

The Provision of Air-Conditioning Maintenance, Installation and Servicing contract

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1.0 GENERAL

1.1 Contents

This contract specification governs the responsibility for materials of construction, the method of application, as well as the scope of work for the implementation of the maintenance contract for air conditioners and refrigeration equipment at Palabora Copper.

The bidder, being an expert in his field, will accurately evaluate the needs of the individual sub-contracts by visiting the sites, reading the drawings and the technical specification and will tender accordingly.

Should there be any discrepancies or omissions in the tender information supplied by the Contract Foreman, then the bidder will immediately inform the Contract Foreman accordingly who will then endeavour to rectify the situation and will inform all other bidders to ensure that comparable bids are received. Claims for extra work payments as a result of tender omissions by the successful contractor will not be entertained.

1.2 Materials

Materials shall be of good quality and shall conform to the relevant specifications as described in Section 5.0 and the reference drawings.

1.3 Labour

An experienced workforce, under the constant supervision, of a suitably qualified site supervisor, shall carry out work in a professional manner.

1.4 Safety

Safety is a pre-requisite to carrying out work at Palabora and all relevant standards as described in Section 2.0 shall be adhered to at all times.

1.5 Documents Not Enclosed

The following documents, although not included herein, form an integral part of this technical specification. These documents are available on request.

1.5.1 The reference standards listed under Section 7.0 of this specification (items 7.1.2 through to 7.1.12)

1.5.2 Palabora Safety Standards.

1.6 Documents Enclosed

The following documents are included and must be read carefully and complied with in every respect:

1.6.1 Contractor Induction Guidelines

1.6.2 Contract Clearance.

1.7 Service Contract Conditions

The contractor's attention is specifically drawn to the following service contract conditions:

1.7.1 Compensation for Occupational Injuries and Diseases Act of 1994 (Clause 1)

1.7.2 Insurances (Clause 9):

The contractor shall submit actual proof of all insurances stipulated in clause 9 of the General Conditions for Service Contract to the Contract Inspector.

1.7.3 Compliance with the Minerals Act of 1991 (Clause 11)

1.7.4 Compliance with the Provisions of the Occupational Health And Safety Act of 1993 (Clause 12)

1.7.5 Safety (Clause 13; reinforcement of clauses 11 and 12).

All queries as well as the authority for any deviation from this technical specification shall be directed to the contract inspector R.Westwood and any queries or deviations on the commercial side to Contract Controller

2.0 SAFETY

2.1 Safety Requirement

Palabora's Safety Standards are to be strictly adhered to and it is incumbent on the bidder to be fully conversant with the following documents as they form an integral part of this technical specification:

2.1.1 Palabora's Safety Standards

2.1.2 Contractor Induction Guidelines

2.1.3 Contract Clearance.

Palabora's Purchase Request covers contractor Induction and Contract Clearance for Services

The contractor or his sub ordinates shall however not commence with any work on site prior to being inducted and contract clearance having been secured from the responsible Supervisory staff within the respective Division.

2.2 Legal requirements

2.2.1 Minerals Act, Act 50 of 1991

The bidder shall be conversant with all relevant sections of the above act and is required in terms of regulation 2.6.1 to appoint a Sub-Ordinate Manager who will be responsible for all items covered in this technical specification.

If the Sub-Ordinate Manager is absent from the work site for a period of 4 days or more then an alternative Sub Ordinate Manager will be appointed.

2.2.2 Mine Health and Safety Act, Act 29 of 1996

The bidder shall be conversant with all relevant sections of the above act and is required in terms of regulation 23.15.11 to appoint a competent person who will be responsible for all items covered in this technical specification.

2.2.3 In terms of the above clauses, the main contractor is responsible for the actions and performance of all his employees and subcontractors hired by the main contractor to carry out work as part of this contract.

It should be noted that if a new appointment should be made, the new appointee should also present himself for the relevant induction.

