

-Appendix C -Annex 1

**SPECIFICATIONS FOR PREVENTIVE (PM) AND CORRECTIVE
MAINTENANCE (CM) SERVICES FOR THE SYSTEMS AT COOLPORT AND
AIRFREIGHT TERMINAL 3, 5 AND 6**

1. GENERAL DESCRIPTION

- 1.1 The Contractor will provide all the necessary manpower, tools and consumable materials as described in Clause 1.9 and Clause 6. to perform all PM and CM or any repair work of all the Coolport cold room systems including all doors located at Coolport and AIRFREIGHT TERMINAL 3, 5 and 6 for three (3) year with an option to extend for another two (2) years. (See Annex 4 for Equipment Lists)
- 1.2 The works will be performed during normal office hours by qualified and skilled technician from 0830hrs to 1730hrs; Mondays to Fridays.
- 1.3 Notwithstanding the above, the Contractor will be required to work on weekends, public holidays for PM or CM jobs planned in advance, if required by SAS.
- 1.4 The Contractor is to note his implicit responsibility to provide standby team on call breakdown service basis to receive and act upon calls made after office hours, Sundays and Public Holidays. The Contractor is to ensure that (at any time) the worker(s) can easily and readily be contracted, failing which the Company reserves the right to engage another contractor to carry out the Works and all costs incurred will be recoverable from the Contractor.
- 1.5 The Contractor's Managers and Technical Officers are to be contactable at all times, 24 hours, 7 days a week. Notification will be given to the SAS for any staff who are away or expected to be away from the Works for more than 2 days. Suitable replacement must be readily available. The Contractor shall ensure that qualified technical staff working in the terminal is contactable at his/her mobile phone at all times. He/she should be able to perform standby duty after office hours.
- 1.6 The Contractor shall be able to rely on the support from its workshops/factory whenever the need arises.
- 1.7 The Contractor shall provide additional manpower to ensure satisfactory completion of routine preventive works according to the respective works program when necessary without additional cost.
- 1.8 In the event of any discrepancy with the Specifications, the more stringent requirement shall be deemed applicable. The Contractor shall bring such discrepancies to the SAS's attention and for his decision on the prevailing requirements.
- 1.9 The Contractor shall provide the Contractor's Personnel with uniforms (including shirts and trousers) acceptable to the Company and Personal Protective Equipment (PPE). All Contractors Personnel must be properly attired in the uniform while on the premises.
- 1.10 The Contractor shall provide a yearly health check all the equipment maintain under the contract and propose the recommendation to improve the existing system and compressor to be overhauled.

-Appendix C -Annex 1

2. OBJECTIVES

2.1 The contractor is to achieve the following objectives:

- a) High equipment serviceability rate ($\geq 99.0\%$)
- b) Maintain the system at operational state.
- c) Complete all critical rectifications affecting the system or operations within eight (8) hours and twenty four (24) hours for non-critical rectifications.
- d) Maintain a safe environment and safe working practices including the use of a recognised risk assessment/management system and that full asset knowledge is taken into account when undertaking risk assessments and developing method statements
- e) For critical equipment breakdown, repair needs to be rectified within 3 hours from reported breakdown acknowledged time and also maintain the number of the critical equipment's breakdown cases ≤ 24 cases per annum.
- f) The Contractor shall conduct temperature mapping exercise for all the cold rooms at Coolport and provide report on annual basis.

3. SCOPE OF WORK

3.1 PREVENTIVE MAINTENANCE (PM)

3.1.1 Service shall be available to maintain the equipments and cold room doors as per specified in the maintenance schedule in **ANNEX 2**, equipment list in **ANNEX 4**, contract and drawing attached.

3.1.2 The Contractor will also be responsible to promptly rectify, repair and make good any fault, defect, malfunction, breakdown and/or performance of the Equipment or any part thereof, which are determined to be unserviceable. The Contractor shall be at its best effort to minimise the downtime or non-availability of the Equipment and guarantees that no repair shall take more than the stipulated time in the Clause 3.2.4 from the time SAS notify the Contractor and maintain the overall serviceability rates as specified in Clause 4.

3.1.3 Contractor shall supply all consumable items free of charge. Consumable items are classified as items that are used frequently when carrying out PM, as follows and by no means exhaustive:

- a) All types of screws, bolts, nuts, washers etc.
- b) Painting brush and roller
- c) Oxygen and acetylene gas
- d) Welding set and electrode
- e) Insulation tape and cable-tie
- f) Sandpaper and emery cloth
- g) Grinder and disc
- h) Cleaning solvent (e.g. thinner, turpentine, de-greaser, contact-cleaner, anti rust remover, etc).

-Appendix C -Annex 1

- 3.1.4 The Contractor shall submit a master maintenance schedule for all the cycles as specified in Annex 3. This will serve as a guideline whereby future schedule will be based on.
- 3.1.5 Any PM Job that was deferred must be re-scheduled within the same calendar week. SAS approval must be sought for any deferment beyond this period.
- 3.1.6 The actual work on site will need to be adjusted after consultation with SAS so that the timing of equipment shutdown can be properly coordinated.
- 3.1.7 The proposed maintenance contract sum shall include all necessary testing, inspections and issuance of professional engineers certificates as required by the government authorities at any point in time.
- 3.1.8 The Contractor shall follow closely to the manufacturer's recommended list of PM checklist. (See Annex 2 for PM Checklists) The Contractor is expected to improve the manufacturer recommendations and should include other details like spare part used, man-hours taken, components to change during the next PM, etc. The PM checklist will be submitted to SAS engineer within five (5) days of the following month with the monthly report and verified and acknowledged by SAS.
- 3.1.9 The Contractor must ensure that functional tests are to be carried out on the system (on which the PM has been done) before the system is released to SAS for use.
- 3.1.10 The Contractor shall have expertise and capabilities locally in Singapore to replace PLC or Software even if complete information on existing software and program is not available. Contractor shall have experience on migrating of similar system and successfully implemented at least one project.

3.2 CORRECTIVE MAINTENANCE (CM) FOR ON-CALL BREAKDOWN SERVICE

- 3.2.1 To carry out corrective maintenance during office hours and provide on –call assistance after office hour, twenty-four (24) hours, and seven (7) days a week.
- 3.2.2 Work that can be resolved by one qualified and skilled technician, minor repair discovered during regular PM that requires less than two hours, should be considered as small corrective maintenance with no charges. Charges as stipulated in Annex 8 will only apply if second person is required for the work.
- 3.2.3 On-call breakdown services shall be available after normal working hours i.e., Mondays to Fridays including Saturdays, Sundays and Public Holidays within one (1) hours from the time of notification; payment for the emergency service/ad hoc repairs shall follow the Contract Schedule of Rates.
- 3.2.4 The contractor shall provide respond to call within fifteen (15) minutes and report to the affected site within one (1) hours from receiving a call from SAS to attend the breakdown.
- 3.2.5 Failure to response within fifteen (15) minutes from first attempted call; the contractor shall pay to SAS by way of liquidated damages the sum equivalent to S\$50.00 for each incident.
- 3.2.6 Failure to report to the affected site within one (1) hours from the breakdown call, the contractor shall pay to SAS by way of liquidated damages the sum equivalent to S\$50.00 for per incident per hour.

-Appendix C -Annex 1

- 3.2.7 The Contractor should monitor the temperature monitoring system twenty four (24) hours, and seven (7) days a week, making sure that the system is recording the temperature twenty four (24) hours, and seven (7) days a week. The contractor should activate the team to response for any temperature discrepancies within fifteen (15) minutes.
- 3.2.8 The Contractor shall provide notification or SMS monthly summary report, highlighting all the temperature differences and technical failures.
- 3.2.9 The Contractor shall provide a point of contact (on site) to update all stake holders on the update of the progress of work without demand. If needed, contractor shall work with SAS to plan for the contiguous plan in case of emergency. Failure to update such report, the contractor shall pay to SAS by way of liquidated damages the sum equivalent to S\$50.00 for per incident.
- 3.2.10 Response time is the time of complaint made to the Contractor to the time when qualified maintenance staff arrived at site. If the response time is exceeded, SAS may give the Contractor an opportunity to explain, SAS may waive whatever amount due hereunder, if it is satisfied with the Contractor's explanation.
- 3.2.11 Contractor is responsible to ensure that the system is rectified within the shortest possible time within the priorities as classified below:

Priority 1	Within eight (8) hours- Emergency, Severe, affecting operation and which pose safety hazard. Temporarily rectifications must be completed for safety reasons.
Priority 2	Within twenty-four (24) hours – Normal failure and Non critical, no impact on operation
Priority 3	Repair that require more than twenty-four (24) hours for rectifications, action plan must be submitted to SAS within twenty-four (24) hours to obtain the necessary approval include the schedule

- 3.2.12 Failure to rectify within the fault within the said periods as specified above without valid reasons that are acceptable to both parties, the contractor is liable to pay SAS by way of liquidated damages the sum equivalent to \$100.00 per day for each day of delay. The Contractor shall notify SAS if the rectification period did not meet the priorities and shall be reasonably adjusted provided the delay is due to circumstances beyond it's control, the rectification period shall be reasonably adjusted at a date to be agreed. If the rectification fails by more than two (2) weeks after the agreed dates, SAS shall be entitled to engage another qualified contractor to carry out the work without prejudice and all costs incurred shall be borne by the Contractor.
- 3.2.13 Whenever replacement work is recommended, the Contractor shall submit a quotation to SAS for approval before the actual replacement is carried out.

4. PERFORMANCE & LIQUIDATED DAMAGES FOR PREVENTATIVE MAINTENANCE (PM)

- 4.1 The Contractor's performance shall be measured by the following main indicators:
 - a) Adherence to PM schedule

-Appendix C -Annex 1

If the Contractor fails to perform the PM on equipment, SAS shall be reimbursed based on the following formula:

$$\boxed{\text{No. Of man-hours scheduled for PM (for the equipment)} \times \text{Contractor man-hour rate}}$$

- b) Equipment Monthly Serviceability Rate (SR) - => 99.0% (Appendix 9 - serviceability rate measurement schedule)

The Serviceability Rate is defined as the accumulated time the equipment is working or ready for working divided by total time and expressed in percentage (%). The duration over which this serviceability is measured shall be one calendar month. Monthly report of serviceability rate must be submitted to SAS.

Meet SAS' SR Performance Standards

$$SR = \left[1 - \frac{\text{Total breakdown hours}}{\text{Total Available hours for the systems}} \right] \times 100\%$$

- c) Monthly critical equipment Breakdown Case (BC) - =< 2 case
- d) Any flights delay reported due to the un-serviceable of the equipment's, the liquidated damages will be applied.
- e) Any offloading delay reported due to the un-serviceable of the equipment's, the liquidated damages will be applied.

In the event that the Contractor is not able to meet the serviceability rate (=>99%), no of breakdown case (=<2) and flights delay or offloading (0), the liquidated damages shall be payable as follows:

No	Equipment's Serviceability (%)	Equipment's Breakdown Repair (no of case)	Flights / Offloading Delays (no of case)	Liquidity Damages (%)
1	98.0 – 98.9	3 – 4	1	0.25
2	97.0 – 97.9	5 – 6	2	0.5
3	96.0 – 96.9	7 – 8	3	0.75
4	95.0 – 95.9	9 – 10	4	1.0
5	94.0 94.9	11 – 12	5	1.25
6	Below 94	Above 13	Above 6	1.5

4.2 Work performed during PM should be warranted for forty-eight (48) hours, the Contractor shall rectify faults due to improper PM (occurring within the forty-eight (48) hours period) at no cost to SAS. If the contractor failed to rectify the faults within a reasonable time frame, SAS reserves the right to engage a third party to rectify the fault. SAS will recharge the cost of labor and parts (if supplied by the third party contractor) to the contractor if the fault is caused by them. If the repair job is performed by SAS, the Contractor shall reimburse SAS the cost of labor and parts (if supplied by SAS).

