TENDER NOTICE

Sealed Tender offers are invited for design, supply, installation & commissioning of Refrigeration System for proposed expansion & revamping of existing Refrigeration System, at our 40/4, 40/5 Sector 18, Mafco yard, Turbhe Vashi Navi Mumbai Branch. Tender details alongwith scope of work, technical specifications & Terms conditions are availble on web site www.gokulmilk.coop and also at our Gokul Shirgaon office at B-1, M.I.D.C., Gokul Shirgaon, Kolhapur. Sealed Tender offer duly marked as **" TENDER FOR REFRIGERATION SYSTEM AT VASHI "** is to be submitted at our Gokul Shirgaon, Kolhapur office on or before **19.06.2023** Right to accept or reject any or all Tenders is reserved.

Managing Director **Chairman**

Kolhapur Zilla Sahakari Dudh Utpadak Sangh Ltd.,
B-1, M.I.D.C., Gokul Shirgaon, Kolhapur – 416 234

KOLHAPUR ZILLA SAHAKARI DUDH UTPADAK SANGH LTD., KOLHAPUR

GENERAL TERMS & CONDITIONS OF TENDER

(Expansion & revamping of existing Refrigeration System)

1. The Bidder should have design back up to carry out such jobs on Turn Key basis and must have executed in the last three years at least 3 contracts of similar nature having equivalent value of 3 crore or more.
2. The job should be treated as ' TURN KEY' excluding Civil work. Details as regards scope of work, technical details of required equipment are given herewith .
3. The Bidder should submit the offer in a prescribed format on their letterhead. Commercial bid (price details) and Technical bid (Technical details,) are to be given in separate envelops & both envelops are to be submitted in a sealed envelop marked as "TENDER FOR REFRIGERATION SYSTEM".
4. The offer should be valid atleast for 90 days from the date of submission.
5. The bid must be accompanied by Earnest Money Deposit of Rs. 1,50,000/- in the form of demand draft issued in favour of Kolhapur Zilla Sahakari Dudh Utpadak Sangh Ltd. Bids not accompanied with EMD will be summarily rejected . EMD amount may be forfeited if bidder withdraws it's bid during period of bid validity or if successful bidder fails to sign the contract.
6. No escalation in the price will be given once the order is finalised.
7. Successful bidder will have to keep Security Deposit with us.
8. Work is to be carried out without hampering routine work of our milk chilling centre.
9. Interested Bidder should visit the work place to know the exact working condition before submitting their offer.
10. Payment Terms-
    a. 30% advance of total contract value (Excluding GST) will be given as an advance after getting order acceptance and on submission of Bank Guarantee of equivalent amount.
    b. Next 40% payment of supply items alongwith GST will be released on safe receipt of equipment / material at site. This payment will be released on submission of progressive Invoices.
    c. Next 20% payment of supply items will be released after satisfactory installation & commissioning of ordered Refrigeration System.
    d. 60% payment of installation alongwith applicable GST on progression of installation as per joint inspection / measurement.
    e. Final 10% amount of total contract value (excluding GST) will be released after satisfactory completion of job and submission of Performance Bank Guarantee of Nationalize Bank for equivalent amount valid for a period of 1 year
11. Sealed Tender offer should reach our office at B-1, MIDC, Gokul Shirgaon, Kolhapur on or before **19.06.2023**
12. We reserve the right to accept or reject any bid and rejection of all bids at any time prior to award of contract
13. Subject to Kolhapur Jurisdiction.

Managing Director

SPECIFICATIONS & SCOPE FOR DESIGN, SUPPLY, INSTALLATION, TESTING COMMISSIONING OF CHILLED WATER REFRIGERATION SYSTEM MODIFICATION AT KOLHAPUR ZILLA SAHAKARI DUDH UTPADAK SANGH LTD. VASHI

1. GENERAL

1.1 **Preamble** We proposed revamping of existing chilled water system refrigeration system, at Gokul Dairy Vashi, Navi Mumbai.We have the pleasure to approach you for submission of offer for the Design, Supply, Installation, Testing and Commissioning of the above refrigeration system as per following Specifications.

1.2.1 The bidder should have design backup to carry out such jobs on turnkey basis and must have executed at least 3 contracts in last 3 years of similar nature having equivalent value of 3 crore or more for single contract.

1.2.2 The bidder should attach signed and sealed satisfactory work completion certificate of concerned organization/company with contact details.

1.2.3 The company turnover should be minimum 10 Cr. per year and should submit last 3 year's CA certificates of the same.

1.2.4 The bidders should visit site on 7.6.2023 & submit site visit report along with technical tender.

1.2.5The refrigeration consultant for this project: Dag Tech Services, Pune Mr. Anil D Gulanikar. (Mob: 9004099792)

1.3 Prices: **Bidder to furnish prices strictly as per the break up format given in this tender document.** The Price quoted shall be all inclusive on FOR site basis covering below:

- GST: To be quoted separately
- Transit and Site Insurance: To be included in Price
- Freight, Packing and Forwarding: To be included in Price.
- Validity for offer &Price: **90 days**
- Completion Period: Total Five months (Three months for supply + Two month for installation from date of LOI/**PO**).

5. List Applicable standards to follow:

Sr. No	Standard / Requirement to Follow
A	**System related Standard**
1	AAR 1 -2016 (Now known as BIS standard IS17773-2022)
2	ASME B-31.5 -2013: Refrigeration Piping & heat transfer component:
3	ASME Sec VIII DIV -1: Pressure vessels:
B	**Reference Books**
1	ASHRAE System 2014 volume,
2	ASHRAE Fundamental 2013
3	IIAR piping Hand Book.
C	**Indian Requirement to follow**
1	Indian Electricity acts and rules framed there under
2	Fire insurance regulation
3	Regulation laid down by the chief electrical inspector of state/ state electricity board
4	Regulation laid by factory inspector of the state
5	Regulation of local authorities
6	Installation and operation manuals of OEM
D	**Indian applicable standards**

1	IS 2825: code for unfired pressure vessels
2	IS 660 : Safety code for mechanical refrigeration
3	IS 662 : un-hydrous ammonia
4	IS 661 : Code and practice for thermal insulation of cold storage
5	IS 702 : Industrial Bitumen
6	IS 4544: code for safety for ammonia
7	IS 14164 : Measurement of pipe and vessel insulation work

Proposed Scheme & basis of design.

The scheme and basis of design for proposed refrigeration system is as defined in the following sections under the contract which includes design, engineering, supply, installation, testing and commissioning, performance trials of Refrigeration system as required for the successful and satisfactory completion and handing over of the contract.

Existing refrigeration system consists of following:

- We are using the two-milk past. of 20KL capacity of GEA & Tetra Pack make. We get the chiller temp of GEA pasteurizer without any adjustment but at the time of tetra pack pasteurizer in operation we need to adjust the milk chillers valve. Due to this some temp. loss of milk chillers occurs.
- Considering the future milk **pasteurizing** loads i.e. 4-5 lakh per day, we need to run both pasteurizers simultaneously. Now at a time we get the chiller temp for only one. As per previous installed refrigeration capacity
- Presently there are 3 RM chiller and two pasteurizers connected to existing chilled water system is connected.
- There is one PHE with 1 W +1 S Water pump

Proposed milk processing equipment:

- We proposed to replace the existing chilled water piping to ensure proper flow to each of RM Chiller and pasteurizer
- Add New Falling Film Chiller (FFC) chiller along with Hot/Cold tank and with new connecting refrigerant piping and chilled waterpiping and controls
- Add primary recirculation and secondary pump
- Add KCX-6 with Motor to hook up to existing piping.
- Add one HP receiver
- Bidder to study the existing system in detail before submitting their offer and must give total performance guarantee of the temperature as per parameters given in basis of design.
- LP vessel, ammonia pump PHE condenser will be existing

Basis of design and proposed scheme

The Basis of design of refrigeration system is as below given in Table -1

Table-1 Designed parameters of various PHE installed at Gokul Vashi. **Presently only one Pasteuriser out of two is in operation at a time**											
Sr No	Item	Make	Drg Ref	Milk side			Chilled water side				
				inlet temperature Deg C	outlet temperature Deg C	Flow cum/hr	inlet temperature Deg C	outlet temperature Deg C	Flow cum/hr	Present Design Ref load from water side kW	Remark
1	Milk Chiller-1	Alfa Laval	2826692	5	2.5	20	1.5	3	46.1	80.41	
2	Milk Chiller-2	Alfa Laval	2826692	5	2.5	20	1.5	3	46.1	80.41	
3	Milk Chiller-3	Alfa Laval	2826692	5	2.5	20	1.5	3	46.1	80.41	
4	Pasteurisation-1	GEA	ZIN-171/80416	6	4	20	2	5	45	156.98	
5	Pasteurisation-2	Tetra Pack	2851036	6	4	20	2	7.5	30	191.86	presently any one Pasteurisation operates
6	**Total considering only one GEA Pasturiser operates**								**183.3**	**398.2**	**available chiled water flow rate is 79.2cum/hr**

Table-2 Designed parameters of various PHE installed at Gokul Vashi. **Considering all two Pasteuriser will be operation at a time in future**											
Sr No	Item	Make	Drg Ref	Milk side			Chilled water side				
				inlet temperature Deg C	outlet temperature Deg C	Flow cum/hr	inlet temperature Deg C	outlet temperature Deg C	Flow cum/hr	Present Design Ref load from water side kW	Remark
1	Milk Chiller-1	Alfa Laval	2826692	5	2.5	20	1.5	3	46.1	80.41	
2	Milk Chiller-2	Alfa Laval	2826692	5	2.5	20	1.5	3	46.1	80.41	
3	Milk Chiller-3	Alfa Laval	2826692	5	2.5	20	1.5	3	46.1	80.41	
4	Pasteurisation-1	GEA	ZIN-171/80416	6	4	20	2	5	45	156.98	
5	Pasteurisation-1	Tetra Pack	2851036	6	4	20	2	7.5	30	191.86	
6	**Total considering only one GEA Pasturiser operates**								**213.3**	**590.1**	**available chiled water flow rate is 79.2cum/hr**

Present capacity of compressors

Table-5 Present compressor capacity @-3 / 40 Deg C evp/ condensing Temp						
Sr. No	item	Unit	Present capacity at 600 RPM	shaft power	Required capacity considering only one pas. In operation Table-1	Remark
1	KC-3 -1	kW	175.24	42.77		
2	KC-3 -2		175.24	42.77		
3	Total		350.48	85.54	398.2	considering diversity and less operating temp diff observed at site on water side than design , for present

Considering all above tabulated observations suggest following:

The basic design parameters of refrigeration system are given below:

Sr. No	Item	DATA		
1	Refrigerant	Ammonia		
2	Refrigeration system type	Ammonia Pumping system		
3	Type of compressor to be selected	Air cooled, Single stage Reciprocating Compressor		
4	Defrosting system	Not Applicable		
5	Dry Bulb (DB) temperature to be considered for design of condenser	40		
6	Wet Bulb (WB)Temperature to be considered for design condenser	28		
7	Electric Supply	415V +/- 10%, 3 Phase, 50 Hz +/-5%, AC combined variation 10%		
8	Control supply	220V, 1 Phase, 50 Hz, AC.		
9	**List of approved makes**	**Option-1**	**Option -2**	**Option-3**
9.1	Compressor and accessories	Kirloskar	--------	--------
9.2	Motor, high energy efficient IE3	Siemens	-----	--------
9.3	Falling film chiller	Indotech	-----	------
9.4	**Refrigerant controls**	**Danfoss**	**Manik**	
9.5	Refrigerant angle / straight globe valves	Danfoss SVA type	Manik SS construction valve for refrigerant	
9.6	Expansion valves, Stop Check valves, Isolation valve for pressure transmitter	Manik	Danfoss SVA type	---
9.7	**VFD**	**Danfoss**		
9.8	SA 106 GR B Seamless pipes	Maharashtra Seamless	---	----
9.9	MS Class C / GI class B Pipe	TATA	Jindal	------
9.10	Ammonia Pressure Gauges glycerin Field	Wika	---------	--------
9.11	**Ammonia Pressure transmitter**	**Danfoss**		
9.12	Insulated PUF pipe supports,pipe sections	Omkar PUF	Armacell	Armaflex

9.13	All valves and control insulation	Armacell	Armaflex	-----
9.14	Safety valves	Manik	Danfoss	------
9.15	Safety release indicator	Manik	---------	--------
9.16	Water balancing valves	Oven trap	-------	----------
9.17	Water line Ball valves,butterfly valves, swing check valves,	Audco	Kits	--------
9.18	Water line Pot strainers with SS mesh		--------	----------
9.19	Water line flow switch	JCI	--------	---------
9.20	**Electrical switchgear**	**L&T**	**Siemens**	Schneider
9.21	**Digital Temperature Indicator**	**ESD**		---------
9.22	**Duplex PT 100 sensors IP65 with SS Thermowell**	**ESD**		
9.23	Ammeter	AE	-------	---------
9.24	Current Transformer	Reco	Nippen	---------
9.25	Terminal	Connectwel	------	---------
9.26	**Water and milk flow meter. Water meter for condenser make up line**	**Telelin**	-----	-------
9.27	Compressor safety cut out and Differential pressur switch across pump	Danfoss	-------	-------
9.28	**Water pump with VFD**	**CRI**	**Grundfos**	----
9.29	Water level controller	Minilec	---	----
9.30	Water line solenoid valve	Danfoss		-----
9.31	**Falling Film Chiller**	**Indotech**	**----------**	----
9.32	**ACB Manual draw out type**	**L & T**	---	---
9.33	kWh Meter with RS 485 communication to PLC	Schneider	Carrel	Conserve

- Based on the above basis of design and parameters given in TABLE bidders to design the refrigeration / CHW system.
- The list of approved makes is given above. No deviation for above makes is acceptable.
- P & I diagram for Refrigerant &Water circuit indicating line sizes, insulation thickness valves and controls is given along with this tender document. Bidder to quote all valves, control, piping, fittings etc. as per P & I and also as specified in the following specifications. If bidder wants to give higher line sizes and extra piping, valves, controls, equipments, accessories, and then bidder should include the same **for achieving desired performance.** The valve quantity mentioned includes spare valve quantity.
  - **Bidder to guarantees the entire performance as stated in basis of design above. It is total bidder responsibility to achieve and demonstrate performance of the system as per above basis of design. At any given time, bidder should not say that we have given as per specifications hence giving performance as required is not their (Bidder's) responsibility**
  - Bidder has to visit site before submitting his offer. As we have to hook up new system to existing system bidder must study existing refrigeration system and location of all equipments. Bidder to work out piping quantity themselves. If bidder calculated qty is higher than stated in this document bidder to include the same in their tender. If bidder calculated qty is lower than the stated quantity then bidder to quote as per quantity given in the tender.
  - Incase as per his design and project requirement any other material/equipment is required to achieve performance as stated in above basis of design, he should include the same in his offer.
  - No extra cost on any account will be paid once contract is awarded.

Proposed Location of Major Equipments:

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- Compressors will be located in Plant room on ground.
- Falling film chiller with Hot/cold tank, primary recirculation pump, secondary pump to be located at old atmospheric condenser location.

