A Rockