NA

From: NA
Sent: Friday, September 21, 2007 5:34 PM
To: members_of_the_staff
Subject: REVISION TO MASTER SPECS - ACMV & FFAI

Our Ref: OM-SC/025

Please note that the following master specifications have been updated. The changes are overmarked in the attached specifications.

1. Air Conditioning & Mechanical Ventilation Installation (DSC & NSC)

Section 8 – Controls
Schedule 4 – Schedule of Rates

2. Fire Fighting & Alarm Installation (DSC & NSC)

Schedule 4 – Schedule of Rates



spec.pdf (317 KB)

Regards
NA

Alpha
Consulting Engineers Pte Ltd

FEEDBACK REPORT FORM

Ref No: 99-140907(S)

To: LCT From: CCG

Job No./Project: Master Specs. - ACMV - Section 8 - Controls *(where applicable)*

Source of feedback: ACMV - Schedule 4 - Rates
FFAI - Schedule 4 - Rates

Scope of Feedback: *~~Quality System/Administrative/Contractual/Technical~~/Specification/~~Others~~

Section A : Problem & Cause

① Update of obsolete IT hardware for BAS.
② Revised the schedule of rates for type unknown
③ Revised ~~and~~ schedule of rate for addressable fire alarm component.

Section B : Suggested Corrective Action

See attached amendment.

Section C: Approved Corrective Action

Approved By : _____ Date: 19/9

Section D : Action

Action By: NA

Targeted Completion: 20/9/07

Actual Completion: 20/9/07 Verified By: _____

* *Delete as appropriate*

Distribution:

- address text to show where the function point is located and its function at the plant

- reaction text to give instructions concerning corrective action, intervention to be initiated or maintenance activities etc.

8.12.2 Hardware

The digital control system shall be provided complete with the following hardware:

8.12.2.1 Communications Network

The communications network connecting the operator workstations to the Intelligent Field Stations shall be an industry standard LAN. One of the following industry standard LAN shall be considered: Ethernet, ARCHNET, Token Bus, Token Ring. The communications network shall be able to support peer-to-peer communications of all points in the system concurrently. The communications network shall communicate at a minimum speed of ~~9,600 bits~~ per second ~~(or baud).~~ Data transmission shall be in digital form through the high speed communications network. → 100 Mbits

The communications network shall support communications between Intelligent Field Stations, between Intelligent Field Stations and operator workstations and between operator workstations. The communications network shall include provisions for automatically reconfiguring itself to allow all operational equipment to perform their designated functions in the event of single or multiple failure.

The communications network shall support the point reporting resolution specified and/or communication traffic of minimum 300 Change of State messages per minute.

8.12.2.2 Basic Central Equipment

The CCS shall communicate in full English language. Point addresses shall be in alphanumeric of not less than 14 characters. Basic central equipment shall comprise one high performance real time, digital personal computers, rated with such applications, complete with keyboard and mouse, one colour graphic monitor, system printers. The work station shall provide for total keyboard-less operation as the primary operator interface. The mouse shall not require the use of more than one button for operation.

(a) Central Processor Unit

The personal computer based central processor unit with full 32 bit processor, ~~25 mHz~~ minimum clock speed, minimum of ~~4MB~~ of RAM, ~~1.2 MB diskette drive, 90 MB ESDI (Enhanced small Device Interface) hard drive with not more than 18 ms access, video graphics arrange (VGA) driver and high speed 32kB buffer cache memory to provide zero watt state performance shall be provided.~~

2.5 GHz

4 GB

DVD-RW drive, 500GB hard drive in RAID2 configuration, video graphics card shall be provided.

The central processor shall be complete with adequate memory capacity to cater for all the function points (including 30% future additional points), software programmes and system for future expansion without any changes to the central

processor or operator communication devices except for the additional memory modules and appropriate Software. Full information on computer memory capacity sizing shall be provided for the CCS proposed and such information shall be supplied at the time of tendering.

