

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
SEMI-CONDUCTOR LABORATORY (SCL)
CHANDIGARH**

**Tender for Design, Supply, installation, testing & commissioning of Air
Washer system, Capacity - 50000 CFM**

Bids to be submitted online

Tender No.: SCL/PurUnit-4/SC202100017401 dated 07-01-2022

A. Tender Details

Tender No : **SCL/PurUnit-4/SC202100017401**

Tender Date : **07-01-2022**

Tender Classification: **GOODS**

Purchase Entity : **PurUnit-4**

Centre : **SEMI-CONDUCTOR LABORATORY (SCL)**

Procurement of Design, Supply, installation, testing & commissioning of Air Washer system, Capacity - 50000 CFM

Interested vendor may submit their bid as per the schedule in the tender,

A.1 Tender Schedule

Bid Submission Start Date : **07-01-2022 16:00**

Bid Clarification Due Date : **27-01-2022 12:30**

Bid Submission Due Date : **08-02-2022 15:00**

Bid Opening Date : **09-02-2022 15:30**

Price Bid Opening Date : **22-02-2022 15:30**

B. Tender Attachments

Technical Write-up/Drawings

Document : DOS approved Panel manufacturers List

Document : Electrical SLD

Document : Air washer layout plan

Instructions To Vendors

4. INSTRUCTIONS TO TENDERERS AND TERMS CONDITIONS OF TENDER

1. a) All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.

b) Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of non acceptance of tender, the tenderer will have to remove the samples at his own expense.

c) Approximate net and gross weight of the items offered shall be indicated in your offer if available. If dimensional details are available the same should also be indicated in your offer.

(d) Specifications: Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies. Wherever options have been called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.

2. ACCEPTANCE OF STORES:

a. The stores shall be tendered by the Contractor for inspection at such places as may be specified by the purchaser at the Contractor's own risk, expense and cost.

b. It is expressly agreed that the acceptance of the stores Contracted for, is subject to final approval by the purchaser, whose decision shall be final.

c. If, in the opinion of the purchaser, all or any of the stores do not meet the performance or quality requirements specified in the Purchase Order, they shall be rejected may be either rejected or accepted at a price to be fixed by the purchaser and his decision as to rejection and the prices to be fixed shall be final and binding on the Contractor.

d. If the whole or any part of the stores supplied are rejected in accordance with Clause No. 6 (c) above, the purchaser shall be at liberty, with or without notice to the Contractor, to purchase in the

open market at the expense of the Contractor stores meeting the necessary performance and quality Contracted for in place of those rejected, provided that either the purchase, or the agreement to purchase, from another supplier is made within six months from the date of rejection of the stores as aforesaid.

3. Bid shall be submitted on-line only complying specified schedule.

4. COUNTER TERMS AND CONDITION OF SUPPLIERS:

Where counter terms and conditions printed or cyclostyled conditions have been offered by the supplier, the same shall not be deemed to have been accepted by the Purchaser, unless specific written acceptance thereof is obtained.

5. DEFINITIONS:

- a. The term PURCHASER shall mean Semi-Conductor Laboratory, Sector-72, Mohali, Punjab-160071, under the administrative control of DOS, Government of India.
- b. The term CONTRACTOR shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's successors, representative, heirs, executors and administrators unless excluded by the Contract.
- c. The term STORES shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order including erection of plants machinery and subsequent testing, should such a condition is included in the Purchase Order. The term PURCHASE ORDER shall mean the communication signed on behalf of the Purchaser by an Officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the tender or offer of the Contractor for supply of stores or plant, machinery or equipment or part thereof.

6. DELIVERY:

- a. The time for and the date of delivery of the stores stipulated in the Purchase Order shall be deemed to be the essence of the Contract and delivery must be completed on or before the specified dates.
- b. Should the Contractor fail to deliver the stores or any consignment thereof within the period prescribed for such delivery, the purchaser shall be entitled at his option either.
 - (i) to recover from the Contractor as agreed liquidated damages and not by way of penalty, a sum of 0.5% per week of the price of any stores which the Contractor has failed to deliver as aforesaid or during which the delivery of such store may be in arrears subject to a minimum of 10%, or
 - (ii) to purchase from elsewhere, without notice to the Contractor on the account and at the risk of the Contractor, the stores not delivered or others of a similar description (where others exactly complying with the particulars, are not, in the opinion of the purchaser, readily procurable, such opinion being final) without cancelling the Contract in respect of the consignment (s) not yet due for delivery, or

(iii) to cancel the Contract or a portion thereof and if so desired to purchase or authorise the purchase of stores not so delivered or others of a similar description (where others exactly if complying with the particulars are not, in the opinion of the purchaser, readily procurable, such opinion final) at the risk and cost of the Contractor.

In the event of action being taken under sub-clause (ii) (iii) of clause above, the Contractor shall be liable for any loss which the purchaser may sustain on that account, provided that the re-purchase or if there is an agreement to repurchase then such agreement is made within six months from the date of such failure. But the Contractor shall not be entitled to any gain on such re-purchase made against default. The manner and method of such re purchase shall be at the discretion of the purchaser, whose decision shall be final. It shall not be necessary for the purchaser to serve a notice of such re purchase on the defaulting Contractor. This right shall be without prejudice to the right of the purchaser to recover damages for breach of Contract by the Contractor.

7. DESPATCH:

The Contractor is responsible for obtaining a clear receipt from the Transport Authorities specifying the goods dispatched. The consignment should be dispatched with clear Railway Receipt/Lorry Receipt. If sent in any other mode, it shall be at the risk of the Contractor. Purchaser will take no responsibility for short deliveries or wrong supply of goods when the same are booked on said to contain basis. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract.

8. ERECTION OF PLANT MACHINERY:

Wherever erection of a plant or machinery is the responsibility of the Contractor as per the terms of the Contract and in case the Contractor fails to carry out the erection as and when called upon to do so within the period specified by the purchaser, the purchaser shall have the right to get the erection done through any source of his choice. In such an event, the Contractor shall be liable to bear any additional expenditure that the purchaser is liable to incur towards erection. The Contractor shall, however, not be entitled to any gain due to such an action by the purchaser.

9.

EXTENSION OF TIME:

As soon as it is apparent that the Contract dates cannot be adhered to, an application shall be sent by the Contractor to the purchaser. If failure, on the part of the Contractor, to deliver the stores in proper time shall have arisen from any cause which the purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final) he may allow such additional time as he considers it to be justified by circumstances, of the case without prejudice to the purchaser's right to recover liquidated damages under clause 8 thereof.

10. GST and/or other duties/levies legally leviable and intended to be claimed should be distinctly shown separately in the tender.

11. In case of any difference between General Terms & Conditions enclosed and Terms & Conditions specific to this tender i.e. technical specifications & Vendor Specified Terms, Terms and Conditions specific to this tender will prevail.

12. INDEMNITY:

The Contractor shall warrant and be deemed to have warranted that all stores supplied against this Contract are free and clean of infringement of any Patent, Copyright or Trademark, and shall at all times indemnify the purchaser against all claims which may be made in respect of the stores for infringement of any right protected by Patent Registration of design or Trade mark and shall take all risk of accidents or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfillment of the contract.

13. Late tenders and delayed tenders will not be considered.

14. MODE OF PAYMENT:

Normally payment will be made for the accepted stores within 30 days from the date of receipt of the materials.

15. PACKING FORWARDING INSURANCE:

The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expense of the Contractor. The purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Contractor and the Purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.

16. PAYMENT:

Contractor's bill will be passed for payment only after the stores have been received, inspected and accepted by the Purchaser.

17. PRICES:

Tender offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variation/s.

