



A Rockwell Automation Company

## Lakeside Packers Ltd. Spray Chill

### The Client:

Lakeside Packers is a meat processing plant located in Brooks, Alberta. The plant is wholly owned and operated by I.B.P. formerly Iowa Beef Producers, a well known beef supplier in the United States. With

Lakeside Packers and several other meat processing plants in the United States, I.B.P. has a wide global market share which includes Canada, United States, Japan and several European countries.

### The Requirement:

After the acquisition of Lakeside Packers in 1995, I.B.P. decided to expand their Canadian operation (Lakeside) to double the production from 2000 to 4000 head per day. A new hotbox to store hot carcasses from the kill floor was to be constructed along with the other facilities such as rendering processes, cut up floor, material handling, etc.

To prevent carcasses from shrinkage, a spray chill system was to be set up in the hot box. There was a total of 16 spray zones, each zone was equipped with spray solenoids and spray nozzles. When the third rail in a particular spray zone started loading beef, the first carcass entering the rail passing a limit switch triggered the spray sequence. A spray sequence was broken into 2 halves. Each half consisted of a number of sprays, which came on for a predetermined time. The spray duration, delay between sprays, and number of sprays were entered from an HMI station. The spray schedule on the

HMI included 2 sets of set points, one set for weekdays and the other set for weekends. The weekend and weekday mode was selectable from the HMI. The screen entry also included the facilities to cancel a spray sequence, to manually start a spray sequence and status display of the spray zones.

The spray water was supplied from a spray chill holding tank. The water in the tank was chilled to 35°F by means of a water chiller. Water make-up must pass through the water chiller prior to entering the water holding tank. Water recirculation was provided to maintain the water temperature at set point. Three water pumps were used to supply water to the spray chill nozzles, one pump supplied water to the old hot box, the second pump supplied water to the new hot box, the third pump was on standby mode. Due to the limitation of pump capacity, only 2 spray zones were allowed at a time.

### The Design Solution:

Hinz was to develop the control system for the following equipment:

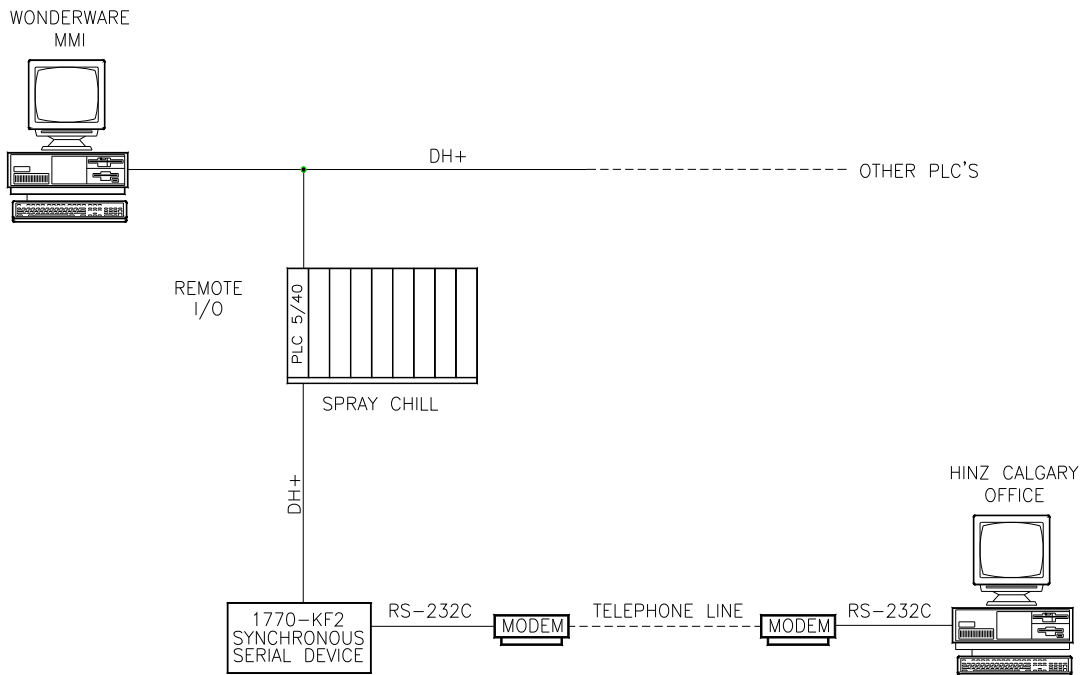
- 16 spray zones which included 16 spray solenoids and 16 limit switches
- Water chiller
- Water holding tank
- 3 water pumps with local pump control panel.
- One A-B PLC 5/40 and one 16 slot rack were used to house the discrete and analog I/O's
- Spray chill graphics and spray schedule were developed on the existing HMI stations for the Refrigeration which ran Wonderware on Windows NT background.
- Pump motor control were routed into MCC in the Hotbox MCC Room.



A Rockwell Automation Company

## Lakeside Packers Ltd. Spray Chill

### SPRAY CHILL PLC SYSTEM



#### System Specifications:

- (2) Allen-Bradley PLC 5/40 Processors
- (5) 16 slot I/O Racks
- Dell Pentium Computer Running Wonderware in Microsoft NT environment.
- Dell Pentium Computer Running ICOM PLC programming software
- 1000 Digital, Analog and RTD I/O points
- Data Highway Plus
- Remote Dial In via 1770-KF2

For further information or to contact a Hinz office near you, please check our website at:

[www.hinz.com](http://www.hinz.com)