Programmes/data shall be loaded through ~~magnetic floppy disk~~ drives. A ~~battery~~ back up of minimum ~~two~~ hours shall be provided to restore the storage memory during power failure or the temporary 'shut down' time so that there shall be no loss of programme or computer data.

UPS

DVD

eight

(b) Operator Terminal

The operator terminal shall be a detached 101-keys keyboard which includes full upper/lower case ASCII keyset, a numeric keypad, dedicated cursor control keypad and a minimum of 30 programmable function keys.

(c) Colour Monitor

The colour monitor shall be of minimum 22" LCD flat wide screen type with non-glare display screen, resolution of 1680 x 1050 and 16.7 Million colours.

~~The colour monitor shall have not less than 475mm minimum diagonal dimension non glare display screen with resolution of 1024 pixel horizontal, 768 lines vertical and 16 based colours.~~ Flashing text shall be on normal and/or reverse display format. The colour monitor shall display the most recent change of state occurrence. English language command shall be provided for operation input at the Keyboard. Change of state reporting during the output of operator requested logs and summaries shall be provided and displayed on the screen.

In the event of any alarm condition, this shall override any trend logging function or log summaries and shall be displayed at the monitor and an audible alarm shall sound. In the event of multiple alarms occurring simultaneously the monitor shall output the services of the highest priority alarm first, then the next highest priority until all alarms are output. A minimum of four priority alarm groups shall be provided.

(d) Printers

The first printer shall be provided for trend log, summary, totalizer logging, recording other alarms and providing system reports. The second printer shall be an alarm printer. Each of these printer shall be identical and interchangeable.

Printers shall be of the dot matrix, tractor feed type and shall use readily available standard ISO size A4 cutsheet or 210 x 304.8mm (8.5 x 11 inch) Z-fold paper. Printers shall be identical and interchangeable with any other printer on the system so as to serve as back-up in the event of a printer being off-line. Back-up assignment shall be software assigned.

Printers shall support the graphics printing capability of the software.

Print speed shall be minimum 200 characters per second in the Near Letter Quality (NLQ) mode at 10 characters per inch.

S4.12 to S4.15 Not Used

S4.16 Noise & Vibration Control

(a) Sound Attenuators

Supply and installed price per m^3 (cubic meter).

~~Sound Attenuator~~ Type ** S$...../$m^3$

~~Sound Attenuator~~ Type ** S$...../$m^3$

~~Sound Attenuator~~ Type ** S$...../$m^3$

~~Sound Attenuator~~ Type ** S$...../$m^3$

(b) Sound Absorptive Internal Lining

Supply and installed price for in duct cost per m^2 (square meter of developed duct, excluding sheet metal outer duct).

25mm thick - 48 kg/cu.m. S$...../$m^2$

50mm thick - 48 kg/cu.m S$...../$m^2$

(c) Acoustic Enclosure

Supply and installed price per m^2
(square meter of acoustical enclosure) S$...../$m^2$

(d) Neoprene Waffle Pads

Supply and installed price for per m^2 (square meter) S$...../$m^2$

(e) Vibration Isolators

Supply and installed unit price (S$) for the following:

	Unhoused Steel Springs				Restrained Steel Springs			
Rated Deflection in mm	25	50	75	100	25	50	75	100
Capacity 0 - 50kg								
Capacity 50 - 200kg								
Capacity 200 - 500kg								
Capacity 500 - 1000kg								

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Official Stamp & Authorised Signature of Tenderer

True and positive indication shall be provided for all status points required under this Contract. Flow switches or other accepted status indication devices shall be provided as and when necessary.

(d) Status/Alarm

This shall be similar to the status indication, except that when there is a change of state, an alarm condition shall be displayed with flashing text and provided at the printout. When the point returns to normal after an alarm, a normal change of state message shall be output by the system. The status/alarm printouts and displays shall include and show the following information:

- time and date
- address text to show where the function point is located and its function at the plant
- reaction text to give instructions concerning corrective action, intervention to be initiated or maintenance activities etc.