18. RECOVERY OF SUM DUE:

Whenever any claim for the payment of, whether liquidated or not, money arising out of or under this Contract against the Contractor, the purchaser shall be entitled to recover such sum by appropriating in part or whole, the security deposited by the Contractor, if a security is taken against the Contract. In the event of the security being insufficient or if no security has been taken from the Contractor, then the

balance or the total sum recoverable as the case may be, shall be deducted from any sum then due or which at any time thereafter may become due to the Contractor under this or any other Contract with the purchaser. Should this sum be not sufficient to cover the full amount recoverable, the contractor shall pay to the purchaser on demand the remaining balance due. Similarly, if the purchaser has or makes any claim, whether liquidated or not, against the Contractor under any other Contract with the purchaser, the payment of all moneys payable under the Contract to the Contractor including the security deposit shall be withheld till such claims of the purchaser are finally adjudicated upon and paid by the Contractor.

19. REJECTED STORES:

Rejected stores will remain at destination at the Contractor's risk and responsibility. If instructions for their disposal are not received from the Contractor within a period of 14 days from the date of receipt of the advice of rejection, the purchaser or his representative has, at his discretion, the right to scrap or sell or consign the rejected stores to Contractor's address at the Contractor's entire risk and expense, freight being payable by the Contractor at actuals.

20. SECURITY FOR PURCHASE OF MATERIALS:

Successful tenderer will have to furnish in the form of a bank guarantee or any other form as called for by the purchaser towards adequate security for the materials and properties provided by the Purchaser for the due execution of the Contract.

21. TERMS CONDITIONS OF TENDER

22. TEST CERTIFICATE:

Wherever required, test certificates should be sent along with the dispatch documents.

23. The authority of the person signing the tender, if called for, should be produced.

24. The purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderers shall supply the same at the rates quoted.

25. The tenderer should supply along with his tender, the name of his bankers as well as the latest Income-Tax clearance certificate duly countersigned by the Income-Tax Officer of the Circle concerned under the seal of his office, if required by the Purchaser.

C. Bid Templates

C.1 Technical Bid - Design, Supply, installation, testing & commissioning of Air Washer system, Capacity - 50000 CFM

1. Design and Supply of Air washer unit without fan section 50000 CFM

2. Supply of recirculation centrifugal water pumps min. 50 GPM at 3 kg/cm²

Item specifications for Supply of recirculation centrifugal water pumps min. 50 GPM at 3 kg/cm²

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of recirculation centrifugal water pumps min. 50 GPM @ 3 kg/cm ² complete with IE-3 motor, base frame, foundation bolts, counter flanges, nut-bolts etc.		-		

3. Supply of SS304 ASTM A312 50NB schedule 20 pipe complete with fittings and support structure

Item specifications for Supply of SS304 ASTM A312 50NB schedule 20 pipe complete with fittings and support structure

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of SS304 ASTM A312 50NB schedule 20 pipe complete with 1.5D elbows, TEE joints, reducers, GI supporting structure, fasteners, support clamps etc.		-		

4. Supply of SS304 ASTM A312 40NB schedule 20 pipe complete with fittings and supporting structure

Item specifications for Supply of SS304 ASTM A312 40NB schedule 20 pipe complete with

fittings and supporting structure

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of SS304 ASTM A312 40NB schedule 20 pipe complete with 1.5D elbows, TEE joints, reducers, GI supporting structure, fasteners, support clamps etc.		-		

5. Supply of bourden type Pressure gauge 0–10 bar SS316, liquid filled, Ø100, 1/2” connection with SS siphon**Item specifications for Supply of bourden type Pressure gauge 0–10 bar SS316, liquid filled, Ø100, 1/2” connection with SS siphon**

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of bourden type Pressure gauge 0 à 10 bar SS316, liquid filled, diameter 100, 1/2 inch connection complete with SS siphon & isolating ball valve, SS socket, SS nipple heavy duty etc.		-		

6. Supply of SS 304/316 Ball valve threaded connection 15 NB PN10 complete with necessary fittings**Item specifications for Supply of SS 304/316 Ball valve threaded connection 15 NB PN10 complete with necessary fittings**

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of SS 304/316 Ball valve threaded connection 15 NB PN10 complete with necessary fittings such as nipples, sockets etc.		-		

7. Supply of SS 304/316 Ball valve threaded connection 25 NB PN10 complete with necessary

fittings

Item specifications for Supply of SS 304/316 Ball valve threaded connection 25 NB PN10 complete with necessary fittings

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of SS 304/316 Ball valve threaded connection 25 NB PN10 complete with necessary fittings such as nipples, sockets etc.		-		

8. Supply of SS 304/316 Ball valve threaded connection 40 NB PN10

Item specifications for Supply of SS 304/316 Ball valve threaded connection 40 NB PN10

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of SS 304/316 Ball valve threaded connection 40 NB PN10		-		

9. Supply of butterfly valve CI body and SS disk 50 NB PN10 with flanges, nut/bolts, gasket etc.

Item specifications for Supply of butterfly valve CI body and SS disk 50 NB PN10 with flanges, nut/bolts, gasket etc.

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of butterfly valve CI body and SS disk 50 NB PN10 with flanges, nut/bolts, gasket etc.		-		

10. Supply of 40 NB check valve, heavy duty PN16/ Class 150 dual plate, zero leakage type having CI body and SS internals

Item specifications for Supply of 40 NB check valve, heavy duty PN16/ Class 150 dual plate, zero leakage type having CI body and SS internals

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of 40 NB check valve, heavy duty (PN16/ Class 150) dual plate, zero leakage type having CI body and SS internals with counter flanges and nut bolts etc.		-		

11. Supply of strainer 50 NB CI/MS Body and SS mesh PN10 flange type complete with gasket, counter flanges and nut bolts etc.

Item specifications for Supply of strainer 50 NB CI/MS Body and SS mesh PN10 flange type complete with gasket, counter flanges and nut bolts etc.

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of strainer 50 NB CI/MS Body & SS mesh PN10 flange type complete with gasket, counter flanges and nut bolts etc.		-		

12. Supply of GI Class B IS1239 pipe 25 NB complete with fittings, support structure etc.

Item specifications for Supply of GI Class B IS1239 pipe 25 NB complete with fittings, support structure etc.

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of GI Class-B IS1239 pipe 25 NB complete with fittings 1.5D elbows, TEE joints, reducers, GI pipe support structure, support clamps etc.		-		

13. Supply of GI Class B IS1239 pipe 50 NB complete with fittings, support structure etc.

Item specifications for Supply of GI Class B IS1239 pipe 50 NB complete with fittings, support structure etc.

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of GI Class B IS1239 pipe 50 NB complete with fittings 1.5D elbows, TEE joints, reducers, funnel, GI pipe support structure, support clamps etc.		-		

14. Supply of fire retardant EPS insulation 20 kg/m³ complete with vapour barrier for 50NB pipe, Al cladding, accessories etc.

Item specifications for Supply of fire retardant EPS insulation 20 kg/m³ complete with vapour barrier for 50NB pipe, Al cladding, accessories etc.

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of fire retardant EPS insulation 20 kg/m ³ complete with vapour barrier for 50NB pipe, Al cladding, accessories etc.		-		

15. Supply of 1 mm thick powder coated MS sheet for blanking of the existing louvers on the existing frames using nuts and bolts, neoprene rubber gasket

Item specifications for Supply of 1 mm thick powder coated MS sheet for blanking of the existing louvers on the existing frames using nuts and bolts, neoprene rubber gasket

SI No	Specification	Value	Compliance	Offered Specification	Remark
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1	Blanking of the existing louvers using 1 mm thick powder coated MS sheet fixed on the existing frames using nuts and bolts and good quality neoprene rubber gasket. The sheet shall be painted with one coat of primer red oxide followed by two coats of synthetic enamel paint of approved shade.		-		
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16. Supply of fresh air intake all aluminium construction volume control dampers made of extruded aluminium complete with all mounting accessories

Item specifications for Supply of fresh air intake all aluminium construction volume control dampers made of extruded aluminium complete with all mounting accessories

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of fresh air intake all aluminium construction volume control dampers made of extruded aluminium complete with all mounting accessories as per detailed specifications		-		

17. Supply of wall mounted Electrical panel

Item specifications for Supply of wall mounted Electrical panel

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of wall mounted Electrical panel as per the SLD and specification attached.		-		

18. Supply of 4Cx16 Sq.mm stranded Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured 1.1 KV grade with accessories

Item specifications for Supply of 4Cx16 Sq.mm stranded Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured 1.1 KV grade with accessories

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of 4Cx16 Sq.mm stranded Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) along with termination, glanding and other accessories etc. as required.		-		

19. Supply of 3 core XLPE insulated Copper Power cables of suitable rating from Electrical Panel to Pumps complete with accessories etc. as required.