2.3 Specific Regulations

2.3.1 Bidders are requested to familiarise themselves with all Palabora's regulations relevant to them, specifically with regard to Permits to Work, Rigging, The Use of Cranes and Bosuns Chairs, Working at Heights, the Isolation Standard, Working in Confined Spaces, the Ten Golden Rules and the environmental requirements of the proposed contract areas.

2.3.2 The contractor shall not close up any trenches or excavations without first obtaining permission to do so from the **Contract Inspector**. Should any excavations be closed without prior approval, the contractor shall re-excavate, at his own expense, to allow inspection of the site.

2.3.3 The contractor shall inspect and service all major plants in accordance with Regulation 23.15.11 and 23.12.3. These are the clinic, chem. Lab and IST plants.

2.4 Site Management

Demarcation and housekeeping play a major role in maintaining Palabora's safety standards and it should be noted that the bidder is responsible for site demarcation, keeping a clean and tidy site and the daily removal of rubble, debris, etc.

The contractor will maintain a tidy site at all times and will, on a daily basis, remove all rubble and redundant equipment to the appropriate areas within the Palabora property. The contractor will account for all equipment and waste material removed from a site during the course of this contract.

2.5 Clothing and Equipment

Bidders must be aware that it is a statutory requirement that all personnel wear approved safety shoes, hard hats and safety glasses.

All other specialist clothing and equipment required by site conditions shall be allowed for by the contractor as deemed necessary by the proposed contract.

2.6 Fire Equipment

Bidders shall include in the tender for any fire prevention requirements as may be required due to the nature or location of work to be performed.

It is a statutory requirement to have a fire extinguisher on site where open flame cutting or welding is performed in the vicinity of conveyor belts or flammable liquid containers.

2.7 Special Safety Precautions In Force

Special safety precautions will be pointed out at the site meeting. However, the details will be taken care of during training and clearance phases listed below. This will be done as described under item 2.1 of this specification.

- Contractor Induction
- Contract Clearance
- Site Specific Job Instruction at the start.

3.0 INSPECTION AND QUALITY CONTROL

3.1 Inspection Rights

Palabora Mining Company has the right to inspect all contracts from inception to completion, whilst at the same time taking any necessary action to maintain the standards of the company.

3.2 Appointed Inspector

Robert Westwood has been appointed as the Contract Inspector and is responsible for the quality of the finished product.

4.0 TENDER PRICE SUBMISSION AND COMMERCIAL TERMS

4.1 Tax Classification

The Receiver of Revenue has ruled that this contract is classed as a taxable service and as such Value Added Tax will be charged on all components of the required work at the percentage ruling at the time of invoicing. VAT will be shown as a separate item for each component of the bid.

4.2 Pricing Layout

The scope of work is inclusive of the following, but is not necessarily limited to the following:

Line	Activity	Short Text	Unit	Price
20	3000460	Repair - Repairman	HR	
30	3000461	Repair - Assistant	HR	
40	3000462	Breakdown - Artisan	HR	
50	3000463	Breakdown - Helper	HR	
60	3000464	Major Service - Split Unit	EA	
80	3000466	Minor Service - Split Unit	EA	

100	3000468	Installation - Split Unit - Broken down to size - see below	EA	
			EA	
120	3000470	Remove/Replace/Reinstall same unit	EA	
130	3000471	Remove/Replace/Reinstall different unit	EA	
140	3000472	Normal Labour Rate - Repairman	HR	
150	3000473	Normal Labour Rate - Assistant	HR	
160	3000474	O/T Labour Rate - Repairman	HR	
170	3000475	O/T Labour Rate - Assistant	HR	
180	3000476	Sunday/P-H Labour Rate - Repairman	HR	
190	3000477	Sunday/P-H Labour Rate - Assistant	HR	
200	3000478	Price per Legal Check	EA	
210	3000479	Price per Legal Report	EA	
220	3000480	R22 - Gas per kg	KG	
230	3000481	R134 Gas per kg	KG	
240	3000541	Evaporator Coils REACTIVATE - used for Refinery cranes	EA	

