



Project Profile: Refrigeration Control

COMPANY

Hillshire Farm & Kahns
Sara Lee Corporation
Claryville, Kentucky

PROJECT TITLE

Supervisory Control System
Refrigeration And Power Monitoring

FACILITY

Meat Packing Plant

PROJECT DESCRIPTION

The project consisted of installing Resistive Temperature Devices (RTD) in the ceiling of the refrigerated finished product warehouse, freezer and shipping dock. The RTDs were tied into an existing Allen Bradley 5/250 PLC system, which controls the refrigeration chillers and evaporators. The PLC control logic was modified to replace the existing manual temperature control with automatic temperature control. The defrost controls were also revised and switched from defrosting based upon a fixed time of day schedule per evaporator to defrost after an accumulated run time.

Electric power consumption information was obtained from the utility's meter and used as the basis for demand control.

OBJECTIVES

- Provide remote monitoring, and trending of temperature data for the various warehouse refrigeration zones.
- Provide supervisory control of each refrigeration zone.
- Provide control of evaporator defrost cycles.
- Provide power monitoring and demand control.

SERVICES PROVIDED

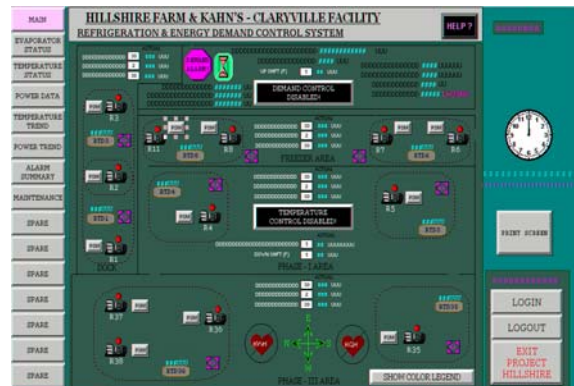
- Instrumentation & Electrical Design
- Software Development
- Hardware
- Construction

HARDWARE

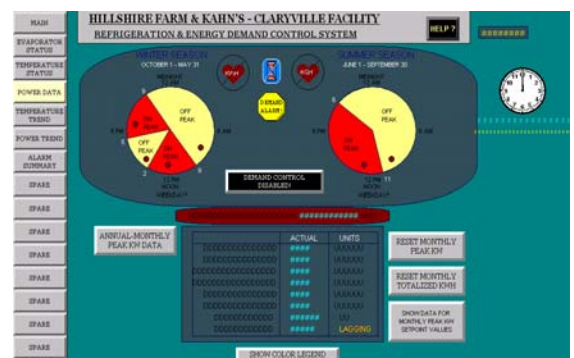
Allen Bradley 5/250 PLC I/O
Compaq PC
RTD Temperature Sensors

SOFTWARE

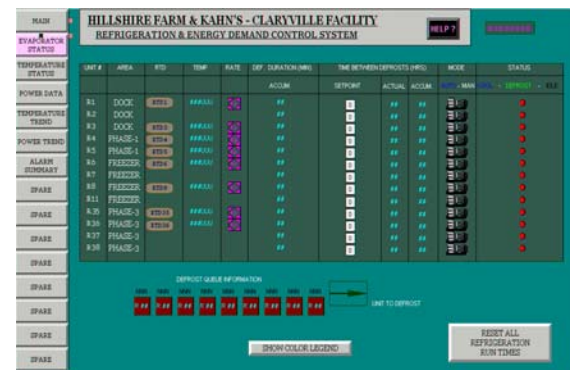
Rockwell Automation RSView



Refrigerated Storage Layout – Overview



Energy Monitoring – Demand Control



Evaporator Status & Control

OUTCOME

- Tighter Temperature Control
- Reduced Labor to Monitor & Record Temperature Data
- Reduced number of Defrost Cycles
- Reduced Power Consumption