Item specifications for Supply of 3 core XLPE insulated Copper Power cables of suitable rating from Electrical Panel to Pumps complete with accessories etc. as required.

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of 3 core XLPE insulated Copper Power cables of suitable rating from Electrical Panel to Pumps complete with cable trays, supporting structure, earthing strips, termination, glanding and other accessories etc. as required.		-		

20. Supply of 63A TP N MCCB, SC rating 35kA along with rotary switch and required accessories in the existing electrical panel dummy feeder

Item specifications for Supply of 63A TP N MCCB, SC rating 35kA along with rotary switch and required accessories in the existing electrical panel dummy feeder

SI No	Specification	Value	Compliance	Offered Specification	Remark

1	Supply of 63A TP+N MCCB, SC rating 35kA along with rotary switch and other required accessories in the existing electrical panel's dummy feeder details as per the electrical specification attached.		-		
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21. I/T/C of Air washer unit without fan section 50000 CFM

Item specifications for I/T/C of Air washer unit without fan section 50000 CFM

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing and commissioning of Air washer unit (without fan section) 50000 CFM complete with casing, pre-filters, wet section, mist eliminators, drain pan, supporting structure, installation accessories etc. as per detailed specification		-		

22. I/T/C of recirculation centrifugal water pumps min. 50 GPM at 3 kg/cm²

Item specifications for I/T/C of recirculation centrifugal water pumps min. 50 GPM at 3 kg/cm²

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing and commissioning of recirculation centrifugal water pumps min. 50 GPM @ 3 kg/cm ² complete with IE-3 motor, base frame, foundation bolts, counter flanges, nut-bolts etc.		-		

23. I/T/C of SS304 ASTM A312 50NB schedule 20 pipe complete with fittings and support structure

Item specifications for I/T/C of SS304 ASTM A312 50NB schedule 20 pipe complete with fittings and support structure

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing and commissioning of SS304 ASTM A312 50NB schedule 20 pipe complete with 1.5D elbows, TEE joints, reducers, GI supporting structure, fasteners, support clamps etc.		-		

24. I/T/C of SS304 ASTM A312 40NB schedule 20 pipe complete with fittings and supporting structure

Item specifications for I/T/C of SS304 ASTM A312 40NB schedule 20 pipe complete with fittings and supporting structure

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing and commissioning of SS304 ASTM A312 40NB schedule 20 pipe complete with 1.5D elbows, TEE joints, reducers, GI supporting structure, fasteners, support clamps etc.		-		

25. I/T/C of bourden type Pressure gauge 0 – 10 bar SS316, liquid filled, diameter100, 1/2 inch connection with accessories

Item specifications for I/T/C of bourden type Pressure gauge 0 – 10 bar SS316, liquid filled, diameter100, 1/2 inch connection with accessories

SI No	Specification	Value	Compliance	Offered Specification	Remark

1	Installation, testing & commissioning of bourden type Pressure gauge 0 â 10 bar SS316, liquid filled, diameter 100, 1/2 inch connection complete with SS siphon & isolating ball valve, SS socket, SS nipple heavy duty etc.		-		
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26. I/T/C of SS 304/316 Ball valve threaded connection 15 NB PN10 complete with necessary fittings

Item specifications for I/T/C of SS 304/316 Ball valve threaded connection 15 NB PN10 complete with necessary fittings

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing & commissioning of SS 304/316 Ball valve threaded connection 15 NB PN10		-		

27. I/T/C of SS 304/316 Ball valve threaded connection 25 NB PN10 complete with necessary fittings

Item specifications for I/T/C of SS 304/316 Ball valve threaded connection 25 NB PN10 complete with necessary fittings

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing & commissioning of SS 304/316 Ball valve threaded connection 25 NB PN10 complete with necessary fittings		-		

28. I/T/C of SS 304/316 Ball valve threaded connection 40 NB PN10

Item specifications for I/T/C of SS 304/316 Ball valve threaded connection 40 NB PN10

SI No	Specification	Value	Compliance	Offered Specification	Remark

1	Installation, testing & commissioning of SS 304/316 Ball valve threaded connection 40 NB PN10		-		
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29. I/T/C of butterfly valve CI body and SS disk 50 NB PN10 with flanges, nut/bolts, gasket etc.

Item specifications for I/T/C of butterfly valve CI body and SS disk 50 NB PN10 with flanges, nut/bolts, gasket etc.

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing & commissioning of butterfly valve CI body and SS disk 50 NB PN10 with flanges, nut/bolts, gasket etc.		-		

30. I/T/C of of 40 NB check valve, heavy duty PN16/ Class 150 dual plate, zero leakage type having CI body and SS internals

Item specifications for I/T/C of of 40 NB check valve, heavy duty PN16/ Class 150 dual plate, zero leakage type having CI body and SS internals

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing & commissioning of 40 NB check valve, heavy duty (PN16/ Class 150) dual plate, zero leakage type having CI body and SS internals with counter flanges and nut bolts etc.		-		

31. I/T/C of strainer 50 NB CI/MS Body and SS mesh PN10 flange type complete with gasket, counter flanges and nut bolts etc.

Item specifications for I/T/C of strainer 50 NB CI/MS Body and SS mesh PN10 flange type complete with gasket, counter flanges and nut bolts etc.

SI No	Specification	Value	Compliance	Offered Specification	Remark

1	Installation, testing & commissioning of strainer 50 NB CI/MS Body & SS mesh PN10 flange type complete with gasket, counter flanges and nut bolts etc.		-		
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32. I/T/C of GI Class B IS1239 pipe 25 NB complete with fittings, support structure etc.

Item specifications for I/T/C of GI Class B IS1239 pipe 25 NB complete with fittings, support structure etc.

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing & commissioning of GI Class-B IS1239 pipe 25 NB complete with fittings 1.5D elbows, TEE joints, reducers, GI pipe support structure, support clamps etc.		-		

33. I/T/C of GI Class B IS1239 pipe 50 NB complete with fittings, support structure etc.

Item specifications for I/T/C of GI Class B IS1239 pipe 50 NB complete with fittings, support structure etc.

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing & commissioning of GI Class-B IS1239 pipe 50 NB complete with fittings 1.5D elbows, TEE joints, reducers, funnel, GI pipe support structure, support clamps etc.		-		

34. I/T/C of fire retardant EPS insulation 20 kg/m³ complete with vapour barrier for 50NB pipe, AI cladding, accessories etc.

Item specifications for I/T/C of fire retardant EPS insulation 20 kg/m³ complete with vapour barrier for 50NB pipe, AI cladding, accessories etc.

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing & commissioning of fire retardant EPS insulation 20 kg/m ³ complete with vapour barrier for 50NB pipe, Al cladding, accessories etc.		-		

35. Blanking of the existing louvers using 1 mm thick powder coated MS sheet on the existing frames using nuts and bolts, neoprene rubber gasket

Item specifications for Blanking of the existing louvers using 1 mm thick powder coated MS sheet on the existing frames using nuts and bolts, neoprene rubber gasket

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Blanking of the existing louvers using 1 mm thick powder coated MS sheet fixed on the existing frames using nuts and bolts and good quality neoprene rubber gasket. The sheet shall be painted with one coat of primer red oxide followed by two coats of synthetic enamel paint of approved shade.		-		

36. I/T/C of fresh air intake all aluminium construction volume control dampers made of extruded aluminium complete with all mounting accessories

Item specifications for I/T/C of fresh air intake all aluminium construction volume control dampers made of extruded aluminium complete with all mounting accessories

SI No	Specification	Value	Compliance	Offered Specification	Remark
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1	Installation, testing & commissioning of fresh air intake all aluminium construction volume control dampers made of extruded aluminium complete with all mounting accessories as per detailed specifications		-		
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37. I/T/C of of wall mounted Electrical panel as above as per the standard electrical practices.