-Appendix C -Annex 1

- 4.3 If there is a short supply of manpower, the Contractor shall reimburse SAS with the man-hours lost for future repair jobs.

5. MEETINGS

- 5.1 The Contractor and his authorized representative shall be present at regular meetings with the SAS to discuss matters relating to the Contract.

6. TOOLS & SPARE PARTS

- 6.1 The tools needed to carry out all jobs are to be provided by the Contractor. Borrowing of specialized tools from SAS can be arranged but this is subjected available. This cannot be used as an excuse for delay in the works that the Contractor is required to carry out.

7. NON-COMPLIANCE WITH INSTRUCTIONS

- 7.1 The Contractor shall comply with instructions given by the SAS to carry out urgent/important works and he shall take every safety precaution while working especially when using machines. In the event of non-compliance, SAS shall exercise its right under the Nuisance and Irregularity Clause to impose charges against the Contractor. The Contractor hereby undertakes that he shall not question or challenge the SAS's decision and/or aforesaid charge in any Court of Law or Arbitration Proceedings.

8. WEEKLY AND MONTHLY STATISTICS AND MANAGEMENT REPORTS

- 8.1 SAS may extract the necessary details of maintenance jobs (breakdowns, projects, CMs and PMs) from the Contractor to work out the required management and statistical reports.
- 8.2 The Contractor must provide statistical report on the 1st working day of the week reporting on the events & work done of the previous week.
- 8.3 The Contractor must provide a monthly report within five (5) days of each month, providing detail summary of the events and work done during the previous month. This includes the following;
- PM activities carried out
 - Components have been changed
 - Major components recommended to be changed
 - Detail PM schedule for the next month
- 8.4 The Contractor shall also provide other necessary reports (such as for safety, accidents, etc) as and when required by SATS.
- 8.5 The Contractor shall provide incident report with analysis on the root causes of the breakdown for each incident and recommended preventive actions for damage incidents or major breakdown.
- 8.6 The Contractor shall update the spare part list and quantity in stock on monthly basis. The spare part list shall include critical spare part.
- 8.7 The Contractor shall manage the stock under SAS. Any spare parts use for replacement and receive, would be proper recorded. The record shall be trackable and accountable.. The Contractor shall replace any missing stock item at no cost to us.

-Appendix C -Annex 1

9. DOCUMENTATIONS

- 9.1 The Contractor shall archive all statistical and monthly reports.
- 9.2 The Contractor shall update the equipment inventory list on yearly basis.
- 9.3 The Contractor will have to constantly update all drawings, tracings and manual to reflect latest modification or site verification of the System. The original documents and floor documents and floor plans / drawings will remain in the custody of the Company and will be produced by the Contractor as and when required by the Company
- 9.4 The Contractor shall provide soft copy of the updated the drawings, OMM and specification to incorporate all modifications and alterations to the systems including layout, on a yearly basis.
- 9.5 The Contractor shall update all existing manuals, drawings and other documentation for any modification and development done by others in the Contract Area as long as these works are handed over to them upon completion.

10. REMOVAL OF PROPERTIES

- 10.1 The Contractor shall not, and shall ensure that the Contractor's Personnel shall not, remove any property, including discarded and unused items, from the Premises without written authorization from the Company.
- 10.2 The Contractor will be liable for the cost of any property removed (regardless of how such property may have come into its possession) and will indemnify the Company in full under the agreement, against all liability resulting from such removal.

11. WARRANTY

- 11.1 The warranty period for repairs shall be at least 3 calendar months from the date of handover on replacement parts. Contractor shall undertake to provide free labor (other than existing PM team) to rectify the faults if the recurring defects are due to their poor workmanship.