Line	Activity	Short Text	Unit	Price
250	3000545	Condensor Fan Motor Wolf cranes	EA	
260	3000546	Evaporator Tank	EA	
270	3000547	Fan Motor Condensor Air cons	EA	
280	3000548	Fan Motor Fridges, watercoolers	EA	
290	3000549	Fan Motor Wolf cabins	EA	
300			EA	
310	3000551	Condensor Fan Motor Wolf girders	EA	
320	3000552	Fan Blade Air cons	EA	
330	3000553	Capacitor 40 mF	EA	
340	3000554	Contactors 25AAC3	EA	
350	3000555	Contactor 9AAC3	EA	
360	3000556	Contactor LC/D2510	EA	
370	3000557	Overload Relay	EA	
380	3000558	DO/L Relay Wolf cranes	EA	
390	3000559	Dual Pressure Switch	EA	
400	3000561	Thermostat - Fridge	EA	
410	3000562	DCL Drier 305	EA	
420	3000564	Ester Oil REACTIVATE - used for inverter air cons	EA	
430	3000565	Kulka Strips	EA	
440	3000566	Hose No 6	EA	
450	3000567	Hose No 8	EA	
460	3000568	Hose No 10	EA	
470	3000572	200mm PVC Sockets	EA	
480	3000573	200mm PVC Hose	EA	
490	3000574	20mm PVC Conduit	EA	
500	3000575	12000BTU Compressor Rotary	EA	
510	3000576	18000 Btu compressor rotary	EA	
520	3000577	24000 Btu compressor rotary	EA	
530	3000578	12000 BTU Compressor Piston	EA	
540	3000579	18000 BTU Compressor Piston	EA	
550	3000582	50000 BTU Scroll Compressor	EA	
560	3000583	1/5 HP Compressor	EA	
570	3000584	1/4 HP Compressor	EA	
580	3000585	Thermostat Water Cooler	EA	
590	3000586	Water Cooler Bottles	EA	
600	3000587	Brackets	EA	
610	3000588	A/C Filter	EA	
620	3000589	Bearings	EA	
630	3000590	Solenoid Valve	EA	
640	3000591	50MFD Capacitor	EA	
650	3000592	Gaskets	EA	
660	3000593	Bubbler	EA	
670	3000594	Water Valve	EA	
680	3001086	Piping/Armaflex ¼ - R22	M	
690	3001087	Piping/Armaflex ½ -R22	M	
700	3001088	Piping/Armaflex 3/8 - R22	M	