8.12.2 Hardware

The digital control system shall be provided complete with the following hardware:

19/09/07

8.12.2.1 Communications Network

The communications network connecting the operator workstations to the Intelligent Field Stations shall be an industry standard LAN. One of the following industry standard LAN shall be considered: Ethernet, ARCHNET, Token Bus, Token Ring. The communications network shall be able to support peer-to-peer communications of all points in the system concurrently. The communications network shall communicate at a minimum speed of 100 Mbits per second. Data transmission shall be in digital form through the high speed communications network.

The communications network shall support communications between Intelligent Field Stations, between Intelligent Field Stations and operator workstations and between operator workstations. The communications network shall include provisions for automatically reconfiguring itself to allow all operational equipment to perform their designated functions in the event of single or multiple failure.

The communications network shall support the point reporting resolution specified and/or communication traffic of minimum 300 Change of State messages per minute.

19/09/07

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(a) Central Processor Unit

The personal computer based central processor unit with full 32 bit processor, 2.5 GHz minimum clock speed, minimum of 4GB of RAM, DVD-RW drive, 500 GB hard drive in RAID2 configuration, video graphics card shall be provided.

The central processor shall be complete with adequate memory capacity to cater for all the function points (including 30% future additional points), software programmes and system for future expansion without any changes to the central processor or operator communication devices except for the additional memory modules and appropriate Software. Full information on computer memory capacity sizing shall be provided for the CCS proposed and such information shall be supplied at the time of tendering.

Programmes/data shall be loaded through DVD drives. A UPS back up of minimum eight hours shall be provided to restore the storage memory during power failure or the temporary 'shut down' time so that there shall be no loss of programme or computer data.

(b) Operator Terminal

The operator terminal shall be a detached 101-keys keyboard which includes full upper/lower case ASCII keyset, a numeric keypad, dedicated cursor control keypad and a minimum of 30 programmable function keys.

(c) Colour Monitor

The colour monitor shall be of minimum 22" LCD flat wide screen type with non-glare display screen, resolution of 1680 x 1050 and 16.7 Million colours. Flashing text shall be on normal and/or reverse display format. The colour monitor shall display the most recent change of state occurrence. English language command shall be provided for operation input at the Keyboard. Change of state reporting during the output of operator requested logs and summaries shall be provided and displayed on the screen.

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19/09/07

S4.16 Noise & Vibration Control

a) Sound Attenuators

Supply and installed price per m^3 (cubic meter).

Cylindrical Type	S$...../$m^3$
Cylindrical with Pod Type	S$...../$m^3$
Rectangular Type	S$...../$m^3$
Rectangular Angled Type	S$...../$m^3$

(b) Sound Absorptive Internal Lining

Supply and installed price for in duct cost per m^2 (square meter of developed duct, excluding sheet metal outer duct).

25mm thick - 48 kg/cu.m.	S$...../$m^2$
25mm thick - 64 kg/cu.m.	S$...../$m^2$
50mm thick - 48 kg/cu.m	S$...../$m^2$
50mm thick - 64 kg/cu.m	S$...../$m^2$

(c) Acoustic Enclosure

Supply and installed price per m^2 (square meter of acoustical enclosure)	S$...../$m^2$

(d) Neoprene Waffle Pads

Supply and installed price for per m^2 (square meter)	S$...../$m^2$

(e) Vibration Isolators

Supply and installed unit price (S$) for the following:

	Unhoused Steel Springs				Restrained Steel Springs			
Rated Deflection in mm	25	50	75	100	25	50	75	100
Capacity 0 - 50kg								
Capacity 50 - 200kg								
Capacity 200 - 500kg								
Capacity 500 - 1000kg								

30/11/95

S4.17 Additional/Alteration Works During Maintenance Period for Tenants' Fitting Out

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