Item specifications for I/T/C of of wall mounted Electrical panel as above as per the standard electrical practices.

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation testing and commissioning of of wall mounted Electrical panel as above as per the standard electrical practices.		-		

38. I/T/C of 4Cx16 Sq.mm stranded Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured 1.1 KV grade with accessories

Item specifications for I/T/C of 4Cx16 Sq.mm stranded Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured 1.1 KV grade with accessories

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing & commissioning of 4Cx16 Sq.mm stranded Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured and overall FRLS PVC outer sheathed 1.1 KV grade, as per IS 7098 (Part I) along with termination, glanding and other accessories etc. as required.		-		

39. I/T/C of of 3 core XLPE insulated Copper Power cables of suitable rating from Electrical

Panel to Pumps complete with accessories etc. as required.

Item specifications for I/T/C of of 3 core XLPE insulated Copper Power cables of suitable rating from Electrical Panel to Pumps complete with accessories etc. as required.

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing & commissioning of 3 core XLPE insulated Power cables (Copper) of suitable rating from Electrical Panel to Pumps complete with cable trays, supporting structure, earthing strips, termination, glanding and other accessories etc. as required.		-		

40. I/T/C of 63A TP N MCCB, SC rating 35kA along with rotary switch and required accessories in the existing electrical panel dummy feeder

Item specifications for I/T/C of 63A TP N MCCB, SC rating 35kA along with rotary switch and required accessories in the existing electrical panel dummy feeder

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing & commissioning of 63A TP+N MCCB, SC rating 35kA along with rotary switch and other required accessories in the existing electrical panel's dummy feeder details as per specification attached.		-		

41. Removal of existing MS louver in 8 inch MAU, finishing of wall, shifting removed louver to scrapyard

Item specifications for Removal of existing MS louver in 8 inch MAU, finishing of wall, shifting removed louver to scrapyard

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Removal of existing MS louver in 8" MAU, finishing of wall after removal and shifting removed MS louver to SCL's scrapyard as per detailed specifications		-		

Common Specifications (Applicable for all items)

SI No	Specification	Value	Compliance	Offered Specification	Remark
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1	INTENT OF SPECIFICATIONS:	<p>The scope of work covers Design, Supply, Installation, Testing, Commissioning at site and handing over of Air Washer System to SCL comprising of water recirculation centrifugal pumps, pre-filters, wet section, mist eliminators, water piping, fittings and associated electrical panel, Instruments, power & control cables etc. meeting the technical specifications given below. The scope of work shall include inspection, packing, loading, dispatching, transit, unloading & storage at site, assembly, pre-commissioning checks, installation, commissioning and complete handing over of the Air Washer (AW) System at SCL. The selected vendor shall carry out the detailed design of the air washer and shall furnish the design data/ details of complete entire air washer system for perusal and approval of SCL. SCL shall review the detailed engineering drawings and comments, if any, shall be incorporated in the same by the vendor. The approved drawings (to be called Approved for Construction or AFC drawings) shall be the drawings for implementation by the vendor. The vendor shall demonstrate performance and quality parameters of the equipment/systems etc. installed under the contract at the rated</p>	Yes / No / Explain		
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		capacity/as per design.			
2	Technical specification of Air Washer (1 No.) having capacity of 50000 cfm	The Air Washer (AW), cross-flow type, unit is to be installed at suction side of the existing 8-inch Make-up Air handling unit (MAU) catering to the fab facility at SCL. The AW unit is to be located outside the MAU Plant room and directly exposed to ambient and shall be designed accordingly for continuous operation throughout the year. The AW unit shall be selected for a face velocity not greater than 250 fpm to keep the static pressure loss to minimum across the AW unit. The designer shall ensure to select all the components/parts of the unit to meet the performance parameters during peak load conditions at Chandigarh. All work shall be performed in accordance with the best engineering practice and shall be of highest quality workmanship.	Yes / No / Explain		

3	Detailed Specification 1. Pre-filter section:	The air shall enter the AW unit through pre-filter section only. The filters shall have a minimum efficiency of 45% down to 10µm (G4) constructed with GI- 16 gauge 50mm frame, sandwiched synthetic non woven filtration media stitched with HDPE mesh on both sides and aluminium wire mesh on one side, corrugated GI/Al spacers. Each filter shall have a maximum initial pressure drop (IPD) of 3 – 5 mm of WC at flow rate of 2000 CFM. The filters shall be constructed as box type having frame size 610mm (L) X 610mm (H) X 100mm (D) which shall house in an aluminium structure filter frame. These filters shall be air and water cleanable. All the four sides shall be sealed with transparent epoxy.	Yes / No / Explain		
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4	<p>Detailed Specification 2. Wet section: i) Cellulose pads and water distribution network:</p>	<p>The cellulose pads shall have an exclusive cross fluted configuration specially engineered for direct evaporation and humidification of air. Special cellulose paper impregnated with insoluble antiriot salts, rigidifying saturants and wetting agents shall be used for the manufacturing of these pads. The thickness of the pads shall be suitably selected, in any case not less than 200mm, for a minimum saturation efficiency of 90% for the designed air flow. The face velocity shall not exceed 250 ft/min across the pads.</p> <p>All supporting structure for cellulose pads and water distribution channel shall be constructed with SS304 and designed to accommodate the pads in tiers such that the height of each tier shall not exceed 1.5m. Each tier of cellulose pads shall have its individual recirculation water inlet connection (flanged), distribution piping channel and a collection tray (SS304) at bottom for collecting the water after being sprayed over the pads. The collected water is then routed from collection tray of each tier to the main drain pan cum recirculation tank. The water distribution network inside the air washer shall be designed such that the re-circulated water gets sprayed over the complete arrangement of cellulose pads.</p>	Yes / No / Explain		
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		<p>The entire water piping inside the air washer shall be of SS304 Sch. 20 as per ASTM A312 TP 304. All the supporting structure inside the air washer shall be of SS304. Adequate space, not less than 700mm, shall be provided between mist eliminators and cellulose pads assembly for maintenance of water spray assembly and cellulose pads.</p>			
5	<p>Detailed Specification 2. Wet section: ii) Mist eliminators:</p>	<p>The air shall exit the unit through suitably selected PVC mist eliminators (minimum four pass) to knock down the fine water droplets carried by air leaving cellulose pads. The mist eliminators shall be located sufficiently away from the cellulose pad arrangement to maximise its separation efficiency. The mist eliminators shall be suitably selected to keep the pressure drop across them at minimum for designed air flow.</p>	Yes / No / Explain		

6	<p>Detailed Specification 2. Wet section: iii) Drain Pan cum recirculation tank:</p>	<p>The entire tank shall be constructed with minimum 18 gauge SS304 sheet metal and designed in capacity suitable for the efficient operation of air washer unit. The reinforcement stiffeners shall be used to avoid the bulging at any cross section of the tank during operation. The tank will be hydro tested under gravity (without pressurising externally) at site (SCL) after installation for any leakage. However, the vendor is advised to perform the hydro test at his facility before dispatch to avoid the inconvenience during the installation. An insulated GI class-B pipe, 50 NB, is to be laid from the existing 8" MAU to air washer sump for using the condensate as make up water. The tank shall have a main outlet connection to recirculation pumps, drain, 25 NB make-up water with float valve arrangement, quick fill, overflow, 50 NB make-up water connection for condensate from MAU etc. All the connections shall be in SS304 construction and flanged type. The drain shall be installed with a bleed valve connection of suitable size, not less than 15NB in any case, to keep the salt concentration level in recirculation water within permissible range.</p>	<p>Yes / No / Explain</p>		
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7	Detailed Specification 3. Outer casing:	The casing of the Air Washer unit shall be constructed with single skin 18 gauge SS304 sheet with necessary reinforcement (outside) of GI angles/channels. The entire assembly of air washer casing shall be air tight without any air gaps/ voids at corners or joints and air shall only enter to the unit through pre-filters. All the panels shall be fixed to the frame properly air tight using high quality Neoprene gaskets as per IS B16.21 standard and minor leakages, if any, shall be sealed with silicon sealant.	Yes / No / Explain		
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8	Detailed Specification 4. Water recirculation pumps:	<p>The capacity and head of recirculation water pumps shall be suitably selected, but not less than 50GPM @ 3kg/cm², to meet the required water flow rate for designed performance of the air washer unit at highest load in peak ambient conditions in Chandigarh. The pumps shall be horizontal end suction top discharge type equipped with TEFC squirrel cage IE-3 induction motor, suitable for continuous duty, stainless steel impeller and body. The pumps should be installed on painted MS base frame grouted on civil foundation. The civil foundations for pumps will be in scope of SCL, however, the painted MS base frame for pumps, necessary foundation bolts, MS high tension nut-bolts for fixing pumps to base frame and grouting of foundation bolts for fixing base frame shall be in scope of vendor. The installation of pumps on foundation, pumps shall be covered with suitable canopy (with proper ventilation) made of polycarbonate sheet (10mm thick) to protect the pump's motor from rain/ sun. The pump curves with other operating parameters shall be submitted by the vendor for approval from SCL. A cast iron strainer with SS316 mesh in the suction of each pump, a pressure gauge & NRV at discharge of each pump must be</p>	Yes / No / Explain		
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		installed. Each pump shall be isolated with main piping by isolation valves at suction as well as at discharge connections.			
9	Detailed Specification 5. Recirculation water piping:	The water recirculation piping shall be complete with all necessary fittings, valves, strainers, flanges, nuts, bolts, washers, sockets, nipples, dead plugs, neoprene gasket and supporting structure etc.. All the piping shall be of SS304 Sch. 20 welded construction as per ASTM A312 TP304, however, the main connections to the air washer unit shall be flanged type. The piping outside the air washer shall be supported properly using GI structure such that no piping weight would come on any of the connected equipments i.e., air washer unit, recirculation water pumps etc. All the GI structure shall be painted with one coat of red oxide primer followed by two coats of synthetic enamel paint of approved shade.	Yes / No / Explain		

10	<p>Detailed Specification</p> <p>5. Recirculation water piping: Other considerations</p>	<p>a.A provision shall be provided for the maintenance of recirculation water spray system, drain pan cum recirculation tank, cellulose pads, mist eliminators etc.</p> <p>b.The drain/overflow of the unit shall be taken to a drain point near to the air washer unit using GI class –B piping as per IS 1239.</p> <p>c.Provision shall be provided to reclaim the condensate from 8” MAU and using it as make-up water for air washer unit. The condensate carrying GI pipe, size 50NB, from MAU shall be insulated using fire retardant Expanded Polystyrene of minimum density of 20 kg/m³. A polythene sheet shall be used over the EPS insulation as vapour barrier. The insulation shall be protected by a 24 gauge GI cladding sheet over it. A separate make-up water connection of suitable size, not less than 25NB, from quick-fill line (50NB) shall also be provided to air washer sump.</p> <p>d.The installation shall be such that the water level in the sump shall be sufficiently above the pumps to avoid cavitations or running them dry.</p> <p>e.The drain (50NB) shall be sieved properly to avoid the entrance of reptiles such as snakes etc.</p> <p>f.The drain pan shall be slopped towards the main water outlet and drain connections.</p> <p>g.All the structure inside the air washer will be of SS304 construction while the</p>	Yes / No / Explain		
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		outside structure will be of GI construction.			
11	Detailed Specification 6. Blanking/ removal of existing MS louvers:	<p>At present, MS louvers of size 4.5m x 4.5m (2No.) and 1.5m x 1.5m (2No.) are provided in the building wall of existing MAU. One of these louvers of size 4.5m x 4.5m shall be blanked off using 1mm powder coated MS sheet. All gaps/leakages shall be properly closed to avoid ingress of air into MAU directly. The powder coated MS sheet shall be fixed on this louver's MS frames using nuts and bolts and good quality neoprene rubber gasket.</p> <p>The remaining one louver of size 4.5m x 4.5m at the front of proposed location of air washer shall be removed from existing wall of MAU. The scope of work includes the removal of this MS louver from wall, making/ modification of wall opening in good finish of the jambs and sills with brick/plaster in size matching the face size of air washer unit as per requirement and transport the removed MS louver to SCL's scrap yard at a distance of 500m from the installation site. All required material for this work such as bricks, cement, sand, crushed stones, lifting, shifting arrangements etc. shall be in scope of vendor.</p>	Yes / No / Explain		

12	Detailed Specification 7. Fresh Air louver with dampers:	The MAU room has two wall openings of size 1.5m x 1.5m for fresh air inlet. Wall mounted fresh air intake all aluminium construction volume control dampers of suitable size made of extruded aluminium complete with all required mounting accessories shall be installed in these wall openings for fresh air intake. The dampers shall be installed with proper neoprene gaskets and the minor gaps between wall and dampers shall be sealed with silicon sealant.	Yes / No / Explain		
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13	Detailed Specification 8. Electrical:	<p>Supply, installation, testing and commissioning of indoor type, MCC panel located in the existing 8" MAU room, front operated cubicle type, suitable for operation on 415V, 3 phase, 4 wire, 50Hz AC supply system and to withstand a short circuit level of 35kA rms symmetrical. The panel shall be fabricated out of 14 SWG CRCA (2mm) sheet steel with necessary anti-corrosive treatment duly powder coated and shall be dust and vermin proof construction suitable for installation on with the following facilities:-</p> <ul style="list-style-type: none"> -Panel shall be wall mounted with support structure made of angle/channel of suitable size. -Suitable for Local/Remote operation as per the attached SLD. -Metering:- (0-500V) digital Voltmeter, digital 3-phase Ammeter (0-63A) with cast resin type CTs. -Incoming 63 A TP+N MCCB of suitable current rating with over current, S/C and Earth fault protection. -BusBar:-FP insulated Aluminium Bus bar of suitable current rating having high conductivity electrical grade suitable to withstand symmetrical fault level of 35 kA. Neutral bus bar shall be of 100% capacity. -Outgoing:- <ul style="list-style-type: none"> a) 2 Nos. of DOL/Star-Delta starter with TP SFU matching with the pump starter rating. <p>DOL/Star-Delta Starter: Consisting of</p>	Yes / No / Explain	
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suitable rating DOL/Star-Delta starters for booster pump consisting of single phase preventer, overload relay, AC3 duty air break contactor with 2NO-2NC with auxiliary contacts for On/OFF push buttons, LED indicators for On/OFF/TRIP, emergency stop push button with all interconnections.

b) 1 No. 32A TPN SFU.

The power connections for the new electrical panel for pumps shall be taken from existing electrical panel located in 8" MAU room (approx. 30 m away from proposed new electrical panel) and shall be in the scope of vendor. The pumps shall have the provision of Local/Remote operation, with emergency stop push button on the panel for each pump. The vendor shall select the 4 core 16 Sq. mm XLPE insulated stranded aluminum power cable suitable for the incomer of the electrical panel to be provided by the vendor. Outgoing cables catering to the pumps shall be XLPE insulated Copper cable matching with the pump rating. The electrical panel shall be located inside the 8 inch MAU room. Earthing of the electrical panel, pumps/motor, cable tray, cable tie, clamps etc. shall be in the vendor scope. Vendor shall extend the GI strip/wire of suitable

size from the existing earthing.

