

GWALIOR SAHAKARI DUGDH SANGH MARYADIT
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NOTICE INVITING E-TENDER

Online tenders for following items are invited by Gwalior Sahakari Dugdh Sangh Maryadit, from reputed Manufacturers/Authorized suppliers/Channel Partners available on www.mptenders.gov.in Details are available in www.mptenders.gov.in and on MPCDF's website www.mpcdf.gov.in :

Sr.	Brief Description of the Work	Qty	EMD (Rs.)	Cost of bid document
1	RENOVATION OF EXISTING POWDER PLANT AT BANMORE DAIRY PLANT DISTT. MORENA ON TURN KEY BASIS	01 Nos.	Rs.8.00 lakh	Rs.1000

Key Dates: -

Period of sale of Bidding documents	Pre Bid Meeting for Powder Plant	Last date & time for receipt of bids	Time & Date of opening of bids
From 29/08/2020 11.30 A.M. to 17/09/2020 upto 2.30 P.M	10/09/2020 Time 12.30 P.M.	17/09/2020 Time 2.30 P.M	18/09/2020 Time 3.00 P.M

Place of Pre bid meeting : Office of the Chief Executive Officer
& opening of bids Gwalior Sahakari Dugdh Sangh Maryadit
Gola Ka Mandir,, Gwalior

Corrigendum/amendment if any to this publication would appear only on the above mentioned websites and will not be published elsewhere. The tender form may be obtained from the www.mptenders.gov.in by making online payment as applicable as online charges. Chief Executive Officer, Gwalior Sahakari Dugdh Sangh Maryadit, Gwalior reserves right to accept a tender in whole or in part or reject any or all the tenders, which in their opinion justify such actions, without further explanation to the bidders .

CHIEF EXECUTIVE OFFICER
GWALIOR SAHAKARI DUGDH SANGH MARYADIT

INVITATION FOR BID (IFB)

Bid Reference	<u>RKVY/GSDS/2020-21</u>	RENOVATION OF EXISTING POWDER PLANT AT BANMORE DAIRY PLANT DISTT. MORENA ON TURN KEY BASIS	
Time Completion Period	4 months from the date of L.O.I.		
Bidding Document Sale	START	29/08/2020 11.30 am	
	STOP	17/09/2020 upto 2.30 pm	
Last Date & Time of Bid	Submission	18/09/2020 Time 2.30 pm	
	OPENING	18/09/2020 Time 3.00 pm	
Pre-Bid Meeting	10/09/2020 Time 12.30 pm		
Place of Pre-Bid Meeting & Place of Tender Opening	Office of the Chief Executive Officer, Gwalior Sahakari Dugdh Sangh Maryadit		
Address for communication	Residency Road, Gole Ka Mandir, Gwalior - 474005		
EMD. VALUE (Rs.)	Rs.8.00 lakh		
Cost of bid document	Rs.1000.00		
Contents			
• Annexure-I	INSTRUCTIONS TO BIDDERS		
• Annexure-II	Terms & Conditions		
• Annexure-III	Scope of work & Performance criteria		
• Annexure-IV	Process Performance and Consumption Guarantees		
• Annexure-V	BATTERY LIMITS		
• Annexure-VI	Deviations from Technical Requirement		
• Annexure-VII	Drawings, Data & Documents		
• Annexure-VIII			

ANNEXURE-I

INSTRUCTIONS TO BIDDERS

Tender Ref. /RKVY/GSDS/2020-21

**ONLINE TENDERS ARE INVITED RENOVATION OF EXISTING POWDER PLANT
AT DAIRY PLANT BANMORE – DIST. MORENA ON TURN KEY BASIS**

1. The Tenderer are requested to go through the tender document's instructions and various terms and conditions contained in Annexure-I to II. It may be noted that no conditions or stipulations to the contrary or which are inconsistent will be accepted. Tenderer are requested to ensure that all such schedules along with questionnaire (duly filled-in), are submitted along with their offer. The Tenderer should also note that in absence of any of the schedules, their offer is likely to be rejected.
2. All the details to be filled online as per tender document format and tenderer should read all instructions for compliance before submitting his tender.
3. All tenders must be accompanied with EMD as specified in the tender document.
4. Tenders will be opened in the presence of Tenderers representatives who choose to attend on the specified date and time.
5. In the event of the date specified for tender document receipt and opening being declared as a closed holiday for purchaser's office, the due date for submission of tenders and opening of tenders will be the following working day at the appointed times.
6. Prospective bidder must send queries 2 days before Pre Bid Meeting .In Pre bid meeting only those issues will be entertained. The bidder or his official representative is advised to attend a pre bid meeting which will be convened at the office of CEO GSDSM

Venue of the meeting : Office of the CEO,GSDSM,
Gole Ka Mandir,
Gwalior

Date of Pre bid meeting : 10/09/2020

Time : 12.30 pm

ANNEXURE-II

TERMS & CONDITIONS

1. ELIGIBILITY CRITERIA FOR TENDERER

This tender is open for Registered and reputed manufacturer/Authorized suppliers/Channel partners who provide satisfactory evidence:

- a. **Supplied/installed/epaired minimum 05 nos of dryer/Powder plants in last five years out of which al least 02 nos of boilers installed in cooperative dairies**
- b. Preference will be given to Indian manufacturer so that stage wise inspection of Equipment can be offered to check the quality of product.
- c. Preference will be given to the tenderer having Separate Spare & Service Dept in MP and having sufficient Number of service Engineers.
- d. Energy efficiency of individual equipment shall be calculated for steam & power comparatively and system as a whole.
- e. Product losses during processing and product manufacturing for individual equipment and ultimately in the effluent system

2. EARNEST MONEY

- 2.1. **The supplier shall deposit the Earnest Money amount (EMD) of amount Rs. Rs.8.00 lakh only online on www.mptenders.gov.in.**
- 2.2. In case, the supplier withdraws his offer during the validity period or after placement of order, the EMD amount shall be forfeited.
- 2.3. EMD shall be returned with in 90 days to the un-successful Tenderer, as soon as possible, after the tender is decided and on execution of agreement with successful tenderer. No interest shall be paid on EMD amounts. EMD of sussesfull bidder will be returned after completion of work and on submission of performance bank guarantee of 10% of total project cost.

3. TAXES AND DUTIES

All taxes and duties should be included in the prices quoted. Any kind of taxes and duties shall not be paid extra. However, the breakup of taxes & duties must be indicated separately.

4. AMENDMENT IN SPECIFICATIONS

The Gwalior Sahakari Dugdh Sangh Maryadit Gwalior-. may revise or amend the specification and drawing, prior to the date notified for opening of Bid of tender. Such Corrigendum/amendment if any to this publication would appear only on the above

mentioned websites and will not be published elsewhere. Bidders are advised to visit web site frequently to see Corrigendum/amendment if any

5. DELAYED/ LATE SUBMISSION OF TENDERS

The Gwalior Sahakari Dugdh Sangh Maryadit Gwalior shall not assume any responsibility for any postal delays either for the late receipt of documents . No Extension in time shall be granted on such grounds.

6. ALTERNATIVE TENDERS

Tender should be submitted as per intent of tender documents; any alternative offers are liable for rejection.

7. DOCUMENTS TO BE SUBMITTED WITH THE TENDER (MANDATORY)

- a. Copy of Registration Certificate of the Firm / Organization (Tenderer).
- b. Permanent Account Number (PAN) & GST7 registration
- c. Clint list
- d. Completion/Performance certificates along with Purchase Order of Same Work last five year.

8. ALTERATIONS/CORRECTIONS IN TENDERS

Any alteration/correction in the tender document should be counter-signed. Further, no post tender alteration/correction shall be entertained

9. INCOMPLETE TENDERS

Tender which is incomplete or obscure in any form is liable for rejection.

10. ACCEPTANCE OF PART/WHOLE TENDERS-RIGHTS THEREOF

Gwalior Sahakari Dugdh Sangha Maryadit reserves the right to accept/ reject wholly or partly any tender without assigning any reason whatsoever. The Gwalior Sahakari Dugdh Sangha Maryadit in this regard shall not entertain any correspondence.

11. AMBIGUITIES IN CONDITIONS OF TENDERS

In case of ambiguous or self-contradictory terms/conditions mentioned in the tender, interpretation as may be advantageous to the Gwalior Sahakari Dugdh Sangha Maryadit shall be taken without any reference to the tender.

12. DISQUALIFICATION OF TENDERS

Tender which gets opened before the due date as a result of improper or no indication having been given on the cover to indicate that it is a tender, will be disqualified.

Tenderer will not be permitted to change the substance of his tender on post interpretation/improper understanding grounds. This includes post tender price changes/modifications etc. after opening of Price Bid. In such events, otherwise, that is, when a supplier does not comply, tender will be rejected.

13. DEVIATIONS FROM TERMS & CONDITIONS

Offers with deviations in the terms of payment, liquidated damages, EMD and performance guarantee are liable to be rejected out rightly.

14. SUBMISSION & OPENING OF E.M.D. & TECHNICAL BID

Bidder has to submit on line EMD receipt, Technical bid form, required documents to prove eligibility as per point no.-1 and documents as per point no.-7 .And also submit the hard copy of these documents before on line opening of tender.

Hard copy of Price bid not required, bidder has to submit Price bid only online.

.The concerned tender committee of GSDS shall first open the Technical Bid of all the Tenderer and verify the Earnest Money Deposit and Technical Bid submitted by the Tenderer. In case, the requirements are incomplete in EMD and Technical Bid. Tender shall be rejected of Tenderer. After technical clearance of the bid by tender committee , price bid will be opened.

15. VALIDITY OF TENDERS

The offers shall be valid for 90 days. Validity of the offer shall be counted from the date of opening of tenders. Those who do not agree for a validity of 90 days will do so at their own risk and their offers are liable to be rejected.

16. AUTHORISATION/LOCAL REPRESENTATIVE

Only authorized representative, possessing necessary authority letter from the supplier who have participated in the tender shall be allowed to attend the tender opening.

17. ACCEPTANCE OF TENDER

- a. Gwalior Sahakari Dugdh Sangh Maryadit may reject any or all tenders or to accept any tender considering advantageous to Gwalior Sahakari Dugdh Sangh Maryadit Whether it is the lowest offer or not.

- b. Gwalior Sahakari Dugdh Sangh Maryadit may split the quantities against the tender on more than one supplier for the same item. The Gwalior Sahakari Dugdh Sangh Maryadit shall assign no reasons for this and the same will be binding on the Tenderer.

18. PAYMENT TERMS:

- a. 50 % against the safe receipt of material at site.
- b. 30 % after Installation, Commissioning and successful trial run of supplied equipment.
- c. 20% after submission of performance bank guarantee of 10% of total project cost with validity not less than one year from date of commissioning. This payment will be processed after submission of Invoices, Delivery challans by supplier.

19. PRICES AND STATUTORY LEVIES

- (i) **The Tenderer should quote price F.O.R. Destination including Erection, Installation & Commissioning and trial run charges on turn Key basis.** However, Item wise or machine wise price break up of following elements may be indicated separately :-
 - (a) Unit Ex-works/Ex-Godown rate including packing and forwarding.
 - (b) Including GST Tax
 - (c) Including Freight charges
 - (d) Any other levy/taxes.
- (e) No revision on any account shall be allowed during execution of the order.
- (ii) Prices offered by the tenderer should be firm and free from all escalations. The prices offered should be valid at least for a period of 90 days from the date of tender opening. Rate approval shall be communicated within 30 days from the date of tender opening.
- (iii) The Material to be supplied shall be dispatched to site by Road transport under intimation to the purchaser and consignee. Depending upon the type of material, the supplier shall have to carry out proper packing/crating to avoid damage/breakage during transit. Road permit for dispatch of material if required will be sent by GSDS on written request from supplier.

After rate approval, the party shall have to execute an agreement on a non-judicial stamp paper worth Rs. 1000/- to be executed with Gwalior Sahakari Dugdh Sangh Maryadit, Gwalior.

20. TRANSIT RISK

- a. Responsibility regarding covering of risks during transit of material shall entirely be on the supplier. The GWALIOR SAHAKARI DUGDH SANGHA MARYADIT, GWALIOR-. shall, in any case, not bear the transit risks/ transit insurance charges.
- b. Insurance shall be arranged by the supplier.

21. SUBMISSION OF DRAWING AND LITERATURE

All the relevant drawings, layouts shall be submitted along with supply of machines. One set of drawing, Descriptive Literature and instructions Manual for Erection, Commissioning and maintenance of the equipments ordered, shall be supplied.

22. DELIVERY

Supply, Erection, Installation & Commissioning shall be commenced within 4 months (including rainy season) from the date of receipt and acceptance confirmation of order or from the date of contract agreement whichever is applicable. In case of any delay due to assembling or any other technical reasons, supplier will have to communicate in advance in written to the CEO, Gwalior Sahakari Dugdh Sangh Maryadit, Gwalior.

23. FORCE MAJEURE

Force majeure condition is herein defined as:-

- (a) Natural phenomena, such as floods, draughts, earth-quakes and epidemics.
- (b) Act of any Government Authority, domestic or foreign, such as war, quarantines, embargoes, licensing control or production or distribution restrictions.
- (c) Accident and disruptions such as fires, explosions, increase in power cut with respect to date of tender opening, break-down of essential machinery or equipments etc.
- (d) Strikes slow down, lockouts continuing for more than three (3) weeks.
- (e) Failure or delay in the supplier's source of supply due to force majeure causes enumerated at (a) to (d) above, provided the supplier produces documentary evidence to show that there were no other alternative sources of supply available to him or if available, the lead time required was likely to be longer than the duration of the Force Majeure at the normal source of supply.

(f) Any cause which is beyond the reasonable control of the supplier or purchaser as the case may be.

All the provisions of this clause shall apply whether the disrupting cause is total or partial in its effect upon the ability of the supplier to perform.

24. The original bills should be forwarded to the paying authority and should be marked "ORIGINAL". The bill should indicate Sales Tax Registration Number and date allotted to him under Sales Tax Act.

25. The invoice in triplicate with relevant documents such as Material Receipt in good condition etc. should be submitted to GWALIOR SAHAKARI DUGDH SANGH MARYADIT, GWALIOR.

26. PERFORMANCE GUARANTEE

a. If during the course of 18 months subsequent to the date of receipt of consignment or 12 months from the date of commissioning whichever is earlier (wherever applicable) any of the goods found to be defective in materials or workmanship or develops defects during service, they will have to be replaced by the supplier, free of all charges. All necessary arrangements on these accounts will be made by the supplier.

b. The said material if required to be replaced, shall be collected by the supplier/ firm from Area Stores/ work site at their own cost and at their own responsibility. These materials will like-wise be returned duly repaired/ replaced and tested subsequently by the supplier to the destination indicated on "FREIGHT PAID BASIS" at their cost in a reasonable time of 30 days from the date of intimation. The guarantee period as stipulated in clause 32.1 above shall also be applicable for repaired/replaced material, which shall however be counted afresh from the date of its delivery in our stores/site.

c. Further, it is clarified that all the charges towards supply of fabrication materials including packing, forwarding, loading, unloading shall be borne by the supplier. The amount deposited under security deposit clause shall also cover the performance guarantee of the material.

All equipment/ line materials reported failed within the specified guarantee period may be replaced free of cost by the supplier.

d. Actual cost of dismantling and replacement of these equipments/ materials with the new ones may be charged to the supplier's account.

- e. To and fro transportation cost of such failed equipment may also be borne by the supplier/ supplier.
- f. In the event of the supplier's inability to adhere to the aforesaid provisions, suitable penal action will be taken, which may include blacklisting of the firm for future business with the GWALIOR SAHAKARI DUGDH SANGH MARYADIT, GWALIOR for a certain period

27. **COMPLETENESS OF EQUIPMENTS** The equipment/material shall be completed in every respect with all minor fittings and accessories, even though these may not be specifically mentioned in the purchaser's specifications or the tender's offer. The supplier shall not be eligible for any extra price in respect of such minor fitting and accessories which can be considered as an essential part of the basic equipment even though not specifically mentioned in the specification or in the offer.