Line	Activity	Short Text	Unit	Price
710	3001089	Piping/Armaflex 5/8 -R22	M	
720	3001090	Trunking	M	
730	3001091	Pencil Driers	EA	
740	3001092	Remote Control	EA	
750	3001094	Circuit Boards	EA	
760	3001095	PC Board Evaporator - R22	EA	
770	3001096	PC Board Condenser - R22	EA	
780	3001097	Plug + cover	EA	
790	3001098	1½ HP Compressor	EA	
800	3001099	404A Gas per KG	KG	
810	3001100	Insert Gas per KG	KG	
820	3001101	Mineral Oil	L	
830	3001103	3 Core Wire	M	
840	3001104	5 Core Wire	M	
850	3001105	Surfix	M	
860	3001106	Cabtree 2.5mm	M	
870	3001107	Elbows 90 Degree	EA	
880	3001108	Expansion Bolts	EA	
890	3001109	Spring Bolt	EA	
900	3001110	Sista Foam	EA	
910	3001111	Consumables	EA	
1050	3001230	Supervisor Normal Time	HR	
920	3001231	Supervisor Overtime	HR	
930	3001310	Service Drain Pumps- Underground	EA	
940	3001311	Service Ice Machine	EA	
950	3001312	Air Conditioner cleaner	L	
960	3001313	Water Coler Filters - Fountain	EA	
970	3001314	Water Cooler Filters - Bottle	EA	
980	3001315	Water Cooler Taps	EA	
990	3001316	Water Cooler Thermostat	EA	
1000	3001317	Schreader Valve	EA	
1010	3001318	Charging Valve	EA	
1020	3001319	HP Switch IST	EA	
10	3001320	Relay IST	EA	
1030	3002360	Dorin Compressor	EA	
1040	3002982	ADMINISTRATOR	HR	
1060	3003430	BOARD:PC;CONTROLLER	EA	
1070	3003431	BOARD:PC;INVERTER EVAPORATOR;12000BTU	EA	
1080	3003432	BOARD:PC;INVERTER EVAPORATOR;18000BTU	EA	
1090	3003433	BOARD:PC;INVERTER EVAPORATOR;24000BTU	EA	
1100	3003434	BOARD:PC;INVTR CONDENSOR DRIVER;12000BTU	EA	
1110	3003435	BOARD:PC;INVTR CONDENSOR DRIVER;18000BTU	EA	
1120	3003436	BOARD:PC;INVTR CONDENSOR	EA	

Line	Activity	Short Text	Unit	Price
		DRIVER;24000BTU		
1130	3003437	BOARD:PC;INVTR CONDENSOR POWER;18000BTU	EA	
1140	3003438	BOARD:PC;INVTR CONDENSOR POWER;24000BTU	EA	
1150	3003439	COMPRESSOR:INVERTER;12000BTU	EA	
1160	3003440	COMPRESSOR:INVERTER;18000BTU	EA	
1170	3003441	COMPRESSOR:INVERTER;24000BTU	EA	
1180	3003442	FILTER:PC	EA	
1190	3003443	GAS;410A	KG	
1200	3003444	MOTOR:FAN;INVERTER; INDOOR;12000BTU	EA	
1210	3003445	MOTOR:FAN;INVERTER; INDOOR;18000BTU	EA	
1220	3003446	MOTOR:FAN;INVERTER; INDOOR;24000BTU	EA	
1230	3003447	MOTOR:FAN;INVERTER; OUTDOOR;12000BTU	EA	
1240	3003448	MOTOR:FAN;INVERTER; OUTDOOR;18000BTU	EA	
1250	3003449	MOTOR:FAN;INVERTER; OUTDOOR;24000BTU	EA	
1260	3003450	MOTOR:STEPPER;INVERTER;18000BTU	EA	
1270	3003451	MOTOR:STEPPER;INVERTER;24000BTU	EA	
1280	3003452	PIPING;ARM FLEX 1/2IN;HIGH PRESSURE	M	
1290	3003453	PIPING;ARM FLEX 1/4IN;HIGH PRESSURE	M	
1300	3003454	PIPING;ARM FLEX 3/4IN;HIGH PRESSURE	M	
1310	3003455	PIPING;ARM FLEX 3/8IN;HIGH PRESSURE	M	
1320	3003456	PIPING;ARM FLEX 5/8IN;HIGH PRESSURE	M	
1330		Installation - 12000 Inverter a/c	EA	
1340		Installation - 18000 Inverter a/c	EA	
1350		Installation - 24000 Inveter a/c	EA	
1360		Installation - 60000 Inverter a/c	EA	
1370		Service water cooler	EA	
1380		Service ice machine	EA	
1390		60000 Grille Front and Back	EA	
1400		60000 Air Filter	EA	
1410		Wolff Evaporator Coils	EA	

4.1 AIRCON ASSET LIST

Department:	Number of units
Smelter	
Electrical Infrastructure Rob's	
Workshop	
Marshalling Yard	
Mechanical Services	
VOD	

