



**Gujarat Cooperative Milk Marketing Federation Ltd, Anand
Amulfed Dairy (Previously known as Mother Dairy)**

Plot No. 35, Nr. Indira Bridge,
Ahmedabad-Gandhinagar Highway
Village: Bhat, Dist: Gandhinagar
Gujarat, India-382428

Request for Bid (RFB) for **“Supply, Modification, Alterations, Installation & Commissioning of dedicated buffer tank and packing line with automation integration for Amulfed dairy”** as per given scope of work.

AFD: PUR: ENQ: 2024: 692



PURCHASE ENQUIRY

Inquiry No : AFD: PUR: ENQ: 2024: 692 dated: 3rd October 2024

Description : Inquiry of Supply, Modification, Alterations, Installation & Commissioning of dedicated buffer tank and packing line with automation integration for AmulFed dairy

Qty : As per the given Scope of Work

Site Visit : Timing for Site Visit from 2.30 PM to 5.00 PM (only on working days)

Inquiry Start Date	05/10/2024
Last date for submission for technical bid	19/10/2024 18:00 hrs
Last date for submission of commercial bid	25/10/2024 16:00 hrs.
Website for vendor registration	https://afdpurchase.amul.in/
Contact Person	Yogendrasinh Sodha- 7046036777

Dear Sir,

You are requested to give your best competitive rates for inquiry of of Supply, Modification, Alterations, Installation & Commissioning of dedicated buffer tank and packing line with automation integration for AmulFed dairy considering general terms & conditions and Scope of work/supply as below:

General terms & Conditions: -

1. Procedure to participate in inquiry:

- All the interested bidders have to participate in the inquiry through our purchase portal by registering your firm as a new vendor (if your firm already have registration in our PP, then you have to login to your account and request AFD to send RFQ).
- Interested bidders have to register your firm in our Purchase portal.
 - Website for our portal is as >>>: <http://afdpurchase.amul.in/>
- Offer through mail/hardcopy will not be accepted and stand for rejection, your competitive bids should be submitted through our online portal only.
- Interested bidders have to submit their technical specification/detail first, only after technical evaluation/approval, bidders will be invited for submission of commercial bid.

2. **Rights Reserved by AmulFed Dairy (A unit of GCMMF Ltd).**

AmulFed Dairy (A unit of GCMMF Ltd), at its sole discretion and without assigning any reason thereof, reserves the right to accept and / or reject the whole or part of any or all the bids received.

3. **Validity:**

The offer should be valid for 120 days from the date of Bid opening.

Contact details: For any techno-commercial query you may contact Yogendra Sodha (7046036777), or (E-mail- yogendra.sodha@amul.coop, kishan.bhadja@amul.coop, bharat.naik@amul.coop) of Purchase department.

4. **Payment terms: -**

Payment for supply, installation and commissioning contracts must be strictly as below:

- 1) 20% advance of total contract value (without tax) (Supply + Erection & Commissioning) on submission of following:
 - (i) Acceptance of the order i.e.
 - a. Submission of the Duplicate copy of the order duly signed by the authorized signatory putting stamp of the Organization.
 - b. Against a bank guarantee (ABG) for equivalent amount valid for 60 days beyond the stipulated delivery (as per schedule of delivery/supply)/ completion period.
- 2) Payment against Supply and erection of equipments/material (with 100 % tax):
 - a. 65% progressive payment of supply value against safe receipt of goods at site within 45 days.
 - b. 65 % payable on erection value on progression of erection as per Joint Measurement Sheet/Installation Certificate within 30 days of submission of Invoice.
- 3) 15% balance payment within 30 days of satisfactory commissioning of the plant. On submission of:
 - i. The Performance Security (PBG) shall be in the amount of 15% of basic value of Contract (without tax) up to sixty days after the date of completion of performance obligations including warranty obligations. (acceptance date + warranty period + 60 days)
Notes: a) For all the payments to be made against bank guarantees. The Bank Guarantees should be obtained from Nationalized Bank or ICICI Bank or HDFC Bank or acceptable Banks as per the list enclosed.