28. **LIQUIDATED DAMAGES:**

Delivery date are fixed for supply of material they shall be strictly adhered too. In case they are not followed, or in case of delay in execution or non-execution of the order, the Dugdha Sangh reserves the right either to cancel the order and make alternative purchases from other sources, at the risk and cost & expenses of the defaulting supplier. In case the supplies are not affected as per the schedules, the liquidated damages may be charged on the goods not so delivered as under:-

Sl.No.	Duration of delay	Liquidated Damages
1.	Upto 15 days	1% cost of the unit.
2.	Between 16 to 30 days	2% cost of the unit
3.	Beyond 30 days	Upto 5% cost of the unit.

29. **EXTENSION ORDER**

The GWALIOR SAHAKARI DUGDH SANGHA MARYADIT, GWALIOR Reserves right to place an extension order for any additional quantity to the extent of 100% quantity of the original order on the same rates, terms and conditions within six months from the date of order.

30. **RECOVERIES FOR LIABILITIES AGAINST OTHER CONTRACTS**

All amount recoverable from the successful Tenderer against earlier contracts including orders on sister concern with the GWALIOR SAHAKARI DUGDH SANGHA MARYADIT, GWALIOR will be adjusted from payment due against the contract that may be awarded under this specification.

31. COMPLIANCE OF REGULATIONS

The supplier should execute and deliver such documents, as may be needed, by the purchaser in evidence of compliance. All laws, Rules and Regulations are required to be incorporated in this reference. Any liability arising out of contravention of any of the laws shall be the sole responsibility of the supplier and the purchaser shall not be responsible in any manner whatsoever.

32. CANCELLATION OF ORDER

31.1 The GWALIOR SAHAKARI DUGDH SANGHA MARYADIT, GWALIOR May upon written notice of default, terminate contract in the circumstances detailed hereunder:-

- a. If in the opinion of the GWALIOR SAHAKARI DUGDH SANGH MARYADIT, GWALIOR the supplier fails to deliver the material within the time specified or during the period for which extension has been granted by the GSDS.
- b. If in the opinion of the GWALIOR SAHAKARI DUGDH SANGH MARYADIT, GWALIOR the supplier fails to comply with any of the other provisions of this contract or material is found not in accordance with prescribed specifications and or the approved samples.
- c. As a result of stage inspection, if applicable, it is revealed that material and/ or, workmanship is substandard which is likely to affect the performance of the finished product, a notice would be served by the GWALIOR SAHAKARI DUGDH SANGH MARYADIT, GWALIOR to the supplier to suspend further activities and to take urgent steps towards corrective measures, failing which the entire order would be cancelled.

31.2 In the event of such termination, GWALIOR SAHAKARI DUGDH SANGH MARYADIT, GWALIOR shall exercise its discretionary power as:-

- a. To recover from the supplier the agreed liquidated damages.

OR

- b. To purchase from elsewhere after giving due notice to the supplier on account and at the risk of the supplier such stores/ material not so delivered or others of similar description in respect of consignment not yet delivered.

OR

- c. To cancel the contract reserving GWALIOR SAHAKARI DUGDH SANGH MARYADIT, GWALIOR right to recover damages.

31.3 Notwithstanding that the powers under clause 31.2 (a, b & c) referred to above, are in addition to the rights and remedy available to the GWALIOR SAHAKARI DUGDH SANGHA MARYADIT under the general law of India relating to Contract.

31.4 In the event of risk purchase of stores of similar description, the opinion of the GWALIOR SAHAKARI DUGDH SANGHA MARYADIT shall be final. In the event of action taken under clause above, the supplier shall be liable to pay for any loss, which the GWALIOR SAHAKARI DUGDH SANGHA MARYADIT may sustain on that account but the supplier shall not be entitled to any saving on such purchases made against the default.

31.5 The decision of the Chairman, GWALIOR SAHAKARI DUGDH SANGHA MARYADIT, shall be final regarding the acceptability of the stores supplied by supplier and the GWALIOR SAHAKARI DUGDH SANGHA MARYADIT shall not be required to give any reason in writing or otherwise at any time for the rejection of the stores/ material.

31.6 In the event, GWALIOR SAHAKARI DUGDH SANGHA MARYADIT does not terminate the order as provided in clauses above, the supplier shall continue execution of order, in which case he shall be liable to the GWALIOR SAHAKARI DUGDH SANGHA MARYADIT.

33. ARBITRATION

In case of any dispute, if arises between the parties relating to any terms and conditions of the Tender / Agreement and or regarding the agreement /tender before or after the filling of tender and /or execution of the agreement, any party may refer the dispute to a sole arbitrator who will be the Chairman of Gwalior Sahakari Dugdh Sangh Maryadit, Gwalior or a person nominated by him whose decision and award shall be final and binding to both the parties. The arbitration proceedings shall be under and accordance with provision of Arbitration and Conciliation Act 1996.

Supplies under the Contract shall be continued by the supplier during the arbitration proceedings, unless otherwise, directed in writing by the Purchaser or unless the matter is such that the work cannot possibly be continued until the decision of the arbitrators or of the Umpire, as the case may be, is issued.

34. JURISDICTION

Any dispute or difference, arising under, out of, or in connection with this tender/contract order shall be subject to exclusive jurisdiction of competent court at Gwalior only.

35. RANDOM TESTING-

Inspection of material after receipt or waiver of inspection will not relieve the supplier from his responsibility to supply the material strictly in accordance with the specification.

The GWALIOR SAHAKARI DUGDH SANGH MARYADIT, GWALIOR

In case, the samples fail to withstand the required test, the entire lot will be liable to be rejected (i.e. unused material so supplied) and the supplier will have to refund the amount paid, including all taxes and duties, as well as the test charges thereof, after inspection. Such quantities or rejected material as identified, shall be removed by the supplier and replaced in full at his own cost.

36. CORRESPONDANCE:-

Copies of all important correspondence on subject should be sent to “CEO, Gwalior Sahakari Dugdh Sangh Maryadit, Gwalior”.

37. CONSEQUENCES OF BREACH OF AGREEMENT

If the authorized person of the unit or a partner in the contract/tendering firm commit breach of any of the conditions of agreement it shall be lawful for the Chief Executive Officer, Gwalior Sahakari. Dugdh Sangh Mydt, to cancel the contract and purchase or authorize to purchase stores at the risk and costs of the unit.

38. DISPUTE ARBITRATION & FINAL AUTHORITY

- a. It should be clearly understood that in the event of any dispute between supplier and purchaser due to deviation from any terms and conditions of work order & contract agreement, the decision of the Chairman, Gwalior Sahakari Dugdh Sangh Mydt., in this respect will be final and binding on the both supplier and purchaser.
- b. For matters of dispute, relating to the interpretation of the above clause, the decision of the Chief Executive Officer, Gwalior Sah. Dugdh Sangh Mydt, shall be final and binding on all the concerned

ANNEXURE-III

A. TECHNICAL SPECIFICATION & SCOPE OF SUPPLY FOR MODIFICATION OF EVAPORATING PLANT

I. Existing Technical Specification

S. No.	Particulars	Unit	Data
1.0	Product		Skim milk
2.0	Feed rate	kg/hr	4500 – 5000
3.0	Initial solids	%	8.5
4.0	Concentrate solids	%	40.0
5.0	Concentrate output	Kg/hr	956- 1062
6.0	Water Evaporation	Kg/hr	3544- 3938
7.0	Steam Consumption @ 6 Bar	Kg/hr	886- 984
8.0	Steam Consumption for High Heater @ 90 Degree C	kg/hr	240 – 265

II. Proposed Technical Specification (After Refurbishment Evaporator)

S. No.	Particulars	Unit	Data
1.0	Product		Skim milk
2.0	Feed rate	kg/hr	5735
3.0	Initial solids	%	8.5
4.0	Concentrate solids	%	45.0
5.0	Concentrate output	kg/hr	1083
6.0	Water Evaporation	kg/hr	4,652
7.0	Steam Consumption	Kg/hr	1163
8.0	Steam Consumption for High Heater	kg/hr	300

Note: 1) Temperatures are indicative only.
2) Consumption and performance figures are valid with a tolerance of $\pm 10\%$.

B. OBJECTIVE:

Existing Capacity: 7 – 8 MTPD Powder on SMP & not suitable for whole milk powder & Fat filled Powder Manufacturing

OBJECTIVE:

- a. To enhance the capacity to 10 MTPD on SMP & 12.50 MTPD WMP.
- b. Instant Quality of Powder as under:

PRODUCT QUALITY

Parameter	Skim Milk Powder	Whole Milk Powder
Moisture	3.5%	2.8%
Fat	< 1 %	≥ 26%
SNF	> 96 %	71.20%
Sugar	Nil	Nil
Bulk Density @ 100 Taps with machine	0.4-0.6	0.4-0.6
Scorched Particles	Disc A	Disc A
Wettability IDF after 48 hr. @ 20 deg C	After 48 hours of storage < 30 sec	After 48 hours of storage < 30 sec
Insolubility Index	< 0.1 ml	< 0.1 ml
Dispersibility min	94%	94%
Particle size distribution Fraction < 125 µm Fraction > 450 µm Mean particle size µm	20 % 5% 180	20% 5% 180
(WPNI) Whey protein nitrogen index	2.5 –6.5	2.5 to 3.0
Free fat %		Max 0.5
Sludge 25 Deg. c	Max 0.1	Max 0.1
Coffee test @80 deg. c	No grain on the wall of the beaker	No grain on the wall of the beaker
Hot water test	Max 0.8	Max 0.8
Thermopiles counts	< 1000	< 1000
Mesophilic	< 1000	< 1000

- c. Lower specific steam consumption (30% Less compared to existing steam consumption on SMP/WMP)

B. TECHNICAL SPECIFICATION & SCOPE OF SUPPLY FOR MODIFICATION OF EVAPORATING PLANT

1. FEED PUMP

Type	:	Centrifugal Pump, direct driven
Quantity	:	02 No.
Drive	:	TEFC Motor.
MOC	:	Wetted Parts in AISI 304.
Shaft seal	:	Single Mechanical seal
Accessories	:	Common Base Frame., Quick opening end cover for easy cleaning and inspection

2. DIRECT CONTACT REGENERATIVE HEATER

Capacity	:	Suitable
Quantity	:	01 Set
MOC	:	AISI 304
Type	:	Single stage

3. MILK PASTEURIZER- DIRECT STEAM TANGENTIAL SWIRL HEATERS

It shall be used to heat the milk to the required pasteurization temperature by tangential injection of steam in an on-line piping system.

Capacity	:	Suitable, Pasteurization temp. 90 deg. C
Quantity	:	01 No
MOC	:	SS 304
Type	:	Direct steam injection

➤ REPAIR OF THERMO VAPOUR RE-COMPRESSOR

4. STEAM CULINARY FILTER FOR DSI

MOC of filter housing	:	SS 304
Quantity	:	01 No
MOC of filter element	:	Sintered SS 316
Micron rating	:	3 micron

➤ Repair/Installation of DSI Unit in Flash Vessel

5. HOLDER TEMPERATURE TREATMENT

It shall be used to hold the milk for a required holding time and executed as holding tube of required length. Selection of required holding time based on type of powder to be produced and as per the design requirement shall be done with flow plate and swing bends.

Quantity : 01 Set
MOC : AISI 304

6. DSI/ FLASH VESSEL TRANSFER PUMPS

Type : Centrifugal Pump, direct driven
Quantity : 02 No.
Drive : TEFC Motor.
MOC : Wetted Parts in AISI 304.
Shaft seal : Double Mechanical seal
Accessories : Common Base Frame., Quick opening end cover for easy cleaning and inspection.

7. INSULATION AND SS 304 CLADDING FOR CAL 01 AND TVR

Quantity : 01 No.

8. CAL 01 TRANSFER PUMPS

Type : Centrifugal Pump, direct driven
Quantity : 02 Nos.
Drive : TEFC Motor.
MOC : Wetted Parts in AISI 304.
Shaft seal : Double Mechanical seal
Accessories: Common Base Frame., Quick opening end cover for easy cleaning and inspection.

9. THERMO VAPOR RECOMPRESSOR

Thermo Vapor compressor (TVR) shall be provided to compress and refeed a part of vapors generated in the 1ST effect back to the first effect chest. Incoming steam shall be used for compressing the vapors.

MOC of Head : AISI 304
Quantity : 01 No.
Mixing passage/diffuser : AISI 304
Motive nozzles : AISI 304
Steam chest : AISI 304
Flanges : CS

10. VACUUM PUMP

A water ring type vacuum pump is provided for maintaining desired Vacuum level in the evaporator system.

Type : Water Ring, Single Stage
 Quantity : 02 No
 Drive : TEFC Motor, direct coupled (flexible coupling)
 MOC : Casing with SS lining, impeller and shaft of the pump shall be of SS and side plate shall be of SS.
 Shaft Seal : Gland Packing
 Accessories : Common base frame, discharge silencer, non return valve, vacuum gauge, inlet water pressure Gauge.

11. MODIFICATION/ NEW VAPOR DUCTS

MOC : SS 304.
 Quantity : 01 lot
 Gaskets : Food Grade Rubber.

12. MODIFICATION/ NEW PRODUCT /CONDENSATE/NON CONDENSABLE PIPES, VALVES AND FITTINGS

Quantity : 01 lot
 a) SS pipes Material : AISI 304
 b) SS Fittings Material : As per SMS standards AISI 304
 c) Pipe clamps : Shall be quick opening type
 d) Pipe Supports Type Material : Square sections, supported from walls, ceilings & floors, SS box section in production area. In other areas, MS galvanized /painted box section
 f) Manual Valves Type Material : Two way/three way manually operated plug valves AISI 304
 g) Repair of Pre- Heater :
 f) Repair of Tubular Heater :
 h) Changing of Milk Tubes of 1st and 3rd Calendria
 i) Change of all gasket sets

13. STEAM PIPING (FROM HEADER TO EQUIPMENTS)

Quantity : 01 lot
 Steam piping from the Header to TVR and DSI shall be provided with the necessary size.

IBR PIPING

MS heavy duty, scheduled 40 pipes, with insulation and Al cladding. All fittings will be of CI steel body with SS working parts. All valves will be of piston type.

NON IBR STEAM PIPING

MS heavy duty (C class) with insulation and Al cladding.

All valves & fittings will be CI/SGI body with SS working parts. All valves will be of Piston type.

Mineral wool/ Glass wool will be used as insulating material.

Aluminum sheet will be used as pipe insulation cladding.

14. COMPRESSED AIR AND VACUUM PIPING (FROM HEADER TO EQUIPMENTS)

Quantity	:	01 lot
Sizes	:	As Required
Material	:	GI / MS 'C' Class
Valves	:	CS valves

15. INSTRUMENTATION AND CONTROL PANEL

Quantity : 01 Set

An Instrument panel shall be of SS 304

The Panel shall be pre wired and shall consist of contractor, fuses, relays, push button, indication lamps incoming voltage measuring voltmeter, Ammeter for total current drawn
It shall consist of:

Mimic diagram of the Evaporator

Auto Feed Controller with VFD and mag flow meter

Steam Pressure Control Loop for Calandria TVR

- Pressure Transducer
- PID Controller
- Steam Control valves with I/P Converter
- AFR, tubing & fitting

Temperature Control Loop for DSI

- Temperature Transducer
- Temperature Controller
- Steam Control valves with I/P Converter
- AFR, tubing & fitting

Local Instrumentation and Indicators

Dial type Thermometer indicating temperature of

- Cooling water Inlet / Outlet temperature,
- First Effect calandria Chest,
- All vapor separators (0 to 110°C).

Dial type Pressure Gauge

For TVR (0 to 9 bar g): 1 No.

For DSI (0 to 5 bar g): 1 No.

Dial type vacuum gauge

- For vapor separator

➤ Change of all Pressure and Temperature Gauges)

➤ Change of 4 Pneumatic Valves

22.0. UPGRATION OF ELECTRICAL PANEL

MOC: CS with powder coated

Functional requirements: To receive, control and distribute electrical power at 415+_10% V. 50 Hz, 3 faze AC in sheet steel housing.

Design requirement and scope of supply:

Housing details: The switch board will be fabricated out of 14/18 SWG sheet steel and will consist of free standing front open-able panel arranged to form a continuous line-up of uniform height. Cold rolled sheets will be doors and front covers. Front doors will be hinged type and bus bars and cable alleys covers will be bolted type.

The complete panel would be sub-divided into different sections and each section will have its own control circuit with fuse and indication.

Switch board will be extensible at both the ends by addition of vertical sections. Ends of the bus bars will be suitably drilled for this purpose. The switch board will be totally enclosed, dust weather and vermin proof. Gasket of durable material will be provided for doors and other openings. Suitable hooks will be provided for lifting the boards. These hooks when removed will not leave any opening in the board. All hardware will be corrosion resistant. All joints and connections will be made by galvanized zinc passivated or cadmium plated high tensile strength steel bolts, nuts and washers secured against loosening. The switch-board will be in cubical design (each feeder components are housed in individual cubical).

Painting: Powder coated

Name plates: Aluminum anodized plates fixed with screws at each outgoings/incoming

BUSBAR SIZING CONNECTIONS AND SUPPORTS:

The bus bars will be made from high conductivity electrolytic Copper. The bus bars and supports will be capable of withstanding the rated and short circuit current. Minimum size of main power bus bars will be 200 amperes rating. Maximum current density permissible for Copper bus bars will be 0.8 amps/sq. mm. An earthing busbar of minimum 150 sq. mm section Copper will be provided outside panel at bottom throughout the length of the panel.

The bus bars will be provided with neat shrinkable insulating sleeve. Supports for bus bars will be made of suitable size hylem sheets/epoxy compound blocks and these would be adequate in number so as to avoid any snag in the bus bars. Minimum clearance between phase to phase will be 25 mm and that between phase to neutral/earth will be 20 mm.

POWER CONNECTIONS

To provide power inter-connections within the panel board. For each outgoing motor feeder, suitable size terminal blocks (min. 3 ways) will be provided inside its cubical and wiring up to these from contactors will be done by panel supplier.

For incoming and outgoing feeders of the MCC Aluminum conductor cable will be used and hence the panel will be designed.

To prevent accidental contracts, all interconnecting cables/bus bars and all terminals also will be shrouded.

Standard color-code of red, yellow and blue for phases and black for neutral will be followed for all bus-bars/conductors.

AUXILIARY WIRING AND TERMINALS

Wiring for all controls, protection, metering, signaling etc. inside the switch-board will be done with 850 volts grey color PBVL insulated copper conductors.

All control wiring will be provided with necessary cable glands/lugs at both ends.

Conductors will be terminated using compression type lugs. Each termination will be identified at both type ends by PVC ferrules.

Control wiring for motor feeders would be such that the "green" light of feeder is "ON" only when control as well as power circuit of feeder is "ON".

SWITCH GEARS

- Air circuit breakers (ACBS) – above 800 Amps
- Molded case circuit breakers (MCCB) - above 32 Amps, MPCB (upto 32A)
- Contactors
- Protective devices
- Timers
- Push buttons (PBs)
- Indication lamps
- Current transformer (CTs)
- Measuring instrument

SPECIAL REQUIREMENT

- All motor feeders above 8.5 HP would have star delta starters and below 10 HP would have DOL starters.

- Connections to various pumps are through local de-contactors, provided near the pumps.
- All motor feeders would be provided with MPCBs/ MCCBs.
- All the power contactors of Star-Delta starters would be selected as per type-2 co-ordination.
- If the outgoing feeder rating is higher than 32 amps. MCCB with minimum breaking capacity 25 KA would be provided.
- Whenever remote control is provided for motor feeder only red push button for "OFF" would be provided on the MCC.
- Motor starter would be suitable for AC 3 duty.
- Maximum length of a shipping section of the panel would be 4000 mm.
- Remote push button stations will be provided as per requirement.

RUBBER MATS IN-FRONT OF MCC IS TO BE PROVIDED.

Power Capacitor Banks: The power capacitor banks will be used to improve the power factor of an electrical system with automatic power factor corrector and MCCB incomer.

LT Power cables: Power cables for use on 415 V systems would be of 1100 v grade, copper conductor, PVC insulated PVC sheathed.

Cable tray: 1 Lot

Cable trays include GI cable trays of suitable sizes for laying power and control cables.

SS Shrouds for motors Quantity : 01 Set

23. COOLING WATER PUMP

Capacity : Suitable
 Quantity : 2 Nos. (1 W+1 S)
 Type : Centrifugal type in CI construction with Bronze impeller.

24. COOLING WATER PIPING

Material : MS/ GI 'B' Class
 Quantity : 01 lot
 Valves : CI butterfly / ball valves

25. Installation of PRS in Steam Line

26. Renewal Work of Supply return condensing water of spray and with all required valves and pump.

27. Rotary Type Machine

Tube Size : 38 MM
 Cleaning Length : 30 Feet Min.

C. TECHNICAL SPECIFICATION & SCOPE OF SUPPLY FOR MODIFICATION OF SPRAY DRYING PLANT

1. FEED PUMP

MOC : SS 304
Quantity : 1 No.

It shall be used for pumping concentrate from the concentrate tank (feed tank) to the high pressure pump through feed filter.

2. HIGH PRESSURE PUMP CUM HOMOGENIZER

Quantity : 1 No.
Product : Milk Concentrate
Pressure : 400 bar
Application : To pressurize the feed for atomization purpose.

(Condensed Milk Positive Pump with pneumatic valve and V.F.D.)

Liquid End

- Sanitary design for cleaning in place (CIP) with:
- Three-piece valve housing in duplex stainless steel
- Pump valves in Stellite, ball type, spring-loaded, reversible seats in Stellite
- Plungers in solid ceramic material
- Plunger seals, square braided packings, max temperature 105 degrees C
- Plunger cooling/lubrication, closed, rear outlet, piping between plungers/cylinders in stainless steel.
- O-rings in EPDM - max. temperature 105 degrees C
- Inlet/outlet connections, flanged-on straight pipe for welding
- Pressure gauge for homogenizing pressure/total pressure indication
- Adapter block carrying over-pressure relief valve and pressure gauge.
- Over-pressure relief valve set at 480 bar
- Safety guard round the valve housing
- Plexi glass plunger well cover

3. CHANGE OF ROTARY ATOMISER BY PRESSURE NOZZLE SYTEM

A. PRESSURE NOZZLES WITH ORIFICE AND SWIRL BODY

Quantity : 03 Set
Make : Imported, Spraying system USA

B. HIGH PRESSURE PN. VALVE

Quantity : 03 Nos.
MOC : SS 304

C. FLEXIBLE HOSE PIPE WITH ADAPTER, UNION/FLANGES

Quantity : 03 Nos

D. HIGH PRESSURE HEADER WITH HIGH PRESSURE PIPES, HIGH PRESSURE UNION, HIGH PRESSURE FLANGE ETC.

Quantity : 01 Set

E. NOZZLE COOLING FAN WITH MOTOR

Quantity : 01 No.

MOC : MS

Operating temp : 20 deg C

(Change of rotary atomizer by pressure nozzle system as per sr. No. 3 to 7)

4. AIR DISPERSER

Quantity : 01 No.

MOC : AISI 304

Placed in the center of the chamber ceiling. The Special designed construction gives a uniform distribution of the air in the chamber and secures a well-defined air velocity profile around the atomizer at a moderate pressure loss. The air enters the chamber via a Vertical inlet duct .Air flow direction is maintained vertically down co-current to feed by means of special Wire Mesh. The air distributor hot air contact parts are made of stainless steel.

5.1 AIR FILTERS ON AIR INLET

Quantity : 01 Set

MOC : SS 304

With all standard fittings, to be placed after second stage of filter.

The air filtration shall be in three stage.

1 Pre filtration 2. Filtration (Fine) 3. HEPA Filtration.

➤ CHANGE/REPAIR OF STEAM VALVES

6 PROVIDING OF NEW FBD SYSTEM

A. IBD HEATING FAN WITH MOTOR

Quantity : 01 No.

MOC : MS

Of the centrifugal type with fan and motor assembled on a common base frame and consisting of:

Housing with inspection opening and drain

- Impeller, statically and dynamically balanced
- Shaft with heavy duty ball/roller bearings, grease lubricated
- Totally enclosed, fan cooled motor
- V-belt drive with safety guard
- Base frame with vibration dampers
- Flexible connections for air inlet and outlet

The fan, including housing, impeller and base frame are made of painted carbon steel with an anticorrosion paint.

B. AIR HEATING SYSTEM (FOR DRYER CHAMBER)

Quantity : 01 No.

For indirect heating of the supply air. The air heater is designed with special attention to high thermal efficiency and a low pressure drop

The air heater consists of:

- Steam heating coil made of SS with Al fins
- SS housing
- Necessary connections complete with flanges

C. FBD COOLING FAN WITH MOTOR

Quantity : 01 No.
MOC : MS

Of the centrifugal type with fan and motor assembled on a common base frame and consisting of:

Housing with inspection opening and drain

- Impeller, statically and dynamically balanced
- Shaft with heavy duty ball/roller bearings, grease lubricated
- Totally enclosed, fan cooled motor
- V-belt drive with safety guard
- Base frame with vibration dampers
- Flexible connections for air inlet and outlet

The fan, including housing, impeller and base frame are made of painted carbon steel with an anticorrosion paint.

D. INTEGRATED BED CHAMBER

Quantity : 01 Set

it shall be made of SS 304& it shall consist of single compartments for drying. It shall have specially designed perforated sheet so as to direct the hot air with powder flow. Also it will have

Inspection doors	:	01 No.
Manhole	:	01 No.
Hot Air inlet	:	01 No.

E. EXTERNAL FLUID BED SYSTEM (VIBRATING TYPE FOR CONTINUOUS DRYING & COOLING OF THE POWDER)

Quantity	:	01 Set
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The fluid bed consists of Air distribution bottom part with cleaning doors, Drain funnels, Inlet air duct connections, Perforated plate welded to a supporting frame, Inclined powder inlet with a perforated plate at the bottom, Upper part housing with cleaning and inspection openings, Air outlet-Powder outlet-Flexible connections for inlet and outlets, Light source for internal illumination, Vibro motors, base frame with spiral springs, etc.

F. HOT AIR SYSTEM FOR FBD

7 AIR HEATING SYSTEM (STEAM RADIATOR)

Quantity	:	01 No.
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For indirect heating of the supply air. The air heater is designed with special attention to high thermal efficiency and a low pressure drop

The air heater consists of:

- Steam heating coil made of SS with Al fins
- SS housing
- Necessary connections complete with flanges

a. FBD HEATING FAN WITH MOTOR

Quantity	:	01 No.
MOC	:	MS

Of the centrifugal type with fan and motor assembled on a common base frame and consisting of: Housing with inspection opening and drain

- Impeller, statically and dynamically balanced
- Shaft with heavy duty ball/roller bearings, grease lubricated
- Totally enclosed, fan cooled motor
- V-belt drive with safety guard
- Base frame with vibration dampers

- Flexible connections for air inlet and outlet

The fan, including housing, impeller and base frame are made of painted carbon steel with an anticorrosion paint.

8 AIR HEATING SYSTEM (STEAM RADIATOR)

Quantity : 01 No.

For indirect heating of the supply air. The air heater is designed with special attention to high thermal efficiency and a low pressure drop

The air heater consists of:

- Steam heating coil made of SS with Al fins
- SS housing
- Necessary connections complete with flanges

➤ COOL AIR SUPPLY SYSTEM FOR EXTERNAL FLUID BED

9 PURCHASE & INSTALLATION OF DEHUMIDIFIER

1. To cool air from 40 deg.C to 10 deg.C and re heat to 22 deg.C complete with Moisture separator.
2. Auto Drain system
3. Three set of filter - Primary filter (Coarse) , secondary filter (10 Micron) & Micro filter. - quantity of filter 2 no. each (area 610 x 610 mm.)
4. Air flow 3500 m³/hr
5. Face area of Dehumidifier 800 x 750 mm.

10 UP GRATION OF PACKING ROOM

A. Cyclone separator

Quantity : 01 No.
MOC : SS 304

Designed for highly efficient separation of the powder from the drying air. The separation of the powder from the air occurs during a spiral movement inside the cyclone and the powder leaves the cyclone at the bottom. The cyclone consists of Tangential inlet, Cone, Center tube, Cyclone top with detachable cover for easy inspection and cleaning.

B. Exhaust Fan with motor

Quantity : 01 No.
MOC : MS

For the exhaust air. The fan will be of the centrifugal type. The supply will consist of housing with inspection opening and drain. Statically & dynamically balanced robust impeller of self cleaning type. Shaft with heavy duty ball/roller bearings, grease lubricated, TEFC Moto, V-Belt drive with safety guard. Base frame etc

C. BLOW THROUGH VALVE

Quantity	:	2 Nos.
MOC	:	SS 304

For continuous discharge of powder. The valve is of sanitary design:

The valves comprises of:

- Housing
- Rotor
- Solid stainless shaft
- TEFC drive motor with gearbox

D. FINES RECYCLE SYSTEM

For transporting the fine fraction of the powder to the wet atomization zone in the drying chamber by pneumatic transport system. The system consists of:

E. FINES DISTRIBUTOR

Quantity	:	01 No.
MOC	:	SS 304

The distributor introduces the fines around the atomizer assembly. Air-cooling of fines tubes prevents overheating of the powder when passing through the hot air zone.-cooling jacket for the tubes-cooling air supply (part of neck cooling system)-fines injection tubes

F. HIGH PRESSURE BLOWER

Quantity	:	2 Nos.
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For supplying high-pressure air for transporting the fines to fines distributor or External fluid bed. TEFC motor, Pre & fine filter for air.

G. DIVERTER VALVES

Quantity	:	01 No.
MOC	:	AISI 304

It shall be used for diverting the powder either to the drying chamber or to the discharge end of the vibro fluidizer. This valve is operated with pneumatic actuator. Housing of the valve is of SS

casting and internals of SS. Complete with necessary solenoid valve, actuating cylinder and pneumatic and electrical connection.

H. FINES RETURN PIPE

Quantity : 01 Set

Includes a set of pipes to introduce the fines being blown from the blow through rotary valves provided at the bottom of the cyclone separators, to the following points. It consists of three number deviator Joint to divert the fines, to the wet zone in the nozzle spray area in the chamber, to the first drying section of the external fluid bed dryer, to cooler section of the external fluid bed dryer section.

6. INSTALLATION OF SIFTER ASSEMBLY IN POWDER PACKING ROOM

POWDER SIFTER

Quantity : 01 No.
MOC : AISI 304

Type : Vibrating It shall be used for screening the powder and separating out the lumps from final product. This is a vibrating screen with powder contact parts made of AISI 304 and other parts of painted MS complete with top cover and flexible connections inclusive of motor.

7. INSTALLATION OF FIRE ALARM AND WATER SPRAY SYSTEM

A. FIRE SAFETY AND WET CLEANING SYSTEM

B. FIRE WATER PUMP

Centrifugal type with open impeller and sanitary design complete with motor and base frame.

Quantity : 01 No.
Capacity : Suitable
MOC : CS
Capacity : 40 m³/hr, head: 35 mtr

C. WET CLEANING PUMP

Centrifugal type with open impeller and sanitary design complete with motor and base frame.

Quantity : 01 No.
Capacity : Suitable
MOC : CS
Capacity : 60 m³/hr, head:65 mtr

D. CLEANING TURBINE

Quantity : 01 No.
MOC : SS 304
Type : Rotary

The cleaning turbine shall be used for cleaning of drying chamber. It shall be provided with hose & manual winch.

E. CIP NOZZLE (NON RETRACTABLE)

Quantity : 01 Lot
MOC : SS 304

F. FIRE NOZZLE (NON RETRACTABLE) WITH 2 WAY CONTROL ON/OFF VALVES

Quantity : 01 Lot
MOC : SS 304

G. PIG TANK

Quantity : 01 No.
Capacity : 1,000 L
MOC : SS 304

It shall be used for collection of CIP solution & returning it to CIP Tanks/ drain.

H. CIP RETURN PUMP

Quantity : 01 No.

Centrifugal type with open impeller and sanitary design complete with motor and base frame.

Capacity : Suitable
MOC : CS

I. CIP trays, pipes and fittings etc. For dryer chamber, FBD etc.

Quantity : 01 Lot

8. AIR/ POWDER DUCTING

Quantity : 01 Lot
MOC : SS 304

For connecting the fan with air filter common room inclusive of necessary flexible connections and damper

9. INSULATION & SS 304 CLADDING FOR DRYER CHAMBER

Quantity : 01 Lot

10. INSTRUMENTATION & CONTROL PANEL

Quantity : 01 Lot
Type : self supported , rear door with top cable entry
MOC : SS 304
Design : Dust and vermin proof, operating panel with MIMIC diagram, indicating lamps, electrical remote push button stations, internal wiring and switches as per electrical safety regulations.

Auto feed Control with Air Outlet Temp

- **RTD**

Main Steam Radiator Controller

- RTD
- Control Valve Pneumatic
- Air Filter regulator
- PID controller

IBD Steam Radiator Controller

- RTD
- Control Valve Pneumatic
- Air Filter regulator
- PID controller

FBD Steam Radiator Controller

- RTD
- Control Valve Pneumatic
- Air Filter regulator
- PID controller

Auto fire extinguisher system

- RTD
- PID controller
- Actuated 3 Way Valve with Actuator

Gauges

- Pressure Gauges 0-5 Bar : 3 No.
- Temp Gauges IBD, FBD Temp 0-150 : 3 No.

- Temp Gauges Fine re-cycle line Temp 0-100 : 1 No.
- Temp Gauges FBD Exhaust Temp 0-100 : 1 No.
- Temp Gauges Nozzle Cooling Temp 0-100 : 1 No.

11.0 ELECTRICAL

MOC: CS with powder coated

Functional requirements: To receive, control and distribute electrical power at 415+_10% V. 50 Hz, 3 phase AC in sheet steel housing.

Design requirement and scope of supply:

Housing details: The switch board will be fabricated out of 14/18 SWG sheet steel and will consist of free standing front open-able panel arranged to form a continuous line-up of uniform height. Cold rolled sheets will be doors and front covers. Front doors will be hinged type and bus bars and cable alleys covers will be bolted type.

The complete panel would be sub-divided into different sections and each section will have its own control circuit with fuse and indication.

Switch board will be extensible at both the ends by addition of vertical sections. Ends of the bus bars will be suitably drilled for this purpose. The switch board will be totally enclosed, dust weather and vermin proof. Gasket of durable material will be provided for doors and other openings. Suitable hooks will be provided for lifting the boards. These hooks when removed will not leave any opening in the board. All hardware will be corrosion resistant. All joints and connections will be made by galvanized zinc passivated or cadmium plated high tensile strength steel bolts, nuts and washers secured against loosening. The switch-board will be in cubical design (each feeder components are housed in individual cubical).

Painting: Powder coated

Name plates: Aluminum anodized plates fixed with screws at each outgoings/incoming

BUSBAR SIZING CONNECTIONS AND SUPPORTS:

The bus bars will be made from high conductivity electrolytic Copper. The bus bars and supports will be capable of withstanding the rated and short circuit current. Minimum size of main power bus bars will be 200 amperes rating. Maximum current density permissible for Copper bus bars will be 0.8 amps/sq. mm. An earthing busbar of minimum 150 sq. mm section Copper will be provided outside panel at bottom throughout the length of the panel.

The bus bars will be provided with neat shrinkable insulating sleeve. Supports for bus bars will be made of suitable size hylem sheets/epoxy compound blocks and these would be adequate in number so as to avoid any snag in the bus bars. Minimum clearance between phase to phase will be 25 mm and that between phase to neutral/earth will be 20 mm.

POWER CONNECTIONS

To provide power inter-connections within the panel board. For each outgoing motor feeder, suitable size terminal blocks (min. 3 ways) will be provided inside its cubical and wiring up to these from contactors will be done by panel supplier.

For incoming and outgoing feeders of the MCC Aluminum conductor cable will be used and hence the panel will be designed.

To prevent accidental contracts, all interconnecting cables/bus bars and all terminals also will be shrouded.

Standard color-code of red, yellow and blue for phases and black for neutral will be followed for all bus-bars/conductors.

AUXILIARY WIRING AND TERMINALS

Wiring for all controls, protection, metering, signaling etc. inside the switch-board will be done with 850 volts grey color PBVL insulated copper conductors.

All control wiring will be provided with necessary cable glands/lugs at both ends.

Conductors will be terminated using compression type lugs. Each termination will be identified at both type ends by PVC ferrules.

Control wiring for motor feeders would be such that the "green" light of feeder is "ON" only when control as well as power circuit of feeder is "ON".

SWITCH GEARS

- Air circuit breakers (ACBS) – above 800 Amps
- Molded case circuit breakers (MCCB) - above 32 Amps, MPCB (upto 32A)
- Contactors
- Protective devices
- Timers
- Push buttons (PBs)
- Indication lamps
- Current transformer (CTs)
- Measuring instrument

SPECIAL REQUIREMENT

- All motor feeders above 8.5 HP would have star delta starters and below 10 HP would have DOL starters.
- Connections to various pumps are through local de-contactors, provided near the pumps.
- All motor feeders would be provided with MPCBs/ MCCBs.
- All the power contactors of Star-Delta starters would be selected as per type-2 co-ordination.
- For incoming feeder of rating higher than 800 amps, ACB would be provided.
- If the outgoing feeder rating is higher than 32 amps. MCCB with minimum breaking capacity 25 KA would be provided.

- Whenever remote control is provided for motor feeder only red push button for "OFF" would be provided on the MCC.
- Motor starter would be suitable for AC 3 duty.
- Maximum length of a shipping section of the panel would be 4000 mm.
- Remote push button stations will be provided as per requirement.

Rubber mats in-front of MCC is to be provided.

Power Capacitor Banks: The power capacitor banks will be used to improve the power factor of an electrical system with automatic power factor corrector and MCCB incomer.

LT Power cables: Power cables for use on 415 V systems would be of 1100 v grade, copper conductor, PVC insulated PVC sheathed.

Cable tray: 1 Lot

Cable trays include GI cable trays of suitable sizes for laying power and control cables.

SS Shrouds for motors

Quantity : 1 Set

- **Hammer repair work**

CIVIL WORKS: -

1. TALE TANK - ONE HOT & ONE COLD
2. POWDER FILLING ROOM - AS PER REQUIREMENT
3. RENOVATION OF TOILET
4. RECOVERY ROOM ON TOP OF ROOF

ALL CIVIL WORK AS PER REQUIREMENT INCLUDED IN SCOPE OF BIDDER WHITE WASH OF PLANT.

MECHANICAL WORKS:-

1. ALUMINIUM SECTION WITH GLASS CABIN FOR OPERATOR.
2. GATES OF POWDER PLANT WITH ALUMINIUM SECTION WITH GLASS.
3. CHANGE OF WINDOW GLASS OF P.P.

ALL MECHANICAL WORK AS PER REQUIREMENT INCLUDED IN SCOPE OF BIDDER WHITE WASH OF PLANT.

Note:

Scope shall also include

- Repair / Replacement of blockage tubes for calandria 01, 02 & 03.

- 8 No. Mechanical Seal shall be included in supply along with rubber gasket, rubber oil seal, duct, pipe calandria etc.
- Modification in TVR nozzle
- Pressure regulating valve for main TVR & Heater shall be repair/ replaced
- Spray nozzle, 01 set shall be included in above supply.
- Existing Vacuum pump repair can be used as a stand by
- 2 no. vacuum pump shall be install to avoid any break down etc.
- Existing Cable, cable tray & motor Starter relay shall be used if found of correct specification.

Note:

Supply shall include:

- MS Powder Recovery Room
- Hammer repair work
- Existing Cable, cable tray & motor Starter relay shall be used if found of correct specification.

