HINZ
A Rockwell Automation Company

Lafarge Canada Inc.
Line #1 PLC Conversion

The Client:

Lafarge Canada Inc. is a cement manufacturer with production facilities located in Kamloops, British Columbia. Lafarge Kamloops is part of the Western Canada working group, supplying cement to the interior of British Columbia. The company has embarked on an upgrade program to modernize their plant PLCs, beginning with the cement handling line. To accomplish this goal, their GE Series 6 PLC was replaced with a GE 90-70 processor and Horner Electric Series 6 I/O Adapter and the program converted.

The Requirement:

The Lafarge Kamloops handling line transfers dry cement from the kiln to dry storage and the truck loading bins. The initial state of the handling line was a GE Series 6 PLC and several Genius I/O blocks. This system was to be replaced by a new GE 90-70 series PLC with a Horner Series 6 I/O adapter. The Series 6 program was to be converted using SofTech's GETools conversion software.

In addition to the PLC upgrade, Lafarge Kamloops was phasing out their old Unix based Cimplicity I/U graphics stations and replacing them with Cimplicity 3.2.

Hinz was retained to convert the PLC program, assist in setting up and troubleshooting the installation of the new Cimplicity HMIs, set up the Ethernet connections between the Cimplicity and 90-70 PLCs and commission the new control system.

The Design Solution:

A GE IC697CPX782 90-70 CPU utilizing a Horner Electric Programmable co-processor module, Ethernet card, and two genius bus drops were used for overall control of the handling line. Programming of the PLC was carried out using GE's Logicmaster 90-70 software with Complicity being utilized for operator interface control of the handling line. Operating in a Windows NT environment provided quick, easy and secure access to the various control screens from the main screen selection menu.

To convert the old Series 6 PLC program, SofTech's GETools software was used. The old Series 6 program was exported into a text format which was then converted into a 90-70 program by the GETools software. A variety of conversion factors needed to be taken into consideration while setting up the conversion, such as real-world versus auxiliary I/O and analog signals. By using the Horner Series 6 I/O adapter, the existing Series 6 I/O was taken directly to the 90-70 processor. This minimized wiring and commissioning time and allowed for a single 90-70 I/O rack, in conjunction with the existing Series 6 racks, to control the entire handling line. The only wiring required was cabling between the Horner adapter and the old Series 6 I/O, and the Genius bus controllers. Two Genius bus controllers were used. One to pass global data between the handling PLC and the plants three other PLCs, the second to connect to Genius I/O field blocks.

While Lafarge Kamloops had converted their Cimplicity I/U screens to Cimplicity NT screens, Hinz installed Cimplicity NT on their machines, transferred Cimplicity files to all machines, set up Cimplicity server/client connections and commissioned the Ethernet network linking the Cimplicity PCs and the GE 90-70 PLCs.

The commissioning of the new PLC program was conducted in a single day, with only two small changes to the new program being necessary. The Cimplicity system was set up over the next two days, with the removal of existing Cimplicity IU systems and introduction of new Cimplicity NT systems.

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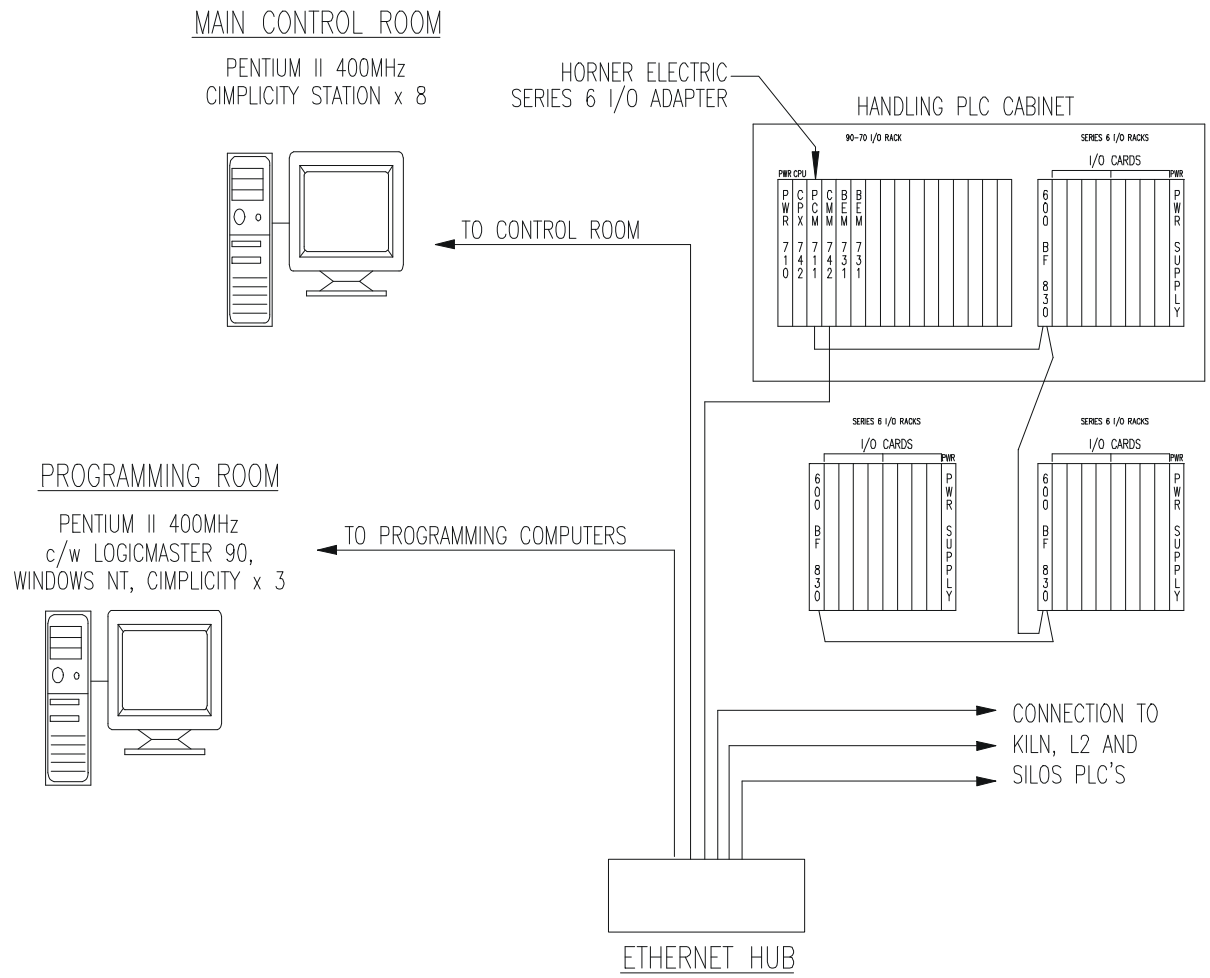

System Specifications:

- GE 90-70 IC697CPX782 processor
- Horner Electric Series 6 I/O adapter
- Two Genius Bus Controllers
- 10 Cimplicity NT stations
- Ethernet communications system
- Conversion of GE Series 6 PLC program to GE 90-70 PLC program
- Set up and Installation of Cimplicity NT
- Server/Client Cimplicity connections
- Genius Bus networks

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

www.hinz.com