5. **Liquidated Damages**

Bidder/Supplier fails to deliver any or all of the Goods or perform the Services within the time period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages as under:

- a. For the Supply Component:

A sum equivalent to 0.5% of the delivered price of the delayed goods (As per the price break up furnished by the supplier and accepted by the Purchaser, which the supplier fails to supply within the time period specified in the contract for each week of delay.
- b. For the Erection and Commissioning Component:

A sum equivalent to 0.5% of the un - executed portion of each week of delay or part thereof beyond the time specified in the contract for the successful completion of the plant.

The total amount so deducted as per above, shall not exceed 5% of the Contract value. Once the maximum is reached, the Purchaser may consider termination of the Contract.

6. **Warranty:** Minimum of 12 months from the date of commissioning

Supply, Modification, Alterations, Installation & Commissioning of of dedicated buffer tank and packing line with automation integration for Amulfed dairy

Design basis

Amulfed Dairy wish to install milk Buffer tank 9 and 10 for Packing line 9 (Bottle filler) and packing line 10 (6 ltr pouch) respectively.

Buffer tank 9&10

Buffer tanks are already available with AFD and vendor to consider alteration in it for instruments and inlet nozzle.

- **Vendor to consider supply, installation and commissioning of instruments in buffer tanks.**
- **Vendor to consider supply, installation and commissioning of agitator, its electrical and automation (Agitator shall be high speed & gear less).**
- **Vendor to consider individual CIP return pump for BT 9 & 10**

One new CIP return shall be common for existing BT 5 to 8 and new proposed BT 9. Another new CIP return shall be common for existing BT 1 to 4 and new proposed BT 10. CIP of BT 9&10 shall be performed through existing CIP kitchen

Milk filling in Buffer tank 9

Currently, AFD have milk transfer line 3,4,5 and 7 are for existing buffer tanks 5 to 8. Now out of which, transfer line 3 and 7 shall use for filling in proposed BT 9.

- **Vendor to consider automatic scheme for filling and its CIP accordingly.**

Transfer and CIP shall be fully automatic. Milk filling flow rate shall be 30000 LPH. CIP of transfer line shall be performed through existing CIP kitchen.

Milk emptying from Buffer tank 9

Milk shall empty from BT 9 to bottle filler and existing packing line 8.

- **Vendor to consider scheme for emptying, CIP of emptying lines accordingly.**

CIP of emptying line shall perform through existing CIP kitchen.

Milk filling in Buffer tank 10

Currently, AFD have milk transfer line 1, 2, 5 and 6 are for existing buffer tanks 1 to 4. Now out of which, transfer line 1,5 and 6 shall use for filling in proposed BT 10.

- **Vendor to consider automatic scheme for filling and its CIP accordingly.**

Transfer and CIP shall be fully automatic. Milk filling flow rate shall be 30000 LPH. CIP of transfer line shall be performed through existing CIP kitchen.

Milk emptying from Buffer tank 10

Milk shall empty from BT 10 to pouch packing machine (6 ltr).

- **Vendor to consider scheme for emptying, CIP of emptying lines accordingly.**

CIP of emptying line shall perform through existing CIP kitchen.

Detail of loading and unloading header is given below for better clarification.

BT 9 loading header

- Existing filling line 3- 76 mm
- Existing filling line 7- 76 mm

BT 9 unloading header

- Main out let valve -76 mm
- Existing packing line 8 -76 mm
- New Packing line 9 (Bottle filler) -63 mm
- CIP return 63 mm

BT 10 loading header

- Existing filling line 1- 76 mm
- Existing Filling line 5 -76 mm
- Existing Filling line 6 -76 mm

BT 10 unloading header

- Main out let valve- 76 mm
- New Packing line 10 -76 mm
- CIP return -63 mm

- **Vendors to consider transfer, CIP operations in new BTs and packing line in fully automation.**
- **Vendors to consider pipe lines up to packing machine and return from packing machine.**
- **Vendors to consider CIP forward and return line to/fro packing machine.**

Deep Chiller in transfer line 6 and 7

In addition of above, AFD wish to put individual deep chiller in existing transfer line 6 and 7. Transfer line capacity is 30 KPH. Chilled water shall be available within room and vendors to consider tapping from chilled water supply and return lines with manual isolation valve, automatic on off valve, NRV etc.

- **Vendors to consider automation of chillers with transfer lines logic and CIP accordingly.**

Electrical

- **Vendors to consider new feeder or modification in existing feeder for agitators.**
- **Supply, installation and commissioning of all electrical shall be in scope of vendor.**

Automation

Existing system (PLC) is to be use for new set up.

- **Vendor to consider software development accordingly.**
- **Supply, installation and commissioning of automation hardware/software for additional valves, instrument, pumps and agitators shall be in scope of vendor.**
- **SCADA screen development and modifications is to be consider accordingly by vendor.**
- **Vendor to provide all details of instruments at the time of bid.**

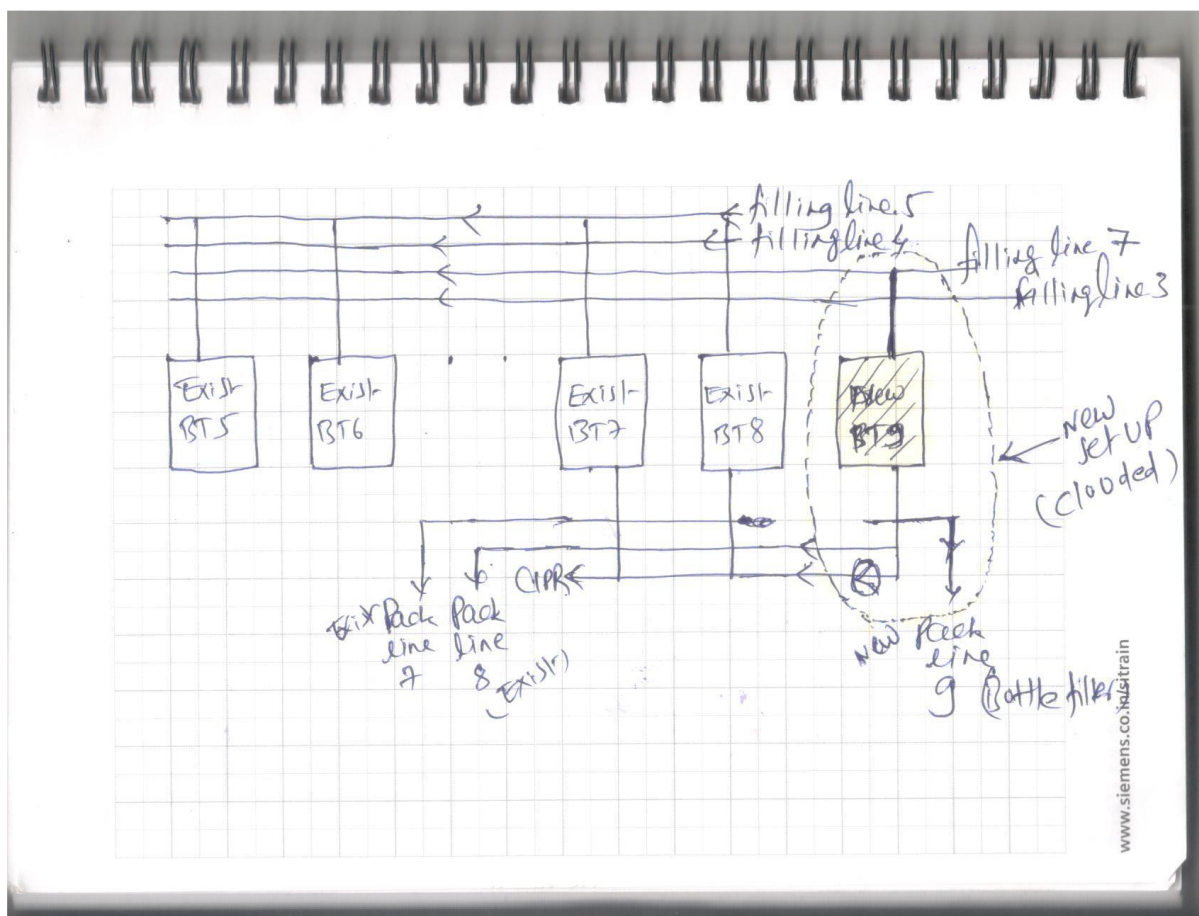
Supply, installation and commissioning of all mechanical, electrical, pneumatic, automation and instrumentation shall be in vendor's scope.

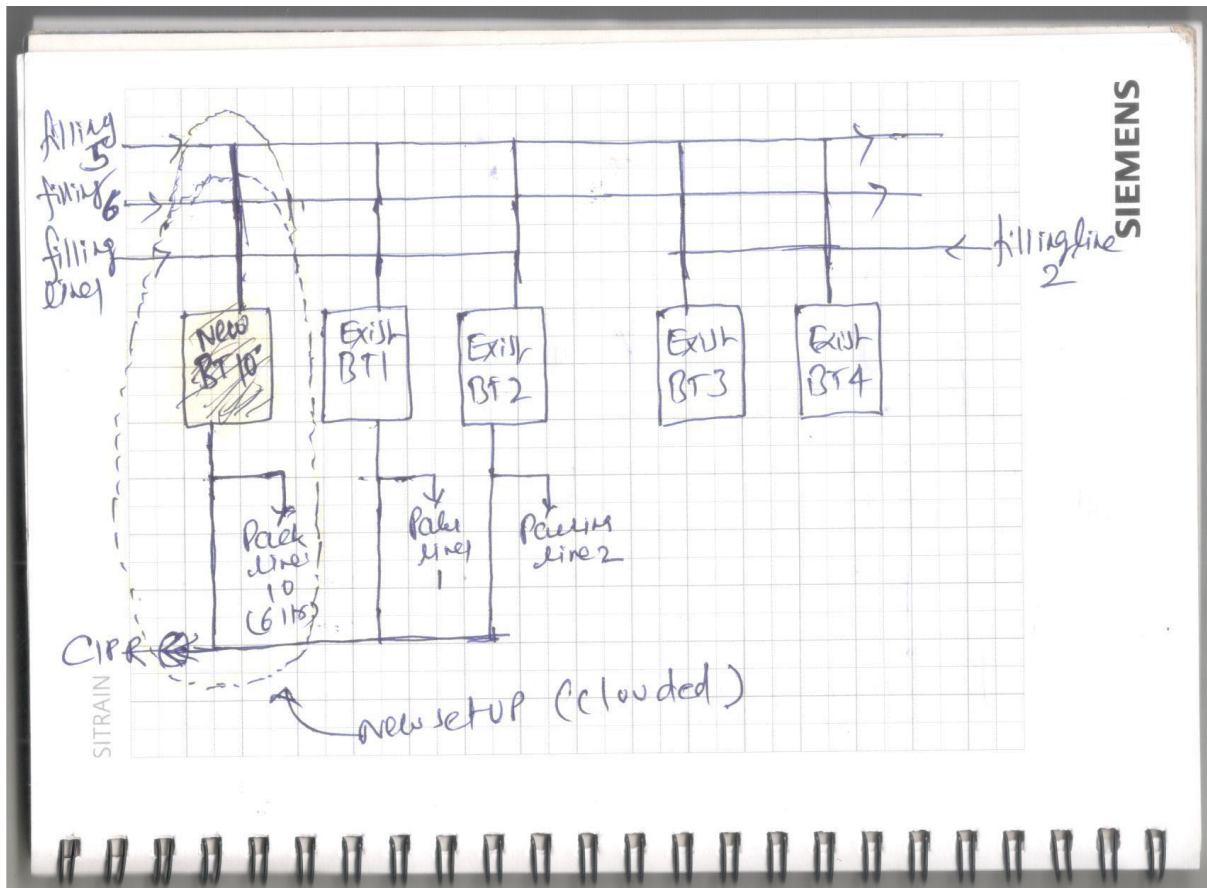
In addition to new scope, Vendor to consider mechanical, electrical, pneumatic, automation and instrumentation modification in existing set up accordingly if required.

Vendor to provide P&ID and all technical details of proposed scheme with technical offer.

Vendor can refer below given schematic diagram for better understanding and design.

Vendor can visit AFD for any clarification and discussion.





Technical Specification

- SS Pipes, Valves (Mix Proof) & Fittings (for entire plant)

Pipes:

Type: TIG welded, annealed and de-scaled tubes shall be manufactured as per the standard ASTM-A270. Outer surface of the tubes should be with dairy finish and inner surface should be pickled as per dairy standard. Fix type clamp with two side nut bolt shall required.

Material of construction and thickness:

All the pipes unless otherwise stated shall confirms to AISI 304. The average wall thickness of tubes should be 1.6 mm up to 76 mm OD and 2.0 mm for diameters above 76 mm OD. The wall thickness at any point shall not vary more than 12.5% over and under from the average wall thickness specified. The ovality on the open ends shall be within the permissible limit specified in the ASTM A270. Support pipes shall have wall thickness of 2.mm up to 40 mm dia pipe and 2.5 mm for higher size pipes up to 63 mm dia

SS Manual Valves & Fittings, Manual butter fly Valve:

The butter fly valve shall be of sanitary design and all liquid contacting parts shall confirm to AISI 316. The valve sealing gasket shall be EPDM /Nitrile rubber material Suitable for hot water sterilization temperature of 100 Deg. Celsius and hot acid and lye solution of 2% concentration at 85 Deg. Celsius. The valve shall be provided with SS handle. The valve shall be with plain ends shall be suitable for direct welding on the pipes.

Non Return Valve:

The non return valve shall be of sanitary design and all liquid contacting parts shall conform to AISI 304. The valve sealing gasket shall be EPDM / Nitrile rubber material suitable for hot water sterilization temperature of 100 Deg. Celsius and hot acid and lye solution of 2% concentration at 85 Deg. Celsius. The non return valve shall be with plain ends shall be suitable for direct welding on the pipes.

Unions:

All the parts unless otherwise specified shall be made out of investment casting using AISI 304 material. The union shall be complete with liner, male part, nut and sealing ring (neoprene food grade rubber gasket). The liner and male parts should be suitable for expansion joints. All the inside as well as outside surface of the union shall be with dairy finish.

- **Pneumatic valves(2 way,3 way, butter fly),DI/DO & Open/ close Feedback**

Type : Two way / three way pneumatically operated sanitary valves of mix-proof (self cleaning), ON-OFF, seat valves, flow diversion valves, etc. shall be provided with DI/DO connectivity.

All the valve battery valves shall be of self cleaning type mix proof valves having 3 solenoid (each) and double seat with ASI connectivity

Valve shall require spillage proof during on/off operations.

Material : AISI 316, welded interconnected body

Sealing : Positive

Controls : Electrically/electronically operated (ASI)

The Pneumatic valves shall have the following features to cater to fulfil the above functional requirements :

Housing shall be ball shaped for the ideal flow characteristics to ensure 100% clean ability by CIP. Housing closed by cover plates should not create a sump or dead corners. Housing interconnections shall be by detachable type clamp connection. The seals such as housing seals, stem seals and disc seals shall be flush mounted. Control unit shall be suitable for ASI connectivity.

Valves shall have low/very low susceptibility for the pressure surge. The valve shall have the short leakage outlet to recognize the leakage immediately

Valve shall have open lantern installed between the actuator and the product area of the valve to assure that leakages occurring at the stem seal shall be immediately visible and also shall act as a protection against over heating of the actuator.

Mix proof valves shall be used wherever the CIP and the process liquids are intercrossing in the piping system. The CIP of the isolation area is possible and also the leakage shall be easily identified.

All pneumatic connections from the header up to individual valves shall be of SS-304 through suitable SS-304 distribution headers connected with FRL units/moisture separator etc. 500 mm pneumatic flexible PU tubing to be considered at control unit side for all valve. The valves

Specifications for Mix proof valve	
Application	For Milk, B milk, curd, CIP chemicals, Hot water
Type of valve	Real Mix proof with double seat, Three solenoid, with both automatic seat cleaning facility, SS316, Sanitary design, Spillage proof (no spillage) during on off operations
Size	As per final P&ID
Seat cleaning Arrangement	Required Automatic
Valve Design	As Applicable
Balancing Plug	Required
Normal position	It shall be decide during detail engg. (final P&ID)
Control Unit	ASI Connectivity with ASI connector, two feedback, three solenoid
Gasket	EPDM- Food grade
Process Connection	Welded
Body Connection	Welded & Orientation shall decide later on
Process pressure	max 8 bar
Supply Air Pressure	5 to 6 bar
Tool kit and seal kit	2 set for all size -1 set of tool kit

should also be configurable from the HMI/ operator console.

Specifications for Non mix proof, changeover/ Butterfly valve	
Application	For Milk, B milk, curd, CIP chemicals, Hot water
Type of valve	Changeover/ Butter fly valve with double seat, solenoid, SS316, Sanitary design
Size	As per final P&ID
Valve Design	As Applicable
Normal position	It shall be decide during detail engg. (final P&ID)
Control Unit	ASI Connectivity with ASI connector, two feedback, solenoid valve
Gasket	EPDM- Food grade
Process Connection	Welded & B fly shall be with union at both end
Body Connection	As per design & Orientation shall decide later on
Process pressure	max 8 bar
Supply Air Pressure	5 to 6 bar
Tool kit and seal kit	2 set for all size for all type -1 set of tool kit

Specifications for CIP return pump for tank at long distance from pump	
Qty	As per below sheet
Type	Self priming, Centrifugal pump, sanitary design, Energy efficient, extended shaft
Application	Low concentrated acid, lye, Hot water
Capacity	As per given sheet
MOC	SS 316
Suction Head	0 mtr
Discharge Head	As per below sheet
Motor efficiency	IE 3
Motor rating	As applicable
Power consumption	As applicable
Support	Adjustable ball feet
Gasket	EPDM Food grade
Inlet outlet	Complete SMS Union
Mechanical seal	Single
Stationary face	SIC
Rotating face	Carbon
Impeller	As applicable
Shroud	SS 304
Accessories	One set of mech seal for each pump

Specifications of Milk Chiller

Application	Milk Chilling
Capacity	30000 Ltr/ hr
Inlet Temperature	7 Degree C
Required Outlet Temperature	3 degree in single pass
Chilled water temperature	2 Deg C max
Chilled water/ Milk ratio	1:1
MOC of Plates	SS 316L
Thickness of Plates	0.6 mm
Design pressure	8 bar
Test pressure	6 bar
MOC of gasket	HNBR/ EPDM food grade
Cladding	SS Cladding required in each block
Thermo well	Required in each Port
Port size	As per design with complete SMS union
Pressure drop	Vendor has to provide for each section

Recommended Makes-

- **SS Pipes n fittings-** Apex/Heavy metals/ IDMC/ ALFALAVAL/ Ratnamani/ Raajratna/ Bhandari Foils & Tubes/Rensa/ Cipriani Harisson
- **Pneumatic valve-** GEA/ TETRAPAK/ IDMC/ SPX/ ALFALAVAL
- **Pump-** Alfalaval (LKH)/ SPX(WS)/ IDMC/ Fristam
- **PHE-** SPX/ ALFALAVAL/ KELVION/ IDMC
- **Instruments-** E&H
- **Automation -** Siemens
- **Agitator-** ALFALAVAL/ PRG/ IDMC
- **Electrical -** L&T/ Siemens
- **Power Cables-** Poly cab/hevels/finolex/KEI
- **Control/ Instrument Cables-** LAPP
- **Pneumatics-** Festo/ SMC