Department:	Number of units
Main Store BLD	
LSE Workshop	
Products and Dams	
Fire Station	
Chem Lab	
Instrumentation Department	
Long Island Trading Electronic	
Human Resources Training	
Under Ground Aircons	
Environmental / Pala Snack /	
Contractors Centre / Enginee-	
Mining Operations	
Technical Maintenance	
Clinic	
Salvage Yard / Auto Mills	
Security	
IST	
Archives Section	
Mobile Equipment Area Work	
Refinery	
Copper Processing Marketing	
Concentrator Plant Milling	
Under Ground Mine Stores	
Masana Petroleum / North	
Finance and HR	
Sandblasting Air Products	
Shaft Area	
Total a/c's	

Clinic

The clinic is comprised of a VRV system and a Fresh Air Installation

VRV	Make Model	Number of units
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Condensers

Evaporators

Fresh Air System

Outdoor unit with primary and secondary filters

Roof unit

Insulated ducting

400 x 400 square grilles recessed in ceiling

Chemical Laboratory

The Chem Lab is comprised of a VRV system and a Fresh Air Installation

VRV	Make Model	Number of units
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Condensors

Evaporators

Fresh Air System

Outdoor unit with primary and secondary filters

Roof unit

Insulated ducting

Square grilles recessed in ceiling

There are three other VRV systems on the mine 2 x Substations and 1 x Underground Office Complex

PMC Substation

VRV	Make Model	Number of units
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Condensors

Evaporators

Palamin Substation (to be installed)

VRV	Make Model	Number of units
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Condensors

Evaporators

Underground Office Complex

VRV	Make Model	Number of units
-----	------------	-----------------

Condensors

Evaporators

IS & T

Is comprised of the following:

Make Model	Number of units
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Condensors

Evaporators

The Plant Cranes are bespoke units designed and installed to fit the particular conditions to be found in the Smelter, Refinery, Anode and Grab areas.

These bespoke units are comprised of items listed in the Pricing Schedule above.

***Installation and remove/replace/reinstallation costs quoted are for back-to-back 3 Meter maximum piping.**

4.1.1 Exclusions from pricing layout

All masonry work i.e. Plinths, breaking or filling up of walls etc.

Scaffolding.

Refrigeration units themselves. I.e. a/c's, water coolers etc.

Spares

Mechanical repairs to pumps etc.

Rewind/repairs of motors and compressors.

Major installation or modification work. I.e. new unit installation on Wolff and refinery cranes.

Cleaning of Filters (Responsibility of end user)

Gas

4.2 Progress Payments

Progress payments shall be submitted by the 25th day of each month and shall represent a fair payment for percentage of work done to that day.

No payments shall be made in good faith for work not done or for materials on site.

Each payment report shall bear an official company stamp indicating the words "TAX INVOICE" and a VAT registration number.

4.3 Inspection Rights

Palabora Mining Company has the right to inspect all contracts from inception to completion, whilst at the same time taking any necessary action to maintain the standards of the company.

4.4 Appointed Inspector

Robert Westwood has been appointed as the Contract Inspector and is responsible for the quality of the finished product.

4.5 The contractor will not accept instructions to deviate from the contractual Scope of Work from anyone other than the Contract Inspector. The contractor should refer anyone attempting to issue such instructions to the Contract Inspector. Any work of this nature carried out without the express instructions of the Contract Inspector will not be paid for under the terms of this contract and will be for the account of the contractor.

4.6 Warranties and Guarantees

The contractor will guarantee his work for a period of twelve (12) months from the date of the official handover, in accordance with Palabora's General Conditions of Contract, and is reminded that any items replaced or repaired will also carry a twelve (12) months guarantee from the successful recommissioning of that item. Record of installation and repair dates of air conditioners must be held.

Exclusions

The contractor will provide all materials, components, labour and expertise necessary to honour this contract unless any exclusion is specifically stipulated under this section of the technical specification. All exclusions by the contractor shall be clearly stated in the contractor's proposal documents.

