

BHOPAL DAIRY PLANT AUTOMATION

UNDER

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Bhopal Sahakari Dugdha Sangh Maryadit (BSDSM) is affiliated to Madhya Pradesh State Cooperative Dairy Federation (MPCDF), Bhopal. Since its establishment it has gained the reputation of an organization dedicated to provide quality milk and milk products to its consumers and benefitting its rural milk producers. It has worked as a bridge between rural milk producers and urban consumers. During 2015-16 BSDSM had 2389 functional primary



milk cooperative societies with total membership of 95923 and 4.23 lakh Kg milk was procured through them. During the year the turnover of milk union was Rs. 723 Crores.

BSDSM had received grant of Rs 9.5 Crores under Rashtriya Krishi Vikas Yojana(RKVY) for Upgradation and Automation of Bhopal Dairy Plant. The project was taken on priority basis & contractor for supply, installation & commissioning of Automation work was selected through tendering process as per Stores & Purchase rules of MPCDF.



The milk process

Every day, raw milk is delivered from the dairy cooperative societies to the main dairy plant for processing and product making. At each stage of the process, critical information-such as pasteurization temperatures and flow data from the cleaning process-must be tracked and recorded.

Automated data collection has significantly increased the control mechanism for the day-to-day operation of the dairy.

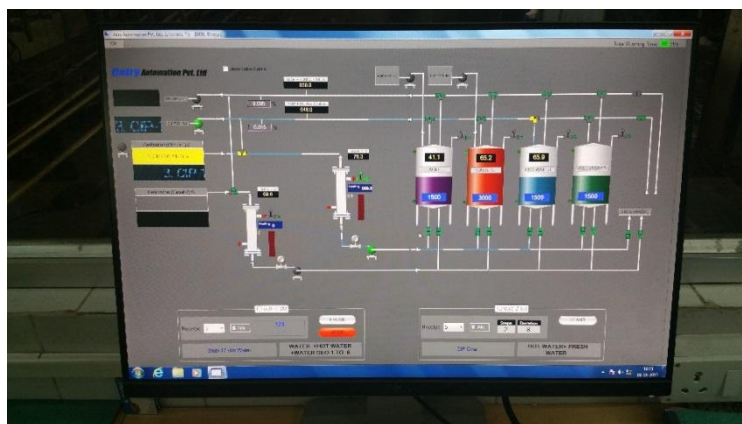
The previous dairy systems were not automated & The PLCs were not connected, there was no reporting, and there was no traceability. It was also possible to overfill a tank, leading to unnecessary waste and, because the process was purely manual, it was time-consuming and in-efficient. Previously, in order to access vital process information, we had to go through piles of reports. But the new system automates everything, and we can now provide critical process information to the people who need it to make important quick business decision.



Bhopal dairy plant is the first dairy in the Madhya Pradesh to be computerized with the existing facility and equipments. Dairy Automation Pvt. Ltd. has successfully introduced full scale automation of all critical process like Milk reception, Chilling, Storage in raw milk silos, operation of pasteurizer, separator, homogenizer, milk dispatch to Packing section and

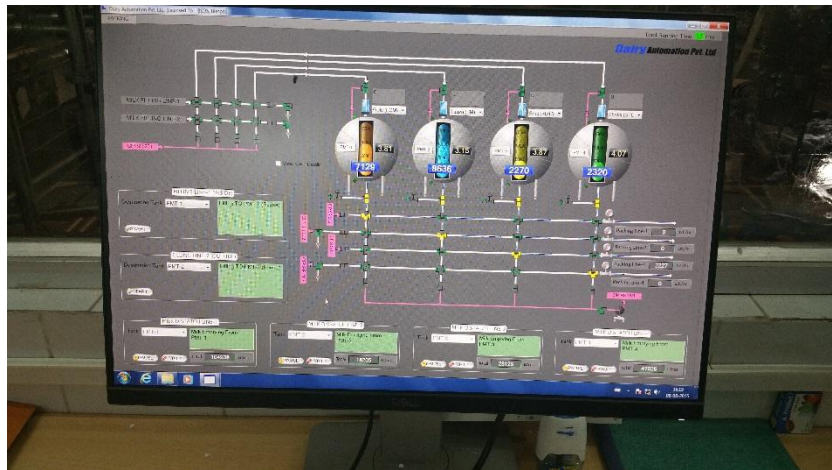
Tanker, batch formation and Cleaning in Place (CIP) with modernization of equipment.

The complete project is implemented on turnkey-basis by M/s Dairy Automation Pvt. Ltd., which is an Indian company with the technical base in Houston (USA), with mutual support of technical and engineering staff at BSDSM. The modernization was done by implementation of an integrated Computerisation/ Automation solution using a plant-wide network of PLCs and PCs over GIGABIT Ethernet.



How does it work?

With this the entire processing operations are carried out from an air-conditioned control room. Information of milk at various stages are closely monitored, recorded and controlled by the computers and ABB PLCs. On top of this there is an umbrella Management Information System (MIS) to maintain the record and communication to the laboratory for quality assurance.



Automation is introduced at various stages like milk storage in silos: centralized monitoring and control of all pasteurizers (maintained exactly at required levels and ensures proper pasteurization). Milk silos are connected with the quality control laboratory for on-line approval process.

Cleaning of one lakh litre capacity silo is also done by computer. In ordinary systems, it is difficult to monitor cleaning and maintain quality standards. At dairy plant, all



parameters such as concentration of cleaning agents and temperature of water to be used for rinsing are stored in the system with no room for error. In totality complete system offers qualitative & financial benefits and apart from this increased working efficiency, saving in energy, water and recovery of cleaning solutions.

Benefits

- Optimum utilization of critical resources like water, electricity, refrigeration, steam and manpower
- Strict process monitoring at all levels
- Reduction in processing loss of milk
- Timely maintenance of equipment
- Strict adherence to ISO and HACCP norms

