

## Snack Food Manufacturing Material Handling Systems

General Control and Multiple Technology Applications

- ✓ Process Control and Material Handling for  
*Dough Processing Line*  
*Bulk Conveying System*  
*Sorting System*

Confidential Client

*Bachelor Controls' system design allowed system installation to flow smoothly.*

Phil Liebnitz  
Electrical Contractor  
Harris Electric Company



### Project Summary

Bachelor Controls (BCI) developed various control systems for an entire baked snack cracker process — from the raw ingredients to the palletized product ready for shipping — for a large snack food manufacturer. Additionally, BCI designed and built the PLC and operator interface panels for each control system installed. The various projects, which spanned three years, required BCI personnel to become intimately familiar with the entire baked snack cracker process.



### Objectives / Requirements

#### Bulk Conveying System

- Two different control systems for bulk conveyors
- Systems sense when to feed product to the customer's scales, then turn on the conveyors and open the slidegates leading to the scales
- Utilize a combination of Flex I/O, DeviceNet, and standard SLC I/O modules
- Reduces dough waste, product breakage, and sanitation costs while adding flexibility to the production process

#### Dough Processing Line

- Add automated recipe system to reduce the amount of operator intervention required during product switchover
- PanelView 900 interface allows operators to select which product to run, then the PLC5 sets the conveyor speeds and line configuration
- Line startups and production changeovers are faster and more efficient
- Interface reduces opportunity for operator errors

#### Sorting System Optimization

- Add PanelView 550 to the palletizer
  - operators can select which product to palletize
  - allows for manual control of the palletizer
- Create all logic to control conveyors which bring product into the palletizer from another floor
- Add HMI to monitor all six palletizing systems



### Results / Benefits

BCI developed the specialized conveyor controls necessary to integrate a variety of OEM equipment in a fashion that met the customer's needs and schedule.

- Minimized line downtime and increased the efficiency of the customer's throughput
- Upgraded hard-wired controls to the latest A-B technology to optimize the system
- Reduced dough waste, product breakage, and sanitation costs
- Developed more user-friendly system with fewer operator errors



**Bachelor Controls, Inc.**

Systems Integration for Manufacturing

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