5.0 SCOPE OF WORK

5.1 Air-conditioning and Refrigeration equipment maintenance

All work will be carried out with a valid SAP purchase order only. This includes all work, breakdowns and after hours call-outs. Any work carried out without a purchase order will not be paid under any circumstances. This purchase order together with relevant invoices for work done, hours worked and spares used, must be signed off by the client/customer. This must then be given to the contracts inspector to approve who will then make a service entry. Only when a service entry has been made will payment be possible.

This contract will be valid for a period of four years from the date the contract is awarded.

The contractor will compile a complete listing of all window, split-unit and mobile-equipment air conditioners at Palabora Mining Company at the start of the contract. This list will be used to schedule the maintenance as discussed in section 5.3 and be the basis for the above six-monthly re-assessment. All units without reference numbers will be supplied with a reference number. The **Contract Inspector** will audit the list regularly.

The contractor will be responsible for the maintenance and repair of mobile-equipment air conditioners at Palabora copper. This includes air conditioners in plant areas (such as control rooms, rack rooms and crane cabins), mobile equipment (e.g. haul trucks, front end loaders and LHDs) and units underground, etc. The air-conditioner maintenance is extremely important in the harsh environment of PMC, which includes dust, acidic gases, vibration and high temperatures.

The contract amount includes labour, standby charges, overtime charges, set-up costs, transport, equipment costs, installation of ducting, electrical connections where a suitable outlet exists, consumables. Spare parts and the cost of new units are excluded in the contract amount. **The Contract Inspector** will order new units and spare parts on the relevant departmental cost codes. A list of spares that will be carried ex-stock by the contractor to ensure the minimum downtime of equipment must be supplied so that these items can be made sole supplier.

5.2 Scheduled maintenance

Scheduled maintenance is to be performed on all air conditioners according to the frequencies stipulated in 5.3.

5.3 Frequency of maintenance

Air conditioners will be maintained according to the following frequencies:

Type of air-conditioner	Minor service Frequency	Major service Frequency
Control, rack, UPS rooms, substations and other critical areas as identified.	Clean areas: monthly or *As required Dusty areas: 2 weekly or *As required	Clean areas: 6 monthly or *As required Dusty areas: 3 monthly or *As required
Central plants	Weekly Legal inspections monthly	3 monthly legal Services Annually
Mobile machinery	Every 250, 500 and 1000 hr service of machine in workshop	
Overhead cranes	Filters weekly	Monthly/Weekly

A dusty area is any area not classified as a clean area i.e.: where dust, acidic gases, high temperatures, vibration, etc. prevail.

***As required: These will typically be units which the user wants serviced more frequently due to failures and where the units are an integral part of the process and would cause delays should they fail.**

Servicing/maintenance

Where possible all major services should be done during the cooler months. With regard to all units, but in particular the main plants and critical units, careful consultation and planning should be done before any work is carried out to ensure that no plant or area is negatively affected by the units being switched off. In certain cases the major services can be done during that area's shutdown.

Minor Service on Split Units

1. Complete appropriate HIRA specific to the area.
2. Obtain Permit to Work.
3. Obtain Working at Heights Permit where appropriate.
4. Obtain Site specific induction where appropriate.
5. Liaise with PMC electrician before entering Sub Stations.
6. Isolate air conditioner, lock out, and test for power.
7. Remove filters and wash with water.
8. Wash evaporator and cover with water.
9. Check drainage tray for blockages
10. Blow out drain pipe
11. De-isolate.
12. Check operation and condition of unit.
13. Report any defects to supervisor signing job card.
14. Obtain signature for job card
15. Sign off Permit to Work.