Scope also includes turning a dummy feeder in the existing electrical panel into a functional one by supplying and installing TP+N 63A MCCB (SC rating 35kA) with rotary switch, RYB LED indication, ON OFF Trip LED indication along with all other required accessories e.g. suitable rating PVC/XLPE insulated flexible Cu cables for connecting the MCCB to the Bus Bars, nut-bolts, washer etc. for smooth installation. Bus Bars of the existing panel shall be punched, if so required, for connecting the MCCB.

14	GENERAL TERMS AND CONDITIONS ELIGIBILITY CRITERIA:	<p>Bidders meeting the below mentioned eligibility criteria are eligible to participate in the tender.</p> <p>To assess eligibility for the work, the bidders shall furnish copy (ies) of the Purchase Order(s) of their earlier completed works and their completion certificate(s), evidencing satisfactory completion of similar works issued by the respective clients/organizations.</p> <p>-Bidder should have successfully completed at-least one (01) similar work involving supply, installation and commissioning of Air washer system of total capacity not less than 40000 CFM consisting of air washer(s), centrifugal water pumps, water piping, associated electrical work etc. during last seven years.</p> <p>OR</p> <p>-Bidder should have successfully completed at-least two (02) similar works involving supply, installation and commissioning of Air washer system of total capacity not less than 30000 CFM consisting of air washer(s), centrifugal water pumps, water piping, associated electrical work etc. during last seven years.</p>	Yes / No / Explain		
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15	GENERAL TERMS AND CONDITIONS ACCEPTANCE PROCEDURE:	<p>The Performance & Quality parameters of the entire installation as mentioned in the technical specifications shall be monitored for at least 7 days after commissioning for satisfactory performance upon which SCL shall give its acceptance. Deviation in any of the specified parameters will not be acceptable and it shall be the responsibility of the vendor to take corrective action/improvements/modifications, as required, in the installed system to meet the specified parameters and the system will be put back to trial run again for 7 days before the acceptance is given. On successful completion of the entire work, the contractor shall provide 'As Built' drawings for all the systems executed under the contract. Three (03) sets of hard copies and one (01) set in soft copy (CD/pen drive) in Auto-CAD format shall be provided to SCL for its record and reference. Contractor shall also provide instruction / Operation manual(s) and maintenance manuals for the all equipment.</p>	Yes / No / Explain		
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16	GENERAL TERMS AND CONDITIONS WARRANTY :	Warranty period will commence from the date of acceptance of the entire installation covered under the scope of work by SCL. The warranty period shall be 24 months to be reckoned from date of acceptance of the work as defined above. During the warranty period, the contractor shall provide four (04) numbers of quarterly preventive maintenance visits per year for the complete system and breakdown visits as required. All the consumables, spares, parts, tools, tackles, required manpower etc. shall be covered under scope of the vendor during the warranty period.	Yes / No / Explain		
17	GENERAL TERMS AND CONDITIONS COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CAMC):	SCL may enter into Comprehensive Annual Maintenance Contract (CAMC) for the system covered under the scope of this tender for a period of Five (05) years after expiry of the Warranty period of two (02) years. Vendor shall provide the yearly CAMC charge for five (05) years. During the CAMC, the contractor shall provide four (04) numbers of quarterly preventive maintenance visits per year for each of the tendered system. All the break downs shall be covered under the scope of the vendor. All the consumables, spares, tools, tackles, required manpower etc. shall be covered under scope of the vendor.	Yes / No / Explain		

18	GENERAL TERMS AND CONDITIONS COMPLETION PERIOD:	The time period for the completion of the entire work is four (04) months from 7th day of release of Purchase order by SCL.	Yes / No / Explain		
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19	OTHER TERMS AND CONDITIONS: a)	<p>1.Factory test certificates of the material / equipment/systems/machines supplied shall be furnished by the vendor.</p> <p>2.Vendor to engage the electrical contractor possessing valid 'Class A' electrical contractor license issued by state/central authority for execution of the electrical works.</p> <p>3.The machines/equipment/s systems etc. shall be adequately isolated against transmission of vibrations to the building structure as per manufacturer recommendation.</p> <p>4.All the sensors, gauges and energy meters etc. shall be calibrated and shall be traceable to accredited test house standards.</p> <p>5.Necessary foundation bolts, nuts, leveling-screws vibration pads etc. wherever required, for mounting the machines, shall be provided by the vendor as per manufacturer's drawings/recommendations.</p> <p>6.Technical specifications, design data, leaflets and general layout of the equipments showing their overall dimensions shall be provided in duplicate along with the technical bid.</p> <p>7.The Vendor shall impart on-site hands-on training to SCL personnel without any extra cost, on operations, troubleshooting and preventive maintenance of the equipment / systems</p>	Yes / No / Explain		
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		<p>supplied and installed under the contract, during installation and commissioning.</p> <p>8. Vendor to provide certificate showing the date of manufacture of the machine and certifying that the machine being supplied is new and not a used/old/second hand/ refurbished /reconditioned machine.</p> <p>9. The vendor should satisfy himself for the adequacy/completeness of the system and shall include any other item/s required for safe and satisfactory functioning.</p> <p>10. Detailed manuals incorporating all technical details, spare part lists, troubleshooting, mechanical & electrical drawings, wiring-diagrams etc. shall be provided by the vendor.</p>			
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20	OTHER TERMS AND CONDITIONS: b)	<p>11. Work shall be carried out in a co-ordinated manner by the vendor. For final tie-in of the vendor's installations with SCL's existing running system, vendor shall give prior (say minimum 10 days) intimation to SCL for shutdown of that system to facilitate the tie-in.</p> <p>12. Payment for the work shall be made on the basis of actual work done and the accepted rates for various items in the Bill of Quantities.</p> <p>13. For measurement of piping, installed straight length including fittings (bends, flanges, Tee, reducers) etc. shall be considered and the payment shall be made as per unit rates based upon the measurements of actual work done. Valves shall be counted separately and paid at the agreed unit rates.</p> <p>14. All the required tools, tackles, scaffoldings, man power etc. is in scope of the vendor.</p> <p>15. Vendor shall ensure adherence to safe construction practices which shall include use of Personnel Protection Equipment (PPE) by their workmen, supervisors etc. deployed on the work. PPE viz., safety helmets, safety shoes, harnesses, safety glasses, gloves etc. shall be provided by the vendor for the safety of all the personnel at the site of work. Work shall be executed as per the</p>	Yes / No / Explain		
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ISRO contractor safety Manual available at ISRO site
www.isro.gov.in.

16. Vendor shall take adequate measures to ensure that no damage or loss is caused to SCL's buildings, equipment and personnel due to any activity carried out by the vendor relating to the performance of the Contract.

17. All materials and equipment shall conform to the relevant Indian Standards and shall be of the approved make and design. Makes shall be strictly in conformity with the Recommended Makes/Manufacturers' listed in the Tender Document.

18. Electricity required for installation shall be provided by SCL at no charge basis to the vendor. For this, electricity connection will be provided at single point and further distribution shall be the vendor's responsibility. Vendor shall provide wattage of all the electrical loads required for installation and install all safety and protection devices viz., MCB/MCCB/ELCB/RCB etc. as per the applicable electricity rules.

19. Vendor shall be required to follow the security procedures in vogue at SCL for the movement of vendor's personnel, materials etc. into/from SCL premises.

20. On successful completion of the entire work, the Contractor shall provide 'As Built'

		<p>drawings for all the Systems executed under the Contract. Three (03) sets of hard copies and one (01) set in soft copy (Pen Drive/CD/DVD) in Auto-CAD and PDF format shall be provided to SCL for its record and reference. Contractor shall also provide instruction / Operation manual(s), maintenance manuals, drawings, data, catalogues etc. for the all equipment/systems installed under this project.</p>			
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21	LIST OF APPROVED MAKES	<p>1MS/GI pipe: Tata/Jindal</p> <p>2Stainless steel pipe: Jindal/Tata/Nica/Ratna mani</p> <p>3Ball valves/ butterfly valves: L&T/ Avcon/Microfinish</p> <p>4Check valve/NRV: L&T/ Advance/ Intervalve</p> <p>5Water circulation pumps: Grundfos/ Johnson/ Armstrong</p> <p>6GI/Stainless steel sheet: Sail/Jindal/Tata</p> <p>710µm Pre-filters: Trigama/Aaf/Spectrum /Afi/Fmi</p> <p>8Water strainer: Sant/ Leader</p> <p>9Anchor fasteners: Hilti/ Fisher</p> <p>10Synthetic enamel paint/ Primer red oxide: Asian/ Burger</p> <p>11Pressure and temperature gauges: Warree/Ashcroft/Bells</p> <p>12Gasket: Champion</p> <p>13Insulation: Beardsell / styrene Packing/UP Twiga/ Armaflex / Trocellen / Paramount-XPE</p> <p>14Nut/Bolts: Unbrako/Bossard/TVS</p> <p>15Energy Meters: Konzerv/ L&T/ AE</p> <p>16Push Buttons: Siemens/Schneider/ Teknic</p> <p>17MCCB: Siemens/Schneider/ Legrand/ L&T</p> <p>18Contactors: Schneider/Siemens/ Legrand</p> <p>19Induction Motor: Siemens/ABB/Crompton/Bharat Bijlee/OEM make</p> <p>20Electrical cables: Finolex/Havells/KEI/Polycab/RPG/CCI</p> <p>21MCC Panel: As per approved panel manufacturer list attached with</p>	Yes / No / Explain		
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Supporting Documents required from Vendor

1. Copies of Purchase Orders/Work orders and their Completion certificates in support of the Eligibility Criteria (General Specifications- Sr. No.-14)

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	This being two part Tender Technical and Commercial parts separate, the bidder should not attach any document(s) containing pricing information alongwith Technical Part. The tenders containing price information in Technical Part will be summarily rejected. Prices should be indicated in the Price Bid format only.	Yes / No / Explain	
2	DELIVERY TERMS : Stores shall be despatched on F.O.R destination basis i.e. SCL, S.A.S. Nagar, Mohali, Punjab exclusive of GST as may be applicable. Vendor to quote in INR only.	Yes / No / Explain	
3	GST: Purchaser is entitled to concessional GST of 5% as per Ministry of Finance Department of Revenue, Notification No. 47/2017 Integrated Tax (Rate) both dated 14th November 2017 respectively and would accordingly issue Exemption Certificate in favour of the contractor quoting in Indian Rupees. The bidder should take note of the same while quoting the prices in Indian Rupees. GST on installation/ services shall be applicable @18%.	Yes / No / Explain	
4	COMPLETION PERIOD: The time period for the completion of the entire work i.e. Design, Supply, installation, testing and commissioning is Four (04) months from 7th day of release of Purchase order by SCL.	Yes / No / Explain	
5	VALIDITY: The tender must be valid for a minimum period of 120 days from the date of opening of Technical bid and 90 days after opening of Price bid.	Yes / No / Explain	

6	<p>SECURITY DEPOSIT: After acceptance of the purchase order, the Contractor shall submit security deposit for three percent (03 percent) value of the Purchase Order (PO) within 15 days from the date of receipt of PO towards successful execution of the PO. Security Deposit shall be submitted through Demand Draft / Bankers Cheque/ Fixed Deposit Receipt or Bank Guarantee(BG) from any of the Scheduled Banks executed on non judicial stamp paper of appropriate value, and shall be valid for a period of sixty (60) days beyond the date for completion of the Purchase Order.</p> <p>This will be returned by SCL immediately on execution of the PO satisfactorily as per order terms. If not, the amount will be forfeited.</p> <p>Note: In case of BG, Vendor to ensure that their Banker gives Bank Guarantee(BG) confirmation over email from Bank Domain at the following email ids, followed by a letter of confirmation as hard copy:</p> <p>njain@scl.gov.in CC: harjeet@scl.gov.in jarnail@scl.gov.in</p> <p>In addition the banker may send a scanned copy of the BG as an attachment.</p>	Yes / No / Explain	
7	<p>WARRANTY : The Vendor shall submit a written warranty for a period of two (02) years from the date of commissioning for successful/ trouble free running followed by the acceptance of the entire system under scope of this work. During the warranty period, the contractor shall provide four (04) numbers of quarterly preventive maintenance visits per year for the tendered system. and breakdown visits as required. All the consumables, spares, parts, tools, tackles, required manpower etc. shall be covered under scope of the vendor during the warranty period.</p>	Yes / No / Explain	

8	<p>WARRANTY REPLACEMENTS: The replacement parts, if any, shall be supplied by the Contractor free of cost on F.O.R. Purchaser site at SAS Nagar, Punjab basis.</p>	Yes / No / Explain	
9	<p>COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CAMC): SCL may enter into Comprehensive Annual Maintenance Contract (CAMC) for the system covered under the scope of this tender for a period of Five (05) years after expiry of the Warranty period of two (02) years. Vendor shall provide the yearly CAMC charge for five (05) years. These prices should be quoted in Price Format. No Price information should be mentioned in the Technical Part.</p> <p>During the CAMC, the contractor shall provide four (04) numbers of quarterly preventive maintenance visits per year for each of the tendered system. All the break downs shall be covered under the scope of the vendor. All the consumables, spares, tools, tackles, required manpower etc. shall be covered under scope of the vendor.</p>	Yes / No / Explain	
10	<p>TERMS OF PAYMENT: 90% value of the supply parts shall be paid within 30 days of receipt of material at Purchaser site and the balance 10% amount shall be payable on acceptance of the entire project alongwith 100% of installation charges against a Performance Bank Guarantee for 3% of PO value.</p> <p>Payment against Services/ installation shall be released after deduction of TDS, if any.</p>	Yes / No / Explain	

11	<p>PERFORMANCE BANK GUARANTEE (PBG): The Contractor shall furnish a Bank Guarantee (as per format given by purchaser) from any nationalized/ scheduled bank for an amount equivalent to 03% of the value of the Contract and shall be valid for a period of 60 days beyond the expiry date of warranty period. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.</p> <p>Note: Vendor to ensure that their Banker gives Bank Guarantee(BG) confirmation over email from Bank Domain at the following email Ids, followed by a letter of confirmation as hard copy: njain@scl.gov.in CC: harjeet@scl.gov.in abhishek.mishra@scl.gov.in In addition the banker may send a scanned copy of the BG as an attachment.</p>	Yes / No / Explain	
12	<p>Liquidated Damages (LD): If the Vendor fails to deliver the stores within the time specified in the contract or any extension thereof, the purchaser shall recover from the Vendor as liquidated damages a sum of one-half of one percent (0.5 percent) of the Contract price for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 percent) of the Contract price. Delivery of stores means supply, Installation, commissioning and acceptance as applicable.</p>	Yes / No / Explain	
13	<p>EXTENSION OF TIME : If the completion of supply of stores is delayed due to reason of force majeure such as acts of god, acts of public enemy, acts of Government fires floods epidemics quarantine restriction strikes freight embargoes etc., the Contractor shall give notice within 15 days to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice after verification, if necessary may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract.</p>	Yes / No / Explain	

14	<p>Labour Law: Contractor shall abide by all labour laws, rules and regulations in India, which are prevailing, and as enforced from time to time and SCL shall not be responsible for any accident or mishap during the course of the contract to any of engineer/ labour employee by the Contractor. The contractor shall also ensure that the statutory obligations with regards to the employment of labour under law are complied properly and timely.</p>	Yes / No / Explain	
15	<p>ARBITRATION: In the event of any dispute/s, difference/s or claim/s arising out of or relating to the interpretation and application of the Contract, such dispute/s or difference/s or claim/s shall be settled amicably by mutual consultations of the good Offices of the respective Parties and recognizing their mutual interests attempt to reach a solution satisfactory to both the parties. If such a resolution is not possible, within 30 days from the date of receipt of written notice of the existence of such dispute/s, then the unresolved dispute/s or difference/s or claim/s shall be referred to the Sole Arbitrator appointed by the Parties by mutual consent in accordance with the rules and procedures of Arbitration and Conciliation Act 1996 as amended from time to time. The arbitration shall be conducted in New Delhi in the Arbitration and Conciliation Centre New Delhi (Domestic and International) as per its rules and regulations. The expenses for the Arbitration shall be shared equally or as may be determined by the Arbitrator. The considered and written decision of the Arbitrator shall be final and binding between the Parties. The applicable language for Arbitration shall be English only. Work under the Contract shall be continued by the CONTRACTOR during the pendency of arbitration proceedings, without prejudice to a final adjustment in accordance with the decision of the Arbitrator unless otherwise directed in writing by the DEPARTMENT or unless the matter is such that the works cannot be possibly continued until the decision (whether final or interim) of the Arbitrator is obtained.</p>	Yes / No / Explain	

