



A Rockwell Automation Company

Millar Western Forest Products Ltd. Conversion of GE Ser 6 PLC to GE Rx7i PLC

The Client:

Millar Western Forest Products Ltd. is one of the world's largest suppliers of bleached chemi-thermo-mechanical pulp (BCTMP). With plants located in Whitecourt Alberta and Meadow Lake Saskatchewan, Millar Western has gained wide recognition among

papermakers for its unique pulp qualities, including high bulk, superior opacity and stiffness. It is used around the world in the production of tissue and toweling, printing and writing papers, specialty papers, paperboard and newsprint.

The Requirement:

The Whitecourt Alberta mill, originally had fourteen GE Ser 6 PLC systems. Approximately half of the systems had been converted from Series 6 to Series 90 processors. Recently, Millar Western decided, that all future conversions would be upgraded to PAC's platform. Since Hinz was involved in the conversions from Ser 6 to Series 90, Millar Western asked Hinz to be involved with converting two additional Ser 6s to Rx7i.

The first PLC system to be converted was one of four main PLCs that communicates with the Bailey DCS. It is the largest PLC system in the Mill with over 1650 runs of logic and 219 Genius I/O blocks connected to

8 bus controller cards. This PLC system makes use of the Rx7i integrated modbus serial port for DCS communications.

The second PLC system to be converted was a critical PLC in that it controls all feed and waste systems. Millar Western uses a server based change management system for their PLC applications (GE FX manager). Since this PLC system was at a remote location outside of the plant, it was a project requirement to use the Rx7i integrated Ethernet port, and fiber optic cabling for the change management system to work.

The Design Solution:

The existing Series Six programs were "frozen" and sent to Hinz for conversion. Any modifications made after the "freeze" were written down on paper and faxed to Hinz for entry into the new program. The first task was to build a variable conversion table to identify the old and new addresses of real I/O, peer to peer registers, DCS communication registers, timer references (requires 3 registers in PACs), and internal registers.

Once the variable conversion table was built, conversion software was used to perform a raw conversion to the PACs platform. The next conversion step involved some manual programming fixes. The design of the Series 6 processor includes overlaps between the register and extended I/O (discreet) tables. Overlaps were identified and accommodated for in the new program through manual programming. Other manual conversions included I/O configuration, peer to peer configuration, new hardware diagnostic logic and

other items identified in the quality control phase of the overall conversion.

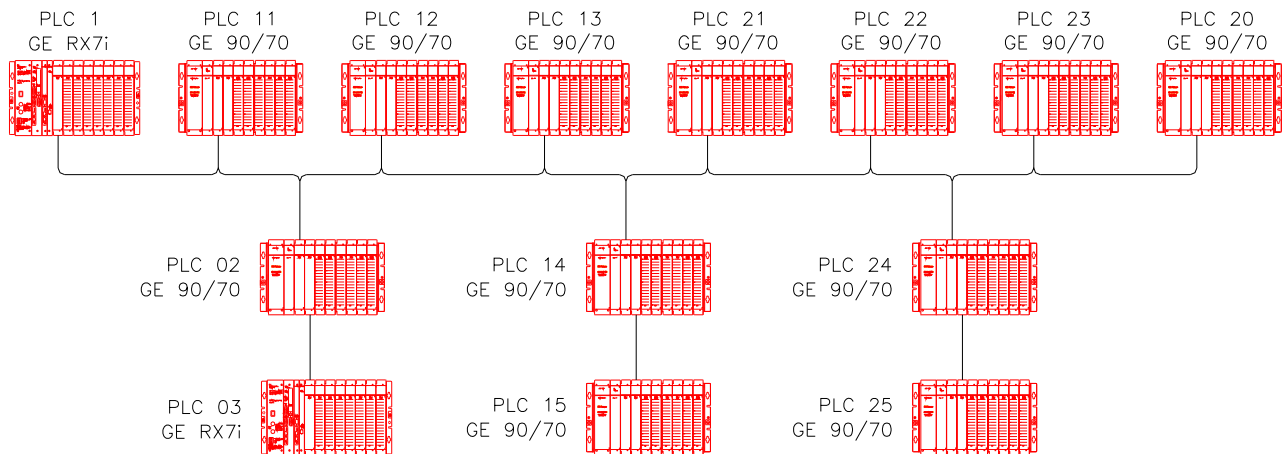
The documentation stage of the conversion included the design of an LISP Program to automatically change all Series 6 I/O references in CAD drawings to PACs I/O references. A conversion cross reference between the old and new PLC address references was provided to help maintenance staff make the transition to the new system. Also a peer to peer network communication document was compiled to help Millar Western track data that is shared between the PLCs.

The commissioning and start-up phase of this project was over a period of 96 hours and Hinz was able to provide the client with personnel to standby around the clock. It is the philosophy of Hinz to partner with their customers to complete a project, safely, on time, and on budget. This project was an excellent example of that partnership.



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System Specifications:

- (2) 300 MHz Rx7i CPU
- (12) BEM731 Genius Bus Controllers
- FX manager software
- Proficy ME programming software

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

www.hinz.com