Time allocation
½ hr

Major Service on Split Units

1. Complete appropriate HIRA specific to the area.
2. Obtain Permit to Work.
3. Obtain Working at Heights Permit where appropriate.
4. Obtain Site specific induction where appropriate.
5. Liaise with PMC electrician before entering Sub Stations.
6. Isolate air conditioner, lock out, and test for power.
7. Open unit, wash evaporator coils and drain pan with air conditioner cleaner.
8. Wash filters and cover with water.
9. Brush out evaporator fan blower.
10. Reassemble unit
11. Wash out condenser unit with air conditioner cleaner and rinse with water.
12. Test run and check gas. Top up as required.
13. De-isolate.
14. Check electrical connection and condition of unit.
15. Report any defects to supervisor signing job card.
16. Obtain signature for job card
17. Sign off Permit to Work.

Time allocation
1 hr

Major plants: Legal service in accordance with Regulation 23.15.11 and 23.12.3 Isolating of the whole plant and opening condensers/ evaporators (where applicable), cleaning out water supply pipes checking all belts, pumps, motors. Cleaning evaporators/condensers with approved solvent. Decalcifying all water lines chiller units and water supplies to the units. Where water treatment filters are fitted cleaning or replacing them. Re-commission and do an efficiency evaluation.

Major plants: Legal inspections in accordance with Regulation 23.15.11 and 23.12.3 Wash all filters, check oil levels (where applicable), check pressures, check motors fans pumps etc for noise or vibration check vibration dampers on compressors for wear. Check operation of unit

In all cases a report must be submitted in which all units or spares in the case of major plants, need or will need replacing in the near future so the relevant departments can be informed so that they will be aware and where possible can budget for the expenditure.

5.4 Refrigeration equipment

This contract also includes the refrigeration equipment. The successful contractor will be responsible for servicing all water coolers, fridges, freezers, ice machines and chiller packs. The frequency of maintenance will be as required.

5.5 Replacement of unit

Replacement takes place if a unit cannot be repaired and must be authorised by the Contract Inspector. **The Contract Inspector** will create a Purchase Requisition after level 3 approval in the dept. concerned for a new unit on the concerned department's cost code.

5.6 Spare parts

The Contract Inspector will order all new spare parts. Usable spare parts shall be removed from scrapped units to be re-used in repairing other air conditioners.

5.7 Monthly reports

The contractor must submit a monthly report to the **Contract Inspector** stating all activities or jobs executed during the previous month. All call outs, breakdowns with description of problem; work done and spares used must be stated. Details of all units serviced during the month must be included with the report.

5.8 Standby service and repairs

- A 24-hour standby service will be provided for all critical units as defined by the **Contract Inspector**.
- Where extensive repairs need to be done, the Contractor must submit a quotation to the **Contract Inspector** for his approval before work commences.
- Breakdowns and repairs will be initiated by PMC work orders and signed off by the **Contract Inspector**.
- Successful contractor must make sure that personnel on standby can be reached at all times either by pager, radio or phone. All repairs to this communication equipment are for contractor's account.

5.9 Facility

A storeroom, workshop area, office and wash bay will be available on the premises. All equipment is to be supplied by the contractor.

5.10 Computer and printer and telephone

Palabora Copper will supply a complete computer, screen, keyboard, etc. They will also allow access to the local e-mail for communication purposes. The paper, printer cartridges etc will be for the contractors account. Palabora Copper will install telephone in contractor 's office; all calls will be for the contractors account.

5.11 General requirements

- All personnel shall be competent to perform their receptive tasks according to PMC standards and to the satisfaction of the **Contract Inspector** All scrap units and parts remain the property of PMC and shall be returned to the salvage yard. Disposal form Usable spare parts from scrapped units must be removed and stored for use on other air conditioners.
- Hazard sheets of all chemicals to be submitted with tender (solvents, gas, and any other solvent).
- Environmental department to clear each hazardous substance.
- Suitable gas reclaim equipment has to be used.

5.12 Work Included

5.12.1 The work includes the furnishing of all:

- Plant tools and equipment
- Labour
- Supervision
- Technical expertise and professional services
- Materials other than that specified as to be supplied by owner.

