



A Rockwell Automation Company

Bunge Canada Edmonton 2002 Plant Expansion

The Client:

Bunge Canada (formerly CanAmera Foods Limited) produces and packages edible oil products, protein meal and oilseeds at plants across Canada. The products are then marketed both domestically and internationally.

Bunge's Edmonton plant packages a myriad of edible oil products including; canola oil, margarine and shortening.

The Requirement:

Current and planned increases in the production of edible oil products prompted Bunge to add three new production lines to its Edmonton plant. A hard margarine line was added to the existing process area and a soft margarine line and a shortening line were added to a portion of the plant that was previously devoted to storage. In addition, a new weld shop was built.

Bunge purchased the equipment required for the expansion but required outside expertise to provide the detailed electrical, instrumentation and control design.

The Bunge expansion project had characteristics unique to a

food producing plant. All of the equipment is subject to being washed down which required careful selection of cabinets and conduit.

An additional challenge was that Bunge wanted to minimize production outages. As a result, weekend work was required and tight scheduling constraints were imposed. Work to be completed over the weekend had to be meticulously planned out and the contractor had to thoroughly clean the area so that production could commence as scheduled on Monday morning.

The Design Solution:

Hinz was chosen to provide the detailed electrical design, load studies, bid documents, detailed scope of work, contractor tender and selection, field support, on-site commissioning and documentation. Bunge also asked Hinz to provide local panel pushbutton control in the existing area and a new operator interface panel and control system in the new process area to allow operations to control and monitor the process.

Hinz researched and selected the optimal control equipment vendor for the project, selected the required equipment, designed panel layouts, created wiring drawings and provided programming, testing, commissioning and training for the controls portion of the project. Hinz also designed a tank levels display using GE Cimplicity to allow management personnel to view the tank levels from their offices. Hinz also provided all of the drafting for the project including the P&IDs.

This expansion required the addition of a large amount of machinery. Modifications to existing MCCs and the addition of a new MCC were required to accommodate the added equipment. Construction was completed in two phases. Phase 1 consisted of relocating panels and transformers in the MCC room to accommodate the new MCC and a new 250HP Variable Frequency Drive (VFD). Phase 2 involved the remainder of the work and required two separate weekend plant shutdowns.

Wash-down requirements dictated that all control and power panels had to be stainless steel and waterproof. Existing conduit and pipes had to be washed before new conduit could be added in the process area to ensure that work overhead would not cause dust to fall. To accommodate the cleanliness requirements all new cabling in the process area was PVC conduit with watertight seals stacked vertically to minimize dust formation.

Strict scheduling was followed to allow for required cleaning and the completion of all weekend work during the designated weekend. Production outages were very minimal during the course of this project.

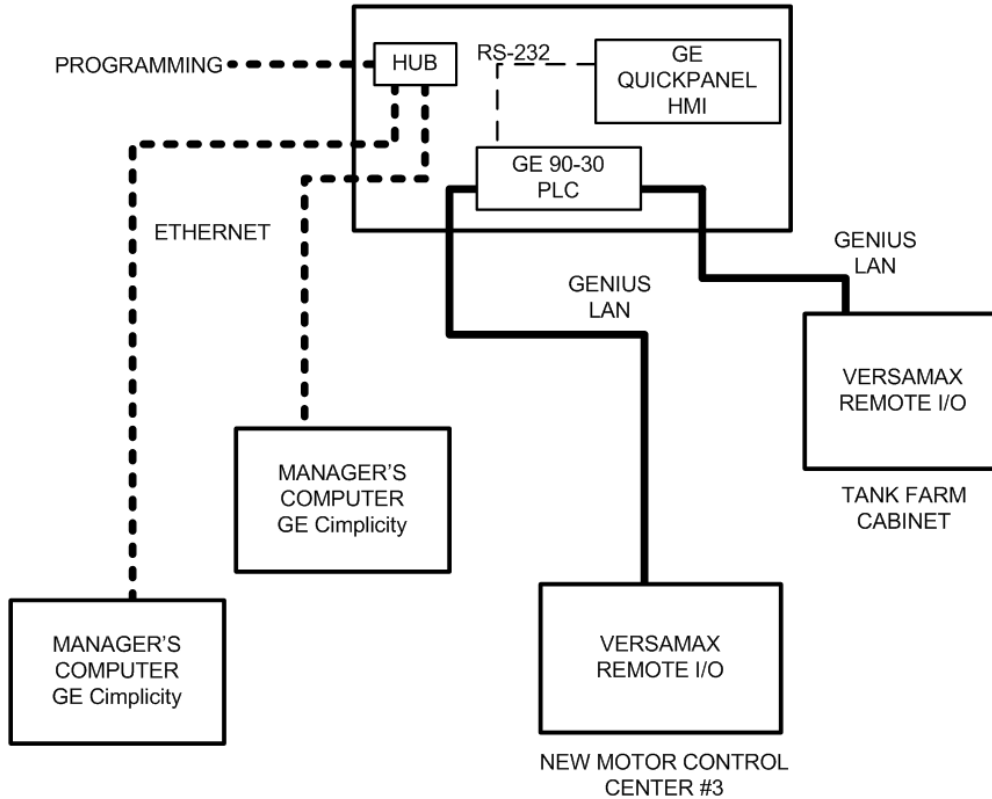
The Programmable Logic Controller (PLC) was chosen to be a GE Fanuc 90-30 with VersaMax remote I/O. Hinz wrote, tested and commissioned the control program and configured communications to allow the PLC to communicate with the I/O, remote I/O racks in the MCC and tank farm panel, the QuickPanel operator interface panel and the tank levels display in the managers' offices.

Hinz commissioned the motor control and tank level programs on-site. Commissioning consisted of testing all alarm points and ensuring that all motor-pump combinations could be controlled as desired. When commissioning concluded the equipment was placed into active service.



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System Specifications:

Control System

- 1 GE Fanuc 90-30 Programmable Logic Controller
- 2 racks of VersaMax remote I/O, one in MCC3 and the other in the Tank Farm Cabinet
- 1 QuickPanel Operator Interface Terminal
- 1 Ethernet Hub
- GE Cimplicity displays installed on 2 computers to allow management personnel to remotely view the tank levels

Electrical Equipment

- New MCC3 containing 16 starters, 4 VFDs, 7 Breakers and a PLC cabinet
- 3 local control panels
- 12 Allen-Bradley Variable Frequency Drives
- Addition of a 250HP compressor VFD and a 50HP condenser VFD

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

www.hinz.com