Make of Major Bought Out Items

S.NO.	EQUIPMENT	MAKE
1	Centrifugal pumps	Fristam or equivelant
2	TVR	Bidders make
3	Steam culinary filter	Ultrafilter/Standard
4	Vacuum Pumps	PPI/Joyam/ IVC
5	Gear motor	Pyjol/ Remi/Standard
6	High Pressure Pump cum Homogenizer	FBF Itallia
7	Nozzles	Delvan/Spraying system
8	Centrifugal Fans	Marathon/ ENGICON
9	Motors	ABB / Crompton
10	Steam Radiator/ Dehumidifier	Bidders make
11	Sifter	Bidders make
12	Diverter valve	Bidders make
13	Air filter	Puromatics/ Reputed
14	Rotary Valve/ BTV	Bidders make
15	Roots Blower	Everest Transmission/ Kay international
16	Vibratory motor	Sinex
17	Vibratory motor for sifter	Sinex
18	SS 304 sheet	Jindal
19	SS manual valves fittings	Kpsar/ MRK/SRI/SIS
20	SS tubes and pipe	Apex/Quality
21	MS/GI pipes	Jindal/Tata/kalyani/MSL
22	Valves for Utility	Sant/Leader

23	Process Transmitters	Wika/Emerson/E&H / Rosemount / Yokagawa/ Tata /Honeywell
24	Control valves	Samson/ Teknik
25	VFD	Danfoss/ Siemens / Allen Bradley/ ABB
26	RTD	Radix/ Baumer
27	Temperature / Pressure Transmitters	Yokagawa/ Tata Honeywell/Wika
28	Process gauges/ Temperature gauges	General Instruments
29	Indicators	Selec/ Radix
30	Draft gauge	Waree
31	IP converter	ABB/Control Air
32	Level switch	P & F
33	Cooling Tower	Mihir / Paltech
34	Water pumps	Grundfoss / Kirloskar / KSB
35	Power Cable	Polycab/ Havells
36	Control Cables	Polycab/ Havells
37.	Boilers accessories	Bidders to specify
38.	Sewage treatment plant	URIEL/ Uttam Envirotech

ANNEXURE-IV

Process Performance and Consumption Guarantees

1.0 PROCESS PERFORMANCE & CONSUMPTION GUARANTEE

If the plant or any part thereof does not give the agreed process performance and consumption guarantees during the warranty period due to reasons attributable to the supplier, the supplier shall, subject to clause 2 and 3 below, the action shall be as detailed therein.

1.1. EQUIPMENT PERFORMANCE

- 1.1.1 The satisfactory performance of the equipment/processing plant will be considered achieved if the plant operates above 98% of the rated capacity declared by supplier in the offer.
- 1.1.2. If the performance is between 95-98% of the rated capacity, penalty will be calculated at 0.5 % of the rupee value of the contract, per 1% of shortfall.
- 1.1.3. If the performance is below 95%, the contractor will be required to upgrade the plant or replace the plant to comply with the above performance criteria. Otherwise the plant will be deemed unacceptable.

ANNEXURE-V

BATTERY LIMITS

S. No.	
3	Skim milk/Whole milk Skim milk/Whole milk with required SNF, Fat, required concentration & temperature as specified would be made available at the inlet of milk balance tank of the evaporation plant by Purchaser at a temperature of 6°C.
4	Product The milk powder shall be left by Supplier at sifter Further packing shall be done by purchaser in 25 kg bags manually.
5	Steam Dry saturated steam with header would be made available by the Purchaser at one point inside the plant building at following pressures: a) 17.5 bar (g) a) 9 bar (g) b) 3.5 bar (g) Further distribution shall be done by Supplier.
6	Chilled water @ 2 Deg C shall made available at header inside the building by the purchaser, further distribution shall be done by supplier
7	Soft water Made available at header in side the building by the purchaser, further distribution shall be done by supplier.
8	Condensate Will be collected by Purchaser from condensate transfer pump. Condensate Recovery Tank and Condensate pump from storage tank to boiler shall be in purchaser's scope
9	Electricity supply shall be provided by Purchaser at the inlet of MCC Panel. Further distribution shall be done by Supplier. All electrical approval from the respective government authorities shall be in purchaser scope of supply.
10	Compressed air Purchaser shall make available oil & moisture free air suitable for pneumatic instruments, at 6kg at header inside plant.
11	IBR Inspection from engineer shall be done by the purchaser
12	Any equipment or services not specifically mentioned in the scope shall be in purchaser's scope.

ANNEXURE-VI

Deviations from Technical Requirement

1. DEVIATION FROM TECHNICAL REQUIREMENT

- 8.1 This tender document provides guidelines for the processes and equipment to be used in tender package and the "basis of design" and the "standards and specifications", define the qualitative parameters against which equipment will be required to perform.
- 8.2 It is incumbent on bidder to provide a fully detailed list of equipment and services, which they intend to provide a fully execute the contract inline with the tender document.
- 8.3 At various points in the tender the purchaser has stated that alternative processes or alternative equipment will be considered. The bidder as part of the bid document shall provide the fully detailed list of such alternatives, together with a consider rationale for employing such alternatives.
- 8.4 Items, which deviate from the tender proposal, shall be as per design specification of the bidder and shall be treated as a deviation from the text of this tender document. Deviated item should fulfill the minimum performance parameters as specified in the tender.
- 8.5 This tender does not allow bidders to make exclusions from any part of tender packages for which they bid, and an incomplete list of equipment or an incomplete schedule of services to be provided would be considered as a non-responsive bid.

Technical Deviation Statement Form			
Sr No	Clause Reference	Deviation	Remarks (Justification)

Above are the particulars of deviations from the requirements of the tender specifications. The technical specifications furnished in the bidding document shall prevail over those of any other document forming a part of our bid, except only to the extent of deviations furnished in this statement.

Date

Signature of Authorised Signatory of Bidder/Supplier

NOTE: Where there is no deviation, the statement should be returned duly signed with an endorsement indicating "No Deviations".

ANNEXURE-VII

Drawings, Data & Documents

DRAWINGS to be submitted by the bidder

Proposed Layout Drawings

Proposed Automation Architecture

DOCUMENTS REQUIRED FROM THE BIDDER

1.0 The Bidder must enclose the following Drawings with the Offer:

- Layout showing proposed services/amenities.
- Proposed machinery layout for all the Sections of the powder plant. Machinery layout should also indicate the area and height requirement of the building.
- Product flow diagram including production equipment, service and product piping, controls instruments, automation, etc.
- CIP equipment arrangement and flow diagram.
- Utilities flow diagram including utility equipment, interconnection piping, controls, instruments, automation etc.
- Single line diagram for electrical distribution system.
- Control room configuration and layout to suit the space shown in tender drawing.
- Powder storage and movement arrangements, justifying storage space requirement.
- The bid shall include layout, schematic and hydraulic flow diagrams, and general arrangement drawings for the units and equipment.

2.0 The Bidder must enclose the following Charts with the Offer

- Load histograms for:
 - a) Steam
 - b) Electrical Power
 - c) Water (soft & raw)
 - d) Chilled water

Each histogram is to be based on 24-hours basis and is to show clearly the hourly consumption, total daily consumption, peak load and average load.

- Hourly equipment wise Time Schedule based on 24-hour time scale.
- Bar chart for project execution including personnel training programme.

3.0 The Bidders must enclose the following information in their Offer:

- Category wise staff requirement for various productions and utility Section of the plant on shift and daily basis.

3.1 Literature covering general and technical information for all equipment covered within the scope of the tender.

3.2 Detailed calculations for selection of process and utility equipment based on utility consumption and process requirements.

ANNEXURE-VIII

1.0 PERFORMANCE TESTS

The bidder is required to detail the documentation proposed for performance tests of all major items of equipment and all major processes and services plant. This shall detail the guaranteed vs. actual throughput or output or performance (as relevant) and the tolerance of accuracy. Also the test methods proposed to demonstrate that these guarantees have been met.

2.0 FORMATS OF GUARANTEES:

- Guarantees for throughput of various sections of plant.
- Product quality.
- Weight and Measurement tolerance.
- Milk solid loss
- Service consumption.
- Formats for performance tests.
- Procedure for carrying out the tests.
- Method of measurement
- Test duration
- Evaluation methodology

3.0 MATERIALS

Bidder is to provide full details of all consumable materials and chemical used in the plant.

IF THE DATA SHEETS ARE NOT GIVEN IN THE BID, THEN THE BID SHALL BE TREATED AS NON RESPONSIVE AND CAN BE REJECTED.