16	<p>APPLICABLE LAWS: The contract shall be interpreted, construed and governed by laws of India.</p> <p>The contract shall be subject to exclusive Jurisdiction of the Court of SAS Nagar (Mohali), Punjab, India irrespective of anything mentioned in any correspondences or otherwise.</p>	Yes / No / Explain	
17	<p>The Participating Vendor / Suppliers /Service Provider shall indicate specifically whether they fall in the category of Class-I local Supplier or Class-II Local Supplier or Non - Local Supplier for evaluation as per Ministry of Commerce and Industry Office Order No. P-45021/2/2017-PP (B-II dt. 16th September 2020). The Provisions of the office order shall apply for this tender. The Vendor/Supplier/Service provider shall submit documentary proof in this regard along with their quotation.</p> <p>Definitions: A supplier or service provider, whose goods, services or works offered for procurement, has local content:</p> <p>a) Equal to or more than 50% : Class-I local supplier. b) More than 20% but less than 50%: Class-II local supplier. c) Less than or equal to 20% : Non local supplier.</p> <p>Mention your category.</p> <p>The provision of office order shall apply to this tender.</p>	Yes / No / Explain	
18	<p>The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide selfcertification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. Vendor shall also give details of location (s) at which the local value addition is made.</p> <p>The provision of office order shall apply to this tender.</p>	Yes / No / Explain	
19	<p>Vendor are requested to mention the address of vendor for placement of PO and also provide e-mail ID, Phone no. of the focal point for seeking clarification in case of need.</p>	Yes / No / Explain	
20	Any Other terms	Yes / No / Explain	

C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	Design and Supply of Air washer unit without fan section 50000 CFM	1.00 Nos.		-		
2	Supply of recirculation centrifugal water pumps min. 50 GPM at 3 kg/cm ²	2.00 Nos.		-		
3	Supply of SS304 ASTM A312 50NB schedule 20 pipe complete with fittings and support structure	12.00 m		-		
4	Supply of SS304 ASTM A312 40NB schedule 20 pipe complete with fittings and supporting structure	10.00 m		-		
5	Supply of bourden type Pressure gauge 0–10 bar SS316, liquid filled, Ø100, 1/2" connection with SS siphon	2.00 Nos.		-		
6	Supply of SS 304/316 Ball valve threaded connection 15 NB PN10 complete with necessary fittings	1.00 Nos.		-		

7	Supply of SS 304/316 Ball valve threaded connection 25 NB PN10 complete with necessary fittings	2.00 Nos.				
8	Supply of SS 304/316 Ball valve threaded connection 40 NB PN10	2.00 Nos.				
9	Supply of butterfly valve CI body and SS disk 50 NB PN10 with flanges, nut/bolts, gasket etc.	5.00 Nos.				
10	Supply of 40 NB check valve, heavy duty PN16/ Class 150 dual plate, zero leakage type having CI body and SS internals	2.00 Nos.				
11	Supply of strainer 50 NB CI/MS Body and SS mesh PN10 flange type complete with gasket, counter flanges and nut bolts etc.	2.00 Nos.				
12	Supply of GI Class B IS1239 pipe 25 NB complete with fittings, support structure etc.	60.00 m				
13	Supply of GI Class B IS1239 pipe 50 NB complete with fittings, support structure etc.	36.00 m				

14	Supply of fire retardant EPS insulation 20 kg/m ³ complete with vapour barrier for 50NB pipe, Al cladding, accessories etc.	20.00 m					
15	Supply of 1 mm thick powder coated MS sheet for blanking of the existing louvers on the existing frames using nuts and bolts, neoprene rubber gasket	30.00 m2					
16	Supply of fresh air intake all aluminium construction volume control dampers made of extruded aluminium complete with all mounting accessories	4.50 m2					
17	Supply of wall mounted Electrical panel	1.00 Nos.					
18	Supply of 4Cx16 Sq.mm stranded Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured 1.1 KV grade with accessories	40.00 m					

19	Supply of 3 core XLPE insulated Copper Power cables of suitable rating from Electrical Panel to Pumps complete with accessories etc. as required.	60.00 m		-		
20	Supply of 63A TP N MCCB, SC rating 35kA along with rotary switch and required accessories in the existing electrical panel dummy feeder	1.00 Nos.		-		
21	I/T/C of Air washer unit without fan section 50000 CFM	1.00 Nos.		-		
22	I/T/C of recirculation centrifugal water pumps min. 50 GPM at 3 kg/cm ²	2.00 Nos.		-		
23	I/T/C of SS304 ASTM A312 50NB schedule 20 pipe complete with fittings and support structure	12.00 m		-		
24	I/T/C of SS304 ASTM A312 40NB schedule 20 pipe complete with fittings and supporting structure	10.00 m		-		

25	I/T/C of bourden type Pressure gauge 0 – 10 bar SS316, liquid filled, diameter100, 1/2 inch connection with accessories	2.00 Nos.					
26	I/T/C of SS 304/316 Ball valve threaded connection 15 NB PN10 complete with necessary fittings	1.00 Nos.					
27	I/T/C of SS 304/316 Ball valve threaded connection 25 NB PN10 complete with necessary fittings	2.00 Nos.					
28	I/T/C of SS 304/316 Ball valve threaded connection 40 NB PN10	2.00 Nos.					
29	I/T/C of butterfly valve CI body and SS disk 50 NB PN10 with flanges, nut/bolts, gasket etc.	5.00 Nos.					
30	I/T/C of of 40 NB check valve, heavy duty PN16/ Class 150 dual plate, zero leakage type having CI body and SS internals	2.00 Nos.					

31	I/T/C of strainer 50 NB CI/MS Body and SS mesh PN10 flange type complete with gasket, counter flanges and nut bolts etc.	2.00 Nos.					
32	I/T/C of GI Class B IS1239 pipe 25 NB complete with fittings, support structure etc.	60.00 m					
33	I/T/C of GI Class B IS1239 pipe 50 NB complete with fittings, support structure etc.	36.00 m					
34	I/T/C of fire retardant EPS insulation 20 kg/m ³ complete with vapour barrier for 50NB pipe, Al cladding, accessories etc.	20.00 m					
35	Blanking of the existing louvers using 1 mm thick powder coated MS sheet on the existing frames using nuts and bolts, neoprene rubber gasket	30.00 m ²					

36	I/T/C of fresh air intake all aluminium construction volume control dampers made of extruded aluminium complete with all mounting accessories	4.50 m2				
37	I/T/C of of wall mounted Electrical panel as above as per the standard electrical practices.	1.00 Nos.				
38	I/T/C of 4Cx16 Sq.mm stranded Aluminium conductor, XLPE insulated, extruded PVC inner sheath, armoured 1.1 KV grade with accessories	40.00 m				
39	I/T/C of of 3 core XLPE insulated Copper Power cables of suitable rating from Electrical Panel to Pumps complete with accessories etc. as required.	60.00 m				

40	I/T/C of 63A TP N MCCB, SC rating 35kA along with rotary switch and required accessories in the existing electrical panel dummy feeder	1.00 m		-		
41	Removal of existing MS louver in 8 inch MAU, finishing of wall, shifting removed louver to scrapyard	1.00 Lot		-		

Common charges (Applicable for all items)

Post Warranty AMC Charges per Year	
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