



A Rockwell Automation Company

Lakeside Packers / IBP Inc. Flotation System

The Client:

Lakeside Packers is a meat processing plant located in Brooks, Alberta. The processing capacity is 200 head per hour operating on a 10 hour shift. With the storage space expansion expected to be completed by the end of 1996, the plant can operate around the clock to boost the output to 4000 head a day. Lakeside Packers

supplies beef to large food chains such as Safeway and other meat distributors in western Canada and the United States. The plant is owned and operated by Iowa Beef Producers (I.B.P.), a well known beef supplier in the United States.

The Requirement:

The Flotation System is designed and implemented to recover the oil in the processing water before it is pumped to waste treatment. The finished oil can then be sold as an ingredient in the manufacturing of feed stocks. In addition, solids are extracted from the water and sent to the Rendering process. The processing water is first passed through a Rotor Screen that removes solids and sends them to Rendering with an auger system. The water then passes through 2 flotation cells. The cells are used to skim the floating

sludge from the top. This sludge is sent to the skimmings holding tank. Steam and heat are added to the tank to breakdown the sludge. It then flows through a vibratory screen and decanter for further solids removal. The sludge is held in a holding tank where steam and heat are used to further break it down. An Alfa Laval centrifuge is the final step required to separate the oil from the sludge.

The Design Solution:

The process equipment included the following: an auger system, 6 large sump pumps, 2 flotation cells, a skimmer system, 2 centrifuges which require Y - D starting, a Sharples decanter and associated tanks and pumps. A Toshiba VFD is also required to control the rate of skimming transferring. Tank heating uses steam controlled by PID loops. A total of 8 high pressure pumps capable of supplying a flow of 2000 GPM of hot water to the processing floor is also included in the system. Pumps performing the same task are programmed to rotate once a week to ensure even wear.

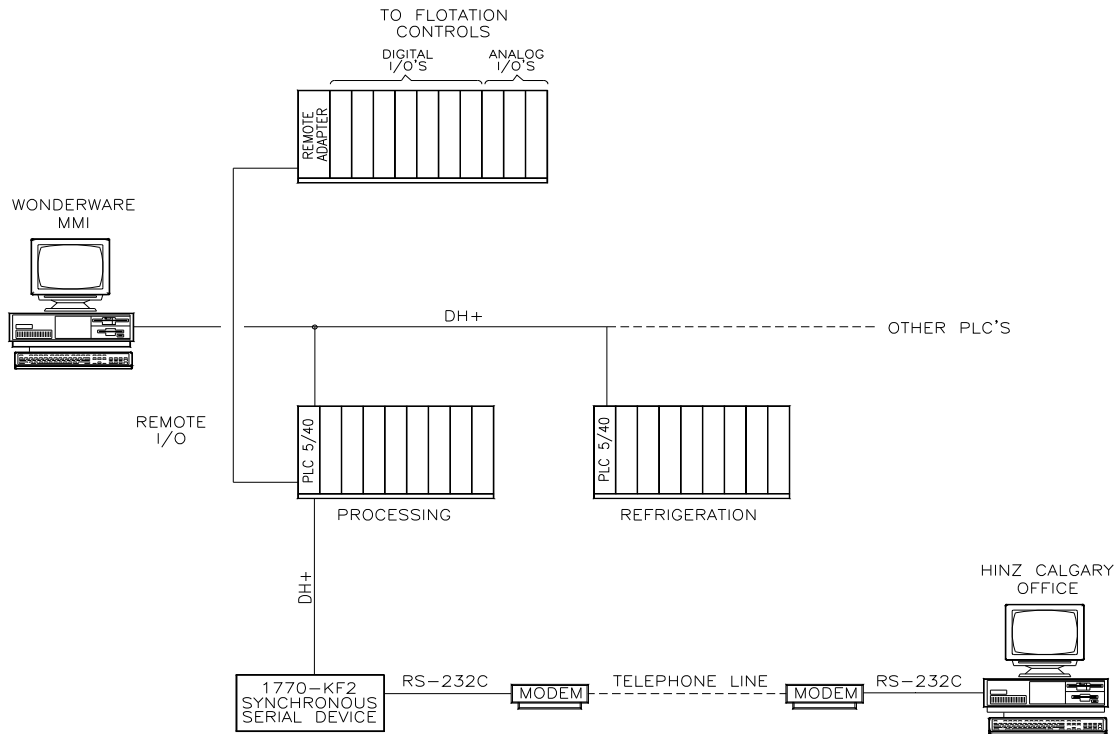
A control panel containing an Allen-Bradley remote I/O rack was built to monitor and control a total of 41 motors in the flotation system. The PLC was also used to interface (2) Westech control panels for the aeration process & skimmers. The Alfa Laval centrifuge was controlled with its own PLC connected to the Flotation MCC. Allen-Bradley Motor Control Centers were used

to power the motors. The system included a total of 170 digital and analog I/O. The remote I/O adapter was controlled by an Allen-Bradley PLC 5/40 processor which networked into a DH+ Data Highway with other PLC 5/40's. The status and operation of the high pressure pumps were displayed on a Wonderware MMI package which also monitored the process of the whole plant. An Allen-Bradley 1770-KF2 asynchronous serial device and modem was connected to the Data Highway to facilitate on-line program support from Hinz Calgary office via telephone line. The Allen-Bradley MCC was fed with a 4160V X 480V transformer. A 4160V X 120V 3 phase Hammond transformer was used to supply control power to the PLC panel and MCC. An isolation transformer was also used to ensure clean power supply to the PLC. Numerous control switch panels were designed and installed to provide operators with local control of the motors.



A Rockwell Automation Company

Lakeside Packers / IBP Inc. Flotation System



System Specifications:

- 1 Remote I/O Adapter
- 11 Digital I/O Modules
- 3 Analog I/O Modules
- 1 RTD Input Module
- 1 PLC 5/40 Processor
- 1 1770 - KF2 Asynchronous Serial Device
- 1 28.8 K Baud Modem
- 1 Wonderware MMI Package
- 1 PLC Programming Computer
- DH Plus Data Highway

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

www.hinz.com