5.12.2 Establishment at the construction site of:

- Tools and materials
- A labour force sufficient to commence and sustain service of contract
- Removal of above on completion of work.

5.12.3 Receiving, unloading, storing, unpacking and transporting all the associated and personnel as required on site.

5.12.4 Demobilisation including the dismantling and removal of all items utilised in performance of work and restoration of site to a condition compatible to that of pre-erection.

6.0 **CONDITIONS OF WORK**

The contractor shall be responsible for:

6.1.0 The contractor will be responsible to ensure that the workshop facilities used by him are maintained to the PMC standard at all times.

6.1.1 Consumables

6.1.2 All the right tools to perform the work

6.1.3 Any lifting or transporting of goods

6.1.4 All labour

6.1.5 Continuous supervision

6.1.6 Testing of each and every item

- 6.1.7 Handling, unloading, erecting, and commissioning of all the work to be done under this contract
- 6.1.8 All labelling of new units or equipment.
- 6.1.9 Any crane or flatbed for lifting and transport
- 6.1.10 All associated steel works
- 6.1.11 All new or existing equipment shall be marked/numbered to conform to the associated drawings. Labelling shall conform to the Palabora Safety Standards. It should be noted that in some cases, some of the existing numbers could be used again.
- 6.1.12 All work and dealings should be carried out in a co-operative, accessible and professional manner with an experienced workforce under constant supervision of a qualified supervisor.
- 6.1.13 Before any work can commence, the contractor must at all times have in his possession a valid/current:
- Proof of contract clearance
 - Proof that the entire current workforce has received induction training
 - Permit and permission to enter the substation
 - Permit to work.
- 6.1.14 Throughout the duration of the contract, ensure that the Subordinate Manager appointment and requirements are maintained as described under section 2.2 of this specification.
- 6.1.15 It should be noted that if a new appointment should be made, the new appointee shall also present himself for the relevant induction
- 6.1.16 If the work should be in area classified as flammable or explosive, the Contractor shall sub contract a person in possession of a valid Master Installation Certificate.
- 6.1.17 The Master Installation Certificate holder shall obtain a certificate of compliance for all equipment to be installed in areas classified as flammable or explosive.
- 6.1.18 This certificate shall be secured from the supplier at the time of purchase.
- 6.1.19 It should be noted that no payment would be made to any contractor if any labels or certificates to be issued are outstanding.
- 6.1.20 The contractor is reminded to constantly be mindful of the specifications contained in this document throughout the duration of the contract.

7.0 REFERENCE STANDARDS

All work pertaining to this project is the responsibility of the successful contractor and will be carried out in accordance with General Specifications and Palabora Safety Standards or any other relevant specifications which exceed Palabora's own specifications and good working practice:

- 7.1.1 Palabora Hygiene Standards - Numbers 10, 11 & 12
- 7.1.2 Palabora General Specifications GS2 - Site Work
- 7.1.3 Palabora General Specifications GS3 - Concrete
- 7.1.4 Palabora General Specification GS6 - Electrical
- 7.1.5 Palabora General Specifications GS8 - Piping
- 7.1.6 Palabora General Specifications GS9 - Metal Roofing And Siding
- 7.1.7 Palabora General Specifications GS10 - Masonry
- 7.1.8 Palabora General Specifications GS11 - Painting

7.1.9 Palabora General Specifications GS13 - Building Materials

7.1.10 Palabora's Safety Rules and Regulations

7.1.11 Mine, Health and Safety Act

7.1.12 Machinery and Occupational Safety Act.

8.0 ADDITIONS TO THIS SPECIFICATION

8.1 Estimated Number of Personnel and Man-hours

Contractors must provide an estimate of the number of people to be used on site and the expected man-hours for the duration of this contract.

8.2 Owner Supplied - Free Issue To Contractor If Available

- 220V Power Supply
- Potable Water.