-A	Gasket, Cylinder Sleeve	4
18.	RP3-20-A	Gasket, Unloader Cover	2

OIL

Unit No.	Type	Unit	Quantity
1.	Compressor Refrigeration	20 Litre Pail	1

COMPRESSOR – SERVICE OVERHAUL

MYCOM Model N8A

Service – Minor Overhaul

Replace all suction valves and springs;

Replace all discharge vales and springs;

Check the condition of the valve seats;

Remove four (4) pistons and check wear limits of the piston rings;

Check con rod wear limits;

Check the condition of the cylinder sleeves;

Check the unloader mechanism;

Inspect the suction strainer screens;

Inspect the oil pump assembly;

Iinspect the cuno filter assembly;

Inspect the oil cooler coil assembly;

Inspect the condition of the water jackets.