

FOOD

Cookies & Crackers



S O L U T I O N O V E R V I E W

Bulk Storage of Liquid Ingredients

By receiving oil and shortening in bulk, this high volume cookie and cracker producer received a substantial payback on their capital equipment investment. Shick supplied insulated and jacketed vertical storage tanks, each equipped with vertical agitation to maintain product consistency. Steam flows through stainless steel coils to provide an energy efficient means of maintaining optimum ingredient temperature inside the vessels. Strainers with magnetic inserts are installed on the fill lines and in-plant transfer lines which act as a critical control point for the plants HACCP, which protects against contamination.

Automated Batching of Liquid Ingredients

Individual transfer systems, utilizing positive displacement pumps and separate drops at each mixer, were engineered to satisfy the high volume batch requirement of this state-of-the-art

bakery. Multiple mass-flow meters communicate with a PLC to accurately and consistently deliver the precise amount of each ingredient required by the recipes. All piping is heat traced and jacketed to maintain a consistent ingredient temperature and viscosity.

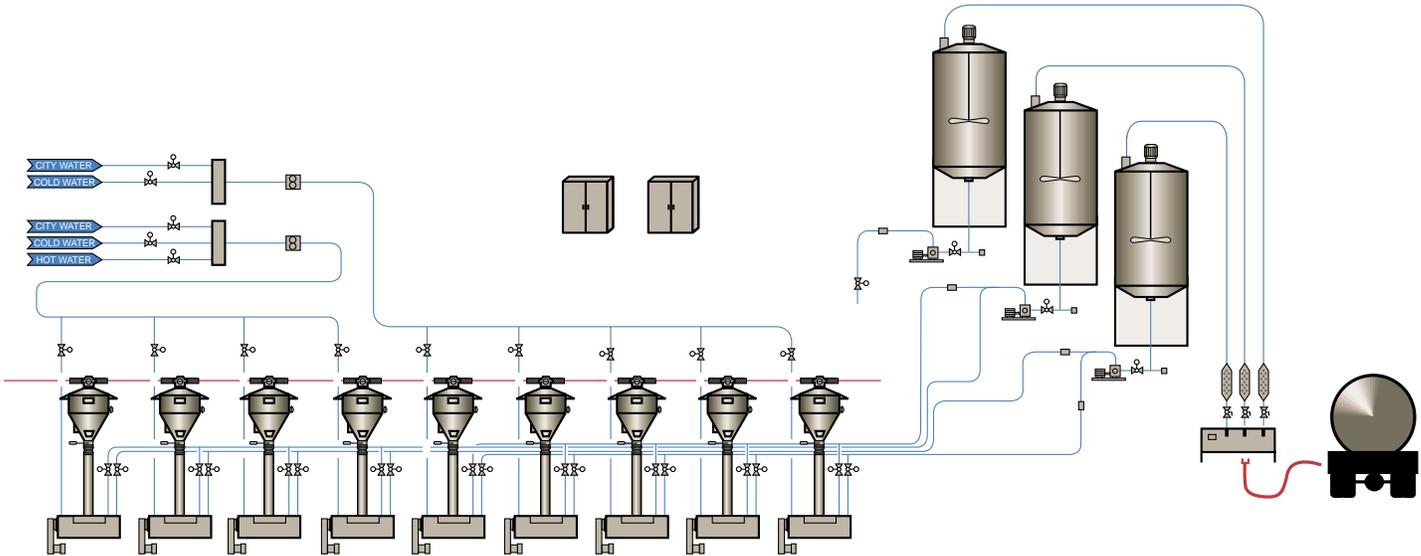
Water Blending

A 2-stream (cold and city) automated water blending system was provided for the cookie mixers and a 3-stream (cold, city and hot) was supplied for the cracker mixers. Water temperature setpoints are communicated from the supervisory computer through the PLC to each of the blending systems. Modulating valves continuously adjust the various streams of water utilizing feedback from downstream temperature probes through a PID loop. Water temperature is controlled to +/-1 degree F of recipe setpoint.

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PROCESS DIAGRAM



Final Product:
Cookies

Project Scope:

- Truck Unloading with Strainers
- Bulk Liquid Storage, (2) 8,500 gal. (Spray Oil, Shortening) and (1) 6,000 gal. (HFCS)
- Mass Flow Meters on Each Transfer System
- Liquid Transfer Systems to (9) Mixers with P.D. Pumps and Strainers
- (2) Automatic Water Blending Systems, (1) 2-Stream and (1) 3-Stream
- Heat Traced and Jacketed Piping
- PLC Controlled, MCC, Local Operator Interface Terminals and PC with Supervisory Computer

Materials Handled:

- Spray Oil
- High Fructose Corn Syrup (HFCS)
- Shortening
- Blended Water

Purchasing Rationale:

New facility to utilize cost savings of bulk for flour, granulated sugar, oil, shortening, HFCS and the automation of ingredients to the mixer.



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