- Water piping connection from FFC to existing RM chiller and pasteurizer which are located on terrace.
- KCX-6 compressor to be located in Plant room along with Control panel, MCC to be located in plant room.
- HP receiver to be installed near existing HP receiver.
- Bidder to visit site before quoting to understand requirement and calculation of all variable items such as Refrigerant and chilled water piping, valves, controls, Power and control cabling, pipe bridge ,structure platforms etc. No extra charge on any account will be paid during execution of the contract.
- Bidder to submit offer with complete Basis of design, technical scope, Price breakup, otherwise offer will be rejected without any information to bidder.
- Bidder to confirm in their offer that they as have studied the tender specifications and their offer includes all as specified in the tender without any deviation

Scope of supply: The detail technical scope / specifications for the refrigeration system as follows. Bidder to include all as specified without any deviations.

Sr. No.	Item	Qty.
1	**Compressor: Bidder to study scope of compressor and accessories given below in detailed. Item mentioned – By Gokul to be excluded from bidder scope.** Reciprocating compressor operating at -3 /40 evaporative condensing temperatures, Model KCX-6, giving minimum 525.92 kW capacities and 126.32 kW as shaft power running at 900 RPM, Ammonia as refrigerant, with capacity control solenoid valve mounted on it. Compressor jacket cooling must be air-cooled. Capacity control steps shall be 33, 50, 67, 83, and 100%,there should 4 capacity control solenoid valves supplied and installed by Kirloskar (manufacturer) at their works. **Accessories to be provided along with each compressor:** ➢ Compressor capacity, shaft power, RPM, motor kW to be furnished by the bidder in data sheets attached. ➢ Compressor will be provided **by Gokul**. ➢ Kirloskar make Common Base Frame **by Gokul** ➢ Tools Kit&Set of Gaskets ➢ Each compressor to be supplied and installed with Kirloskar make HP side Demister type Oil Separator with Float valve **- By Gokul**. ➢ Kirloskar Make Automatic oil return system from Oil separator to compressor crankcase ➢ SS tubes & SS Ferrules & fittings ➢ KRMS panel with associated sensors – **By Gokul** ➢ Emergency stop button to be provided for compressor located close to compressor. ➢ Kirloskar make Drive set consisting of Flywheel, Motor Pulley & V belt, belt guard – **By Gokul.** ➢ Kirloskar make Suction (TAL-100) and discharge (TAL -80) stop valves for compressor isolation. ➢ Minimum 160 kW, Siemens make, TEFC, IP 55, 4 Pole, sq. cage, high energy efficient motor (IE3 type) to be coupled with the each above compressors. The motor should be suitable for electric supply of 415 V +/- 10%, 3 Phase, 50 Hz +/- 5%, and combined variation of +/- 10%. Motor should have built in facility to measure winding temperature and bearing temperature at DE and NDE. Themotor cooling fans should be of low noise. ➢ **Compressor motor to be installed with VFD with necessary electrical and electronic switchgear, instruments, transmitter etc. whatever is**	1 no.

	required to operate VFD. VFD to control starting kick on generator and electrical load. ➢ Tools such as set of torque wrench, filler gauge, and other tools required to assemble and dismantling of compressors to be supplied by the bidder. This compressor to be connected to existing suction and discharge header	
2	**New Ammonia to chilled water Falling Film Chiller with Hot/Cold well suitable for 214 cum/hr. CHW flow with 4.2/1 Deg C.** **Minimum FFC specifications are as below:** • Burst Pressure of Plates: 85 Bar • Test Pressure: 25 Bar Hydraulic • Max. Working Pressure: 18 Bar • Water Inlet Temperature to Evaporator: 4.5c • Water Outlet Temperature from Evaporator: 1c • Water Flow rate: 214 M3/Hr. • Refrigeration Capacity : 872 kW • Evaporating Temperature: (-) 3c • Refrigeration used: Ammonia • Evaporator Volume: 434 lit • No. of Evaporators: 1 Set • MOC of Plates: SS304L / 1.00mm • MOC of Casing: SS304 • Type of system: Pumped (N = 4) • **EVAPORATOR SECTION** • Length of Evaporator: 3000mm • Width of Evaporator: 1500mm • Height of Evaporator: 2400mm • Heat Transfer area: 167.20 Sq. m • Total Weight: 2200 kg Approx. • Liquid Connection: 100NB • Wet Return Connection: 100NB x 2 Number • **WATER TANK SECTION** • Length of water tank: 4160mm • Width of water tank: 2660mm • Height of water tank: 2180mm • Volume of Water tank: 20000 lit • Connections for Process pump: 1 Nos x 200NB • Connection for Recirculating pump: 1 Nos x 200NB • Connection for makeup water: 1 Nos x 40NB • Connection for over flow / drain: 1 Nos x 40NB • Insulation thickness: 80mm PUF • MOC of Tank: SS304 • Net Weight of water tank: 2300 kg Approx • Operating weight: 25470 kg Approx. • Required Bed for FFC MM: 4000 x 6000 x 150 Height • Required Recirculation primary Circulation pump: 214 m3/hr @ 8mtr Head • Secondary Pump: 214 m3/hr @ 40 m Head minimum	**1 No**
3	**Primary Recirculation pump:** Flow 214 cum/hr. head 8 m Qty 1+ 1. Pump	**2**

	shall be back pullout type with minimum 11 kW IE3 Motor.	
4	**Secondary pump**:Flow 214 cum/hr. head 40m. Pump should be supplied with VFD. VFD and its logic / program required pressure transmitters is to be designed and supplied by the pump manufacturer. Pump shall be back pull-out type with 37 kW IE3 Qty 1 W + 1 S	2
5	**Insulated chilled water piping with valves, fitting and insulation**: piping shall be GI class B.Bidder to visit site to understand scope of piping, measure quantity required and shall include all in scope. No extra cost on any account will be paid to bidder after award of contract. Piping shall be as per PID and qty given in this document are minimum required qty. However, bidder to estimate their own quantity and quote if required higher qty	1 lot
6	**Refrigerant Piping: - P & I diagram indicating pipe sizes, valves, controls along with insulation thickness are part of this tender and given along with this document.** Quantity given is minimum quantity. Bidder can increase the same if they want **Bidder to quote strictly as per the same without any deviation. Bidder can add or increase line sizes, add valves & controls if necessary to achieve desired performance.** • The Refrigerant & oil (ammonia piping) piping including vessel nozzles should be as per A 106 Gr. B seamless pipes. • The schedule of pipe must be: Size 15 to 40 NB SCH 80, 50 to 250 SCH 40 and above 250 SCH 20. • While designing the piping, please consider the following. • All wetreturn, dry suction, liquid & discharge headers should be provided with 2 Nos. 15 NB Stop valve for purging or pump down purpose. One valve to be installed in the field and one to be installed in the plant room. • The pipe sizing to be designed based on velocities mentioned in IIAR piping hand book as a guideline, the distance of the pipe line, pressure drop in pipe line and energy saving perspective. The minimum required pipe sizing is given in P & I. if bidder wishes to increase the line sizes he may do so. The pipe sizes should be approved before procurement. • Elbow size 50 mm and above: Carbon Steel 90-degree long radius as per A 234 GR WPB ANSI B 16.9 butt welded. Elbow size 40 mm and below: Carbon Steel 90-degree long radius as per A -105 ANSI B 16.9 socket welded • Concentric reducer Carbon Steel as per A 234 GR WPB ANSI B 16.9 butt welded.Eccentric reducer Carbon Steel as per A 234 GR WPB ANSI B 16.9 butt welded. • End Cap size 50 mm and above: Carbon Steel as per A 234 GR WPB ANSI B 16.9 butt welded. No flat piece to be used as end cap.End cap size 40 mm and below: Carbon Steel as per A -105 Socket welded ANSI B 16.9 • All tubing and fittings for instruments, controls must be SS. • All Pipes, pipes support, platforms, Pipe bridges, and walkways will be in bidder scope. • All Drain points must be plugged properly. • All piping must be in plum, aesthetically well designed. We reserve right to ask bidder to cut and re do the piping if not installed accordingly. Piping to be designed with minimum bends. • Welding of pipe: Route run by tig and final weld by arc must be followed • Wherever possible angle valve must be used to avoid elbow.Stop check valve inlet pipe must be vertical and outlet pipe must be horizontal. • Proper slopes to be maintained wherever required.	1 Lot

	• Contractor is required to furnish BOM for lot items. • Bidder must get piping layouts and method of installation approved before installation. Proper pipe marking as per AAR and IIAR standard to be placed on each pipe line. All non-insulated piping to paint with epoxy paint as per AAR/ IIAR colour code. • **Bidder to visit site and calculate the pipe quantity before quoting. Piping to be quoted on Lum sum basis &no extra cost on any account will be paid in case of any variation in piping and valve qty. Bidder to study in detailed P & I diagram enclosed and included all as per the same.**	
7	**Refrigeration controls and valves. Minimum list of valves and controls is attached in this document. Bidder can increase the qty if they want** • All valves must be of weldable angle type valves as mentioned in tender document and PID • All valves to be supplied by bidder as per PID and as specified in these technical specifications which is part of this tender • All Manik refrigerant line valve must be of SS construction. • Please note entire responsibility is with bidder and what is required to achieve as per approved logic during detail engineering must be supplied and installed by the bidder. No extra cost on any account will be paid for this work. • All temperature sensors (PT100) must be duplex, IP-65 type supplied with SS Thermo well. • Shielded cable to be used to connect sensors. This shielded cable must be laid in separate conduit / tray and away from power cable. • All water flow meter must have local display and RS485 communication and Indication in PLC/SCDA for further processing. • Please note calculation of quantity of valves and controls is bidder responsibility. • All valve internals to be removed before welding the valves and controls and kept in plastic cover to protect from dirt. • Proper plug with gasket to be procured from safety valve suppler and use it plug safety valve during pressure testing. • All open to atm drain points must be plugged. • Distance piece to be provided for all flow meter. This distance piece to be used in case flow meter needs to be removed for repair.	1 lot
8	**Insulation of refrigerant / chilled water piping and vessels**. The insulation for refrigerant pipe and vessel should be pipe sections insulation. Covered with 20/22 G Aluminum cladding with 20-micron anodizing depending upon pipe & vessel diameter. PUF half round pipe support for insulated pipes shall be of minimum 150 kg/cum density.PUF pipe section must have density 40 kg/cum • No negative tolerance on PUF density is acceptable. Material / lot will be rejected if density is observed less than 40 kg/cum./ 150 kg/cum • The thickness of insulation shall be as per table provided in the tender document. • All valves and controls to be insulated with Armacell O class insulation material covered with Al cladding. The minimum Thickness of insulation shall be as indicated in PID. The insulation must be aesthetically excellent. If not client reserve right to ask contractor to remove and re do the same.	1 lot
9	**Anhydrous ammonia**. Will be Gokul scope	1 lot
10	**High Pressure Receiver:**	1 No

New receiver to be connected to existing HP receivers with associated required piping valves and controls. Bidder to study the location, calculate their own pipe quantity as per the sizes and controls given below. No extra cost on any account will be paid .

- Minimum size 1200 mm dia x 6000 mm Shell length. The minimum Shell & dish end thickness shall be 12/14 mm
- Receivers to be manufactured as ASME SEC VIII DIV –I.
- Material construction shall be SA516 Gr 70. The minimum test pressure for the vessel shall 26 kg/sq. cm.
- Spare Valves/ nozzles to be provided on vessel to connect future liquid inlet / outlet connection.
- Receiver should be provided with water spray system which covers both receivers' entire length.
- Name plate as specified in AAR-1 standard to be provided
- 100% Joints must be Radiography and its plan and corresponding plates to be submitted along with the test certificate before dispatch of vessel for our approval.
- GA drawing of vessel to be submitted before startup of manufacturing of vessel for our approval.
- Receiver to be stress relieved after fabrication and certificate of the same to be submitted before dispatch of vessel.
- Vessel size, shell and dish end thickness to be mentioned in your offer.
- All nozzles, valves & controls to be provided as per attached P & I
- Receiver to be provided with MS saddle welded to the vessel and fabricated at manufacturer works.
- Minimum four lifting hooks to be provided to each vessel.
- Receiver to be painted with 2 coats of red oxide + 2 coats of epoxy paint

- Minimum Receiver valves and controls are as below. Valves shall be of SS construction

Sr. No	Valve and nozzle size NB	Qty
1	Liquid outlet 50 NB	1
2	Liquid outlet 50 NB	1
3	Vapour Eq Line 80 NB	1
4	Purge line 15 NB	1
5	SFV nozzle size 32 NB	1set
6	PG connection Nozzle size 15 NB	1
7	Liquid inlet 80 NB	1
8	Level Gauge isolation valve 20 NB	2
9	Stand pipe 100 NB	1
10	Stand pipe isolation valves 20 NB	2
11	Drain valves 15 NB	2
12	Liquid eq valve 50 NB valve	1
13	Controls	
14	Dual Manifold Type DSV2 with Safety Valve SFV15 with Indicator DSV2 inlet with flange 32NB	1
15	Pressure Gauge Wika make Glycerin filled SS 4" DIA	1
16	Pressure Indicator with Pressure Transmitter	1

	17	Quick Drain Valve MDMV 15	2
	18	1200 mm Reflex level glass	1

- Associate estimate refrigerant piping. Piping shall be A106GR B as per schedule mentioned in ASME standard
- The pipe qty given below is estimated. Bidder can quote with higher qty. Actual piping if required is more than given below bidder has to supply the same with no extra cost to Gokul. Bidder to visit site before submitting the offer and measure is own qty.

15 NB	12
20 NB	12
25 NB	12
32 NB	12
40 NB	6
50 NB	24
65 NB	12
80 NB	12

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11	**Two charges of compressor lube oil**. Oil type, brand name and name of the oil company to be specified in the offer. The oil should be available in India. Oil charged in the entire system should be suitable for -10 Deg C. Minimum 200 lit quantity to be included in the bidder offer. Please note the quantity of oil mentioned is indicative, bidder will have to charge required lub oil into the system as per system requirement and top up the same as and when required till handover of the system to client. No extra cost for lub oil will be paid on any account till the system is handed over. The lub oil make and parameters to be approved by Gokul dairy before procurement of the same.	200 lit
12	**Structural material**: For pipe installation and construction of pipe bridge, platform with Chquered plates, pipe supports, and falling film chiller supports are in bidder scope. All platforms, ladders as per site condition and as per Gokul requirement to be supplied and installed by the bidder as per safety requirement and emergency evacuation requirement. Wherever required pipe supports to be provided to prevent vibration. All Pipe supports, platforms, Chquered plates, cable tray supports must be epoxy painted with paint guarantee of minimum three years. All structural material, pipe supports must be painted with anti-corrosive paint have guarantee of minimum three years. Hand rail on both sides of ladders to be provided.**MCC panel stand is to be provided by the bidder.**	1 lot
13	**Electrical MCC (starter panel) & power distribution board (PDB)**: **Reference Standards**: - a) IS 8623: Factory built assemblies. b) IS 2147: Degrees of protection provided for enclosures. c) IS 13947: General requirements for switchgear d) IS 375: Marking and colour coding for bus bars. • Main Incomer for MCC should be with **suitable**ACB(Manual Draw out type make as specified above **Make: L & T** • MCC Construction: Metal enclosed, cubicle type, dust & vermin proof floor mounted, Single Front, Cable entry from Top, fixed type semi-compartmentalized construction as per IP 52 degree of protection. • Fabrication: Panels will be fabricated out of 14SWG. CRCA Sheet Steel. Gland Plate will be 14 SWG. Base Frame will be 10 SWG. All cover plate will be with Neoprene Rubber gasket and will be bolted. • Painting: The panel will be pre-treated with seven tank process i.e.	1 Set

	Degreasing,De-rusting acid prickling, phosphating, and final powder coated structure finish epoxy based paints as per IS-5, Shade – 7032. (Interior & Exterior) • Bus bar: Bus bar will be Aluminium E91E grade with PVC heat shrinkable sleeves. (Clearance between – Phase to Phase – 25mm & Phase to Earth – 20mm) • Bus bar Rating: 1sq.mm = 1Amps • Wire: Current circuits wire will 2.5sq.mm and control wire 1.5sq.mm. Flexible PVC Copper wires. Power wire will be as per rating. **Make: Polycab/Finolex.** • Hardware: Zinc yellow passivated will be provided. • Earthing:Earth Alu. Bus/stud will be provided, and Door will be earthed • Terminal:10% spare control terminal will be provided. • Name Plates: Name plates will be Aluminium anodized. • Routine Test: Insulation Test on 1000V Megger between earth, neutral and phase. • --H.V. Test: For Power 2.5KV for 1 min. ➢ For Neutral 1.5KV for 1min. ➢ Operational Test at no load. • The spare feeder of each kW rating to be provided in the MCC. • MCC load list to be approved before fabrication of panel. • Starters for old existing chilled water pumps also to be provided in the new MCC. • **Bidder should lay down suitable power cable required for panel along with all proper terminations, cable glands, cable trays etc. complete as per standard procedure.** • MCC should have provision to record / monitor energy consumed by each compressor. Energy meter to be also installed in main incomer of the MCC.Energy meter should have RS485 communication facility . • MCC / control panel to have top cable entry. No cable trenches will be provided. • MCC must be provided with forced cross ventilation. • Each starter to be provided with minimum 2 No + 2 NC auxiliary contactors. Bidder can add more as per their requirement**. Also two spare switches of 63 Amps and two spare starters of pump capacity should be required in MCC.** • Entire control action start stop of equipments, pumps etc. will be from switchgear hard wired type control panel located in control room. • Capacitor bank for automatic maintenance of power factor as per regulation is in Gokul Scope. • Ammeter is to be installed for Compressor motor, and Pump motors to monitor current. • Local lockable start stop push buttons to provide near all motors located outside plant room, (Construction IP 65) • Supply for control panel to provide from MCC panel. • 4 CT for power factor correction and CT required for energy measurement to be installed in main panel. • **Gokul will provide one supply point from nearest MCC panel.**	
14	**CONTROL SCHEME FOR THE REFRIGERATION SYSTEM: Control panel shall be relay based and control logic to be approved before**	

	fabrication of the panel. • The main control panel shall be kept in the control room located in the plant room.**Gokul will provide one supply point from nearest MCC panel. Bidder should lay down the suitable power cable required for new main panel along with all proper terminations, cable trenches, and cable trays as per standard**. • The control panel is fully automatic standalone with possibility to run the entire refrigeration system in manual mode. • Control Panel is to be fabricated out of CRCA sheet, powder coated, free standing type panel of suitable size to house the PLC and I/O modules with relays, illumination. Control panel will house, various switches, contactors, push buttons, lamps, timers, interconnecting wiring etc., • The panel has cable entry from top. • The control panel is to be sized considering sufficient operating space between switches/push buttons / switch gear mounted in the panel and also the sufficient space is provided for the internal wiring. Sufficient space should be available to terminate cables to PLC for each of maintenance and cabling and preventing short circuit while maintenance.	
15	Complete power and control cabling including cable trays, conduits etc. for all refrigeration system supplied by the bidder. Selection and installation should follow Indian standards and local electrical authority's standard. • Power for 415 V system shall be 1100 V Grade Aluminium Conductor XLPE insulated PVC sheathed, Armored IS 7098 (Part-I). No power cable of aluminum conductor having less than 4 sq. mm shall be used. No copper power cable to be used less than 2.5 sq. mm shall be used. Each power cable must be 3 -1/2 core. Make: **Finolex/Polycab.** • Control cable shall be 415 V 1100 V grade, copper conductor XLPE insulated PV sheathed IS per IS 7098 Part –I. The minimum size of copper control cable shall be 1.5 sq. mm **Make: Finolex/Polycab.** • Screen cable for instruments and controls shall be multi stranded, based annealed, copper conductor, PVC insulated, cores colour coded lay-up, screened by braiding with ATC copper wire and finally overall PVC Sheathed. **Make: Finolex/Polycab.** • **Suitable**Cable glad must be of same material of cable, and crimped by proper tools. • All power and control cables are to be lead in **SS** perforated cable tray. Cable tray must be galvanized. • Separate earthing for power system and separate earthing for control circuit to be supplied and installed by the bidder. Earthing including earth pit with required civil work to be included in bidder scope. • From earth pit to various Panels & equipments**suitable** GI and copper strip earthing to be provided by Bidder as per following. ➢ For MCC Panel – GI Earth pit **(2 Nos. as per standard manual digging method)** ➢ For PLC control system – Copper earth pit **(1 Nos. as per standard manual digging method)**	1 set

	➢ Bidder is required to furnish BOM for lot items.	
16	Requirement of drawings **Following drawings to be attached along with the bid** 1. P & I diagram with line sizing, indicating all valves and controls included in scope. 2. Electrical load list. 3. List of controls & valves with model **4.** Filled data sheet of equipments, controls **5.** Submit manufacturer selection printout for compressor, condenser, RM chillers and falling film chiller. **Following Drawings are required after order finalization for approval before startup of work** • P & I diagram with valves, controls with models, equipment sizing, line sizing. • Equipment layout drawings for plant room and evaporative condensers with plan and sections. • Equipment foundation drawings. • All Tanks, pressure vessel GA drawings • PHE chiller and ammonia chiller GA drawings, manufacturer selection print out and data sheets • Equipment wise refrigerant controls list with part number and qty. • List of valves with manufacturer part numbers, model, quantity. • MCC GA drawing with BOQ / make / Qty • Control panel GA drawing and control logic with BOQ / make /Qty • MCC and control panel Power and control wiring diagram • If applicable Isometric Safety valve relief piping diagram with line size, pipe qty in meters. **Following as built manual / drawings in 6 sets are required along with 3 sets of soft copy.** • O & M of refrigeration plant • O & M with spare part list and part numbers for compressor with motors • All vessels test certificates, stress relieving certificate, with 100% radiography plates and plan • P & I diagram with valves, controls with models, equipment sizing, line sizing. • Equipment layout drawings with plan and sections • Equipment Foundation drawings • All Pressure vessel GA drawings, • PHE ammonia chillers GA drawings manufacturer selection print out and data sheet. • O & M of manufactures of compressors PHE chiller • Equipment wise Refrigerant controls and valve list with part number model and Qty. • MCC power and control wiring diagram with as built ferrule numbers along with GA drawing with BOQ / make / Qty. • Control panel power & control wiring diagram with as built ferrule numbers, GA drawing, control logic, with BOQ / make /Qty • If applicable Safety valve relief piping diagram.	

	• Pressure test, vacuum test, loop checking report jointly signed by bidder site in-charge and authorized Gokul dairy person.	
17	**General Specifications.** **1. Bidder will be responsible for technically correct installation and include in his scope as per requirement of automation and system basis of design. Bidder will not be paid extra cost on any account if he has to add any material or redo the installation if necessary to achieve the requirement** **2. FFC with Tank and pumps to be lifted 30 M or more high from ground and to travel horizontal distance before placing the same on proposed location. Bidder to visit site and include required crane. Lifting shifting positioning of the FFC / Tank in their offer. Gokul will not pay any extra amount or provide any services for the same.** 3. Refrigeration contractor to furnish all equipment foundation drawing consisting of pocket dimensions, static / dynamic load details, inserts bolts etc. at appropriate time during the execution. Any delay in providing these details which will cause delay in project will be attributed to refrigeration contractor. Refrigeration contractor has to closely coordinate with civil agency for the same. 4. Fixing of insert plates, structure for supporting operating equipment, pipe lines etc. to be supplied and installed by the bidder. The structural material to be used should be of TATA or SAIL make only. 5. All pipe lines should be thoroughly cleaned by CTC and wire brush and painted with two anti-corrosive red oxide primer followed by two coats of epoxy paint as per the standard colour code and instruction by client. 6. From all Safety valve, piping should be provided up to outside of the plant room and at a height 10 feet above the nearest height building. Ammonia sensors to be provided at top most point with alarm in plant room indicate ammonia leak from safety valve. Each Safety valve to be provided with mechanical indicator, indicating release of each safety valve. Safety valve pipe sizing shall be as per EN 13136:2016, no deviation accepted. Bidder to submit safety valve piping P & I for approval before installation. 7. All unloaded equipments at site must be covered properly to protect it from rain and weather. 8. All installed equipments such as motors, compressors, chillers, pumps etc. along with controls must be covered properly till in start of performance trials to protect the same from dirt, rain etc. 9. Refrigerant pipe welding is, route run by tig and final by arc. Pipe should be flushed properly before charging of ammonia. 10. All pipe ends must be closed by end cap only. 11. All refrigerant piping Pressure testing (21 kg) for 48 Hours by nitrogen. 12. All refrigerant piping vacuums testing at 735 mm to hold for 48 hours. For vacuum test proper vacuum gauge to be used. 5 HP vacuum pumps to be used for creating vacuum. Compressor should not be used for vacuum 13. Joint pressure testing and vacuum testing inspection report to be submitted and test will be witness by our site in charge. 14. All pipe supports, platforms ladders should be hot deep galvanized. 15. The Platform with Chquered plates and ladders should be provided to access valve and controls, and wherever required by Gokul Dairy. 16. Once the contract is awarded bidder has to co-ordinate other agencies such as electrical, firefighting, civil agency and ensure the committed	

	dates are archived. 17. All tools & tackles, crane, hoisting equipment etc. to be provided by the bidder. 18. The rigging and placement of the equipment at site, unloading of equipments (imported & Indigenous) at site will be carried out by the bidder. **19. All safety measures (PPE) such as safety shoes, helmet, goggles, Hand gloves and proper safety arrangement to work above certain height, movable scaffolding must be with lockable wheel and appropriate platform to work must be followed. Entire Bidder installation staff should require wearing PPE. Any erection crew if found without using PPE will be ask to leave the site and worked will stopped till adequate PPE are used. All safety procedure to be approved by Gokul before startup of installation work** 20. Proper crane to be arranged and used by bidder to install equipment and material on terrace and where ever required etc., Crane with appropriate boom to be used to install evaporative condensers and pressure vessels, and equipments to be arranged and paid by the bidder. 21. Lodging, Boarding, Transport etc. of the erection crew would be arranged by the bidder. 22. Transit Insurance of all the supplied materials from supplier's ware house up to Site shall be covered by the bidder. The storage cum erection (all risk) Insurance to be covered by the bidder. The risk covered should be valid up to handing over the plant to us. 23. The prices should be inclusive of import duties if applicable. 24. Unloading equipment at site including, lifting shifting positioning of the equipment is included in bidder scope. Bidder to take at most care of these equipments while installation and commissioning. In case of any damage to these equipments while installation & commissioning, the equipment to be repair/replacement by the bidder. Custom clearance of imported equipments equipment and transportation to site is included in bidder scope. 25. Bidder should inspect the site of the work to familiarize themselves with the site conditions before finalization of the order. 26. Income tax according to Government of India regulations and any other local taxes, as required statutorily will be deducted, and prescribed certificates shall be issued to the bidder. If works contract tax, trade tax is applicable, then it will be to bidders account. 27. Provident Fund, ESIC or any other statutory benefits if applicable now and/or as and when made applicable to the erectors/worker employed by the bidder would be borne by the bidder. 28. The prices shall remain firm till the satisfactory completion of the entire scope of work. No extra claim will be entertained. **29. Performance trail will be conducted for period of two weeks as per mutually agreed plan.** **30.** Since this is running plant, entire work has to be carried out meticulously, with proper planning, coordination with Gokul; dairy and with minimum shutdown **without affecting daily operations**	
18	Any other terms and conditions, if not agreed by us in writing would not be acceptable to us.	
19	**Client (Gokul) will provide following**:	

	• Lockable storage space for storing variable items along with valves and controls. • All civil work, foundation work, floor water drain arrangement in plant room and on terrace. • Make up water in Hot and cold well at one point. Further distribution by Bidder. • All foundations will be provided by client. • Making holes in walls and repairing of the same. Bidder to provide marking and coordinate with designated person. • Power & water for erection: Power & water will be provided at one point. You will have to make your own arrangement for further connection of power supply to your machinery. Any other supports required for refrigeration system is in refrigeration contractor scope • **Bidder should lay down suitable incoming power cable required for MCC along with all proper terminations, cable glands, S.S. cable trays etc. complete.** • **Gokul will provide one supply point from nearest MCC panel.** • Incoming power cable supply up to bidder MCC. Termination of the same at bidder's MCC by bidder. Further distribution by bidder.	

Controls, valves, piping quantity along with flow balancing valve specifications and PID

Note: HP Receiver piping, valves and controls are specified in above specification. The same is not included in all specifications given below

(A) Refrigeration and water lines controls

Sr. No.	Item Description	Manik Engg.Model	line size NB	Total Qty
1	**Compressor : 1 No x KCX-6**			
2	Stop check valve at discharge	MHPSCV	80	1
3	Quick Drain Valve	MDMV15		1
4	**FFL chiller - 1 871 kW @ -3 Deg C**			
5	Liquid line solenoid valve 871 kW @-3	SA50A3	80	1
6	Liquid line strainer	FA50	80	1
7	Flow regulating	MHPRG -65	80	1
8	Back Pressure regulating valve with EVM+CVPP LP		150	1
9	Pressure Gauge Wika make Glycerin filled SS 4" DIA			2
10	Gauge isolation valves			2
11	**FFL CHW system 872 kW**			
12	Recirculation pump in/out Pressure Gauge Wika make 4 inch with SS Sypon and cock	WIKA		2
13	**Inlet / 1** Digital Temperature Gauge + 1x Duplex PT100 + 1 x SS Thermowell on water side . 200 NB + 120 mm thk insulation		200	1
14	Inlet chilled water Flow meter to connect to PC flow 214 cum/hr temperature 10 Deg C		200	1
15	Flow switch , flow 214 cum/hr 200 + 120 mm insulation		200	1
16	**CHW Hot/cold well size 4160 x 2660 x 2180 H mm**			
17	Hot well tank temperature . PT 100 duplex + thermowell + digital temp indicator	TDI 1R01 +PT100 (600MM)		1
18	Hot well inlet from process - 1 Duplex .PT 100 + thermowell + digital temp indicator . Pipe size 200 NB + insulation 120 mm	TDI 1R01 +PT100+ TW	200	1
19	Hot well level controller to control recirculation pump. There are two pumps . Both pump to trip if level is low and once level reach both pump to start.	MINI-LC		1
20	Cold well tank temperature . PT 100 duplex + thermowell + digital temp indicator	TDI 1R01 +PT100 (600MM)		1
21	Cold well level controller to control recirculation pump. There are two pumps . Both pump to trip if level is low and once level reach both pump to start.	MINI-LC		1
22	Chilled water secondary pump outlet temperature - 1 Duplex .PT 100 + thermowell + digital temp indicator . Pipe size 200 NB + insulation 120 mm	TDI 1R01 +PT100+ TW	200	1
23	Secondary pump in/out Pressure Gauge Wika make 4 inch with SS Sypon and cock	WIKA		2
24	Secondary pump outlet chilled water Flow meter to connect to PC flow 214 cum/hr temperature 1 Deg C			1
25	**Milk Chiller 1-4**			
26	Sensor PT100 SIMPLEX + Thermowell [pipe size 100 NB insulation thk 80 mm			8
27	Temperature Indicator	TDI1R01		8
28	Pressure Gauge water syphon wika make 4 inch dial			8
29	**Pasturies-5**			
30	Sensor PT100 SIMPLEX + Thermowell pipe size 80 NB insulation thk 80 mm			2
31	Temperature Indicator	TDI1R01		2
32	Pressure Gauge water syphon wika make 4 in dial			2
33	**Oven Trap Make water flow regulating valve**			
34	milk chiller 1-to 3 flow 46 cum /hr , line size 100	1062653 valve		3
35	GEA CH flow 45 cum /hr , line size 100	1062653 valve		1
36	Tetrapack CH flow 30 cum /hr , line size 80	1062652 valve		1

(B) Water line Valves

Sr. No	Water line valves NB	QTY
1	**Butterfly valves with flanges (class 150 table D) with nuts, bolts and gaskets**	
2	50	3
3	65	2
4	80	10

5	100	8
6	200	17
6	**Globe valves with flanges (class 150 table D) with nuts, bolts and gaskets**	
7	20	4
8	40	3
9	**Pot strainer with 100 SS mesh with flanges, nut bolts and gaskets**	
10	200	4
11	**Swing check valves with flanges (class 150 table D) with nuts, bolts and gaskets**	
12	200	4

(C) Refrigerant pipe quantity tentative. Bidder to calculate their own qty. if higher or any other pipe size and qty required they should include the same

SA 106 GR B Pipe. NB	Qty in meter
15	18
50	12
80	112
100	12
150	112

150 NB and 80 NB pipe we may have to install from plant room to FFC. Bidder to estimate the qty accordingly

(D) Water pipe Qty Bidder to calculate their own qty. if higher or any other pipe size and qty required they should include the same

Water Pipe Size in NB	Qty in meter M
20	12
40	18
50	0
65	12
80	18
100	24
200	100

(E)Insulation thickness (PUF pipe section 40kg/cum density)

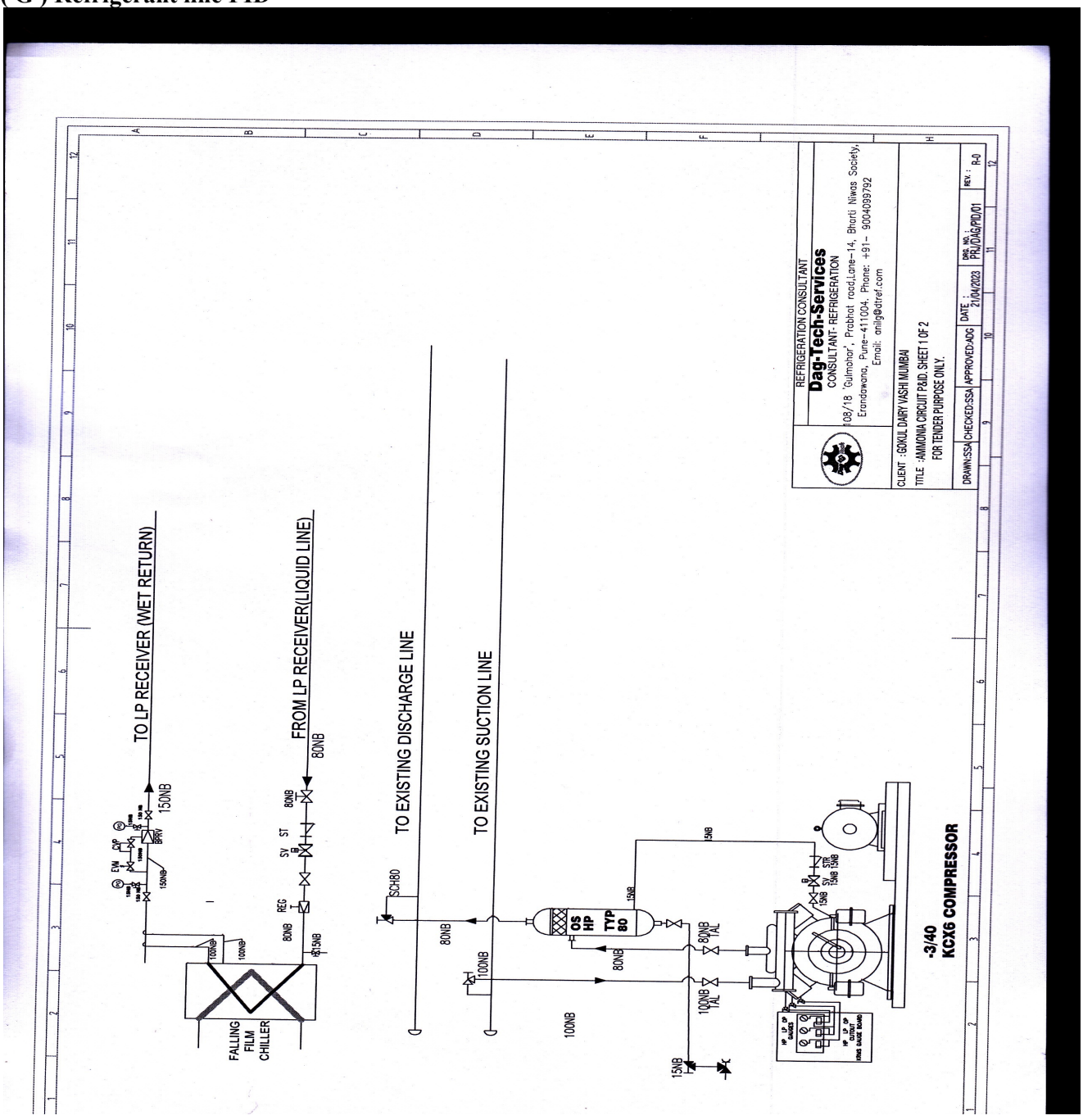
Pipe size NB	Refrigerant line insulation thickness mm	Water line insulation Thk mm
15	30	30
20	30	30
25	30	30
32	40	40
40	40	40
50	60	60
65	60	60
80	80	80
100	80	80
125	80	80

150	100	120
200	100	120

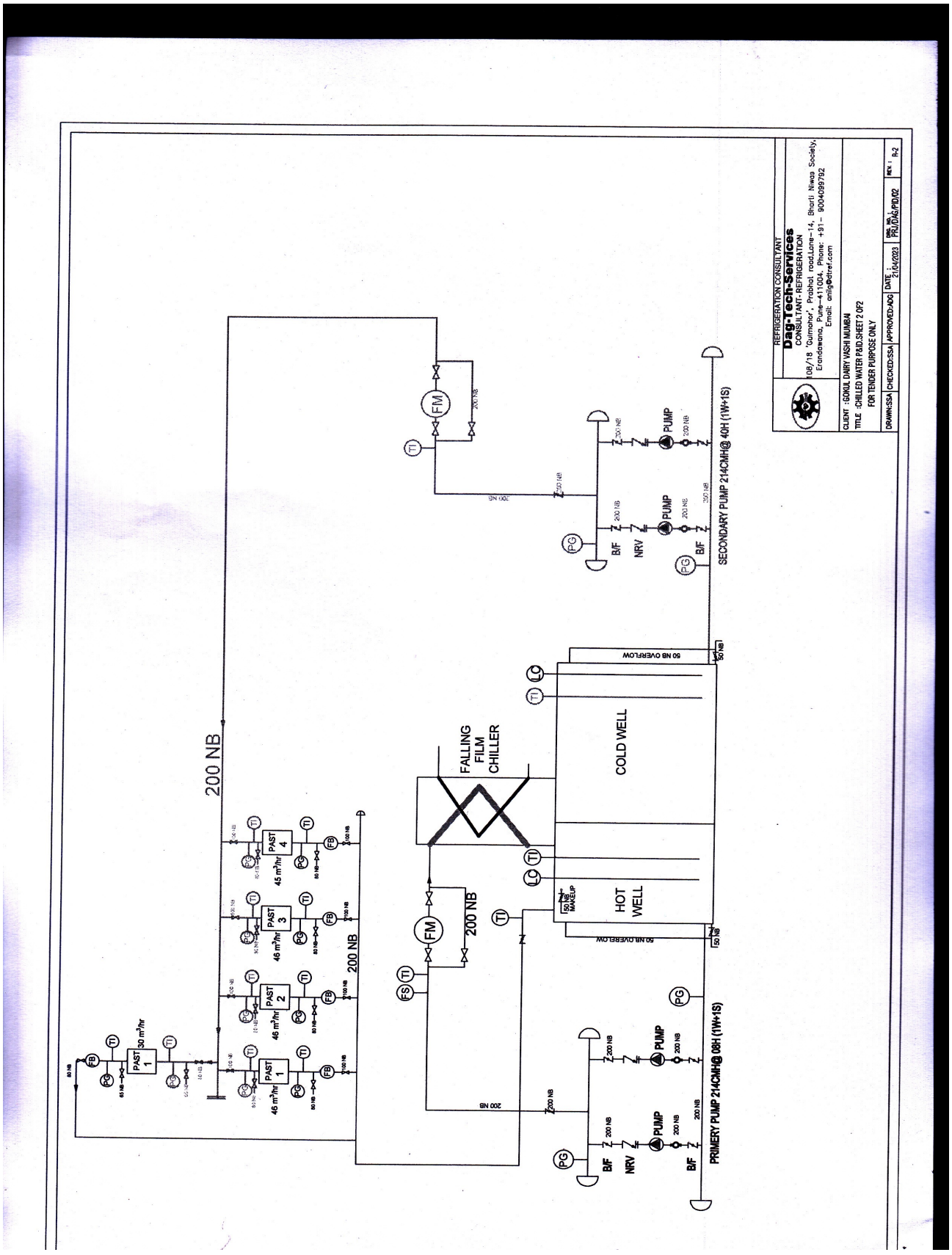
(F) Water balancing valve specifications

Technical data for balancing valves, 2 1/2" - 18"	
Valve body	Cast Iron (GG 25 EN-GJL-250 According to DIN EN1561)
Bonnet:	Bronze / Dezification Resistant Brass
disc	Bronze / Dezification Resistant Brass
Disc SEAL	PTFE
Stem	stem made of dezincification resistant brass to avoid any corrosion issue.
Stem Seal	Maintenance-free stem seal due to double EPDM O-ring.
Flanges	Round flanges according to ISO 7005-2 (DIN EN 1092-2)
Pressure rating	PN 16 AND PN 20 for cold Water
Temperature range	(-)10°C to (+)150°C
Setting	Infinitely adjustable setting and it should be secured
Pressure test point to measure actual flow	2 test points.

(G) Refrigerant line PID



(H) Water line PID



Price break up.

Bidder must submit the price break up in the format mentioned below

Sr. No.	Item Description	Total Qty	Unit price INR	Total price INR
1	**KC-6 Compressor / accessories& tools, Motor as per specifications.**	1no		
2	Refrigeration / Chilled water controls& valves	1set		
3	New FFC with, Hot and cold well, chilled water primary. / Secondary pumps	1set		
4	Ref piping, fittings and insulation. CHW Water piping with PUF insulation and valves.	1set		
5	Structural material, platforms, ladders etc.	1set		
6	MCC, control panel, Power and control cables,earthing, cable tray.	1set		
7	ammonia Lub oil	1set		
8	HP receiver with associate controls and valves and piping	1 Set		
9	Subtotal for supply of equipments (A)	INR		
10	Installation and commissioning Charges (B)	INR		
11	Total price (A) + (B) = C	INR		
12	GST extra	INR		

Prices: The Price quoted shall be all inclusive till site basis covering as below:

- GST: To be quoted separately
- Transit and Site Insurance: To be included in Price
- Packing and Forwarding: To be included in Price.
- Freight: Should be inclusive in price.
- Validity for Price: **90 days**
- Price to be quoted on Lum sum basis. No extra cost on any account will be paid to bidder.

Commercial Format

(To be given on the Letter head of Tenderer)

Date :

To,
The Managing Director,
Kolhapur Zilla Sahakari Dudh Utpadak Sangh Ltd.,
B-1,, MIDC., Gokul Shirgaon, Kolhapur-416 234.

Sub : Commercial offer for Refrigeration System.
Ref : Your Tender Notice Published on

Dear Sir,

With reference to the Tender Notice published in Daily . I/We submit commercial offer for the work of design, supply, installation & commissioning of Refrigeration System for proposed expansion & revamping of your Vashi Unit. We have thoroughly studied the details of work to be done and agree upon the following.

1) Equipment specifications, make, quantity, work place, standard and required skill for

execution of job.

2) Terms & conditions of the Tender.

A) OUR TOTAL BID PRICE FOR THE WORK :- Rs.

(Amount in Words Rs.)

B) REQUIRED PERIOD FOR COMPLETION OF JOB -

Place :

Date :

Encl : Price Break up sheet -

Seal & Signature of Tenderer.

FORMAT (Technical offer)

(To be given on the Letter head of Tenderer)

To,
The Managing Director,
Kolhapur Zilla Sahakari Dudh Utpadak Sangh Ltd.,
B-1, MIDC., Gokul Shirgaon, Kolhapur-416 234.

Sub : Technical offer for Refrigeration System.

Dear Sir,

With reference to the Tender Notice published in Daily , I/We submit the Technical offer for carrying out work of Refrigeration system for proposed expansion & revamping of existing refrigeration system at Vashi Unit. I/We have thoroughly studied the details of this Tender and have studied Technical specifications and nature of entire work. We agree upon the technical specifications and details of equipment/material (No deviation with respect to Tender).

Thanking you,

Yours faithfully,

Seal & Signature of Tenderer.

Encl :
1) D/D towrads EMD
2) Company profile
3) Technical details
4) Details of similar jobs executed during last three years.

(FORMAT)

COMPANY PROFILE

Name of the Tenderer	
Address	
Telephone Nos.	
Web site	
E. mail	
GST Registration No.	
Name of Authorised signatory	
Desigantion of Authorised signatory	