

CORRIGENDUM

Minutes of the pre-bid meeting held on 20.04.2022 at 11.30 AM for the open tender called for, for the Design, Supply, Erection, Installation, Testing and Commissioning Membrane Filtration Technology based Reverse Osmosis (RO) Plant for Milk concentration for various METRO/DCMPU Dairies.

During the Pre-Bid meeting, the following points were discussed and proposed to amend the technical specification as detailed below :-

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1. GENERAL DESCRIPTION

It is proposed to install a Reverse Osmosis (RO) plant for **milk** concentration of capacity 5000 and 2000 Liters per hour along with accessories for Metro Dairies and DCMPU. The required plant capacity and locations are as follows.

“May be read as”

It is proposed to install a Reverse Osmosis (RO) plant for **Skim milk** concentration of capacity 5000 and 2000 Liters per hour along with accessories for Metro Dairies and DCMPU **for milk standardization application**. The required plant capacity and locations are as follows.

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2. SCOPE OF WORK

The input milk quality shall be as follows

Fat 3.9% – 4.2%

SNF 8% - 8.5 %

“May be read as”

The input milk quality shall be as follows

SNF 8% - 8.5 %

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TECHNICAL PARAMETERS OF THE CONCENTRATION SYSTEM

S. No.	DESCRIPTION	2000 LPH	5000 LPH
1	Application	Milk Conc.	Milk Conc.
2	Nature of process fluid	Milk	Milk
3	Inlet Process Temperature °C (Max.)	4 to 10	4 to 10
4	Separation Technology	Membrane	Membrane
5	Membrane Cut-Off to be used	RO Membrane	RO Membrane
6	Mode of Operation	Continuous	Continuous
7	Concentration Factor Whole Milk Skim Milk	1:1.6 1: 2.5	1:1.6 1: 2.5
8	Product in Feed SNF %	8 %	8 %
9	Product in Feed Fat %	4 %	4 %
10	Total Feed Solids %	12 %	12%

SIGNATURE OF THE TENDERER WITH SEAL

S. No.	DESCRIPTION	2000 LPH	5000 LPH
10	Product in Retentate SNF %	12.7 %	12.7 %
11	Product in Retentate SNF %	6.3 %	6.3 %
12	Total Retentate Solids %	19 %	19%
13	Outlet Temperature of Retentate in °C after chiller	8 to 10	8 to 10
13	Total Retentate collected in Lit/Hr	1260	3150
14	Total Permeate collected in Lit/Hr	740	1850
15	Continuous Operating Hours	10	10
16	Cleaning time Hours	3	3
17	No's of Dairy RO Membrane	12	20
18	Approximate Electric Load	23 KW	33 KW

"May be read as"

S. No	DESCRIPTION	2000 LPH	5000 LPH
1	Application	Milk Conc.	Milk Conc.
2	Nature of process fluid	Skim Milk	Skim Milk
3	Inlet Process Temperature °C (Max.)	4 to 10	4 to 10
4	Separation Technology	Membrane	Membrane
5	Membrane Cut-Off to be used	RO Membrane	RO Membrane
6	Mode of Operation	Continuous	Continuous
7	Concentration Factor Skim Milk	1: 2.5	1: 2.5
8	Product in Feed SNF %	8 %	8 %
9	Total Retentate Solids %	20 %	20%
10	Outlet Temperature of Retentate in °C after chiller	8 to 10	8 to 10
11	Total Retentate collected in Lit/Hr	1260	3150
12	Total Permeate collected in Lit/Hr	740	1850
13	Continuous Operating Hours	10	10
14	Cleaning time Hours	3	3
15	No's of Dairy RO Membrane	As per OEM Design	
16	Approximate Electric Load	23KW	33KW

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The origin of the Membranes should be from U.S.A or Japan.

"May be read as"

The origin of the Membranes should be from U.S.A/**Europe** or Japan.

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Membrane sizing needs to be 8 "dia and 46 Mill construction.

"May be read as"

Membrane sizing needs to be 8 "dia and 46 Mill construction or **as per OEM design**

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Heat exchanger/ chiller shall be of Tube in Tube to be provided to control output product temperature.

“May be read as”

Heat exchanger/ chiller shall be of Tube in Tube **/PHE** to be provided to control output product temperature.

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System Skid

All the above items like Membrane Module, Pump and CIP Tank **(excluding Panel)** shall be mounted on SS skid.

“May be read as”

All the above items like Membrane Module, Pump, **MCC with PLC panel** and CIP Tank shall be mounted on SS skid.

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1. Preferred make:

Sl.No.	Description	Make
1	Feed and Circulation Pump, Milk pump	GRUNDFOS / ALFA LAVAL/ FRISTOM
2	Motor	SIEMENS / KIRLOSKAR/ CROMPTON / OR OE SUPPLIED EFFICIENCY. IE 4 AND ABOVE
3	RO membrane	HYDRANAUTICS / ALFA LAVAL / SPX
5	Instrumentation	SIEMENS / DANFOSS /ALLEN BRADLEY YOKOGAWA

“May be read as”

Sl.No.	Description	Make
1	Feed and Circulation Pump, Milk pump	GRUNDFOS / ALFA LAVAL/ FRISTOM /SPX
2	Motor	SIEMENS / KIRLOSKAR/ CROMPTON / OR OE SUPPLIED EFFICIENCY. IE 3 AND ABOVE
3	RO membrane	HYDRANAUTICS / ALFA LAVAL / SPX/ TETRAPAK
5	Instrumentation	SIEMENS / DANFOSS /ALLEN BRADLEY YOKOGAWA/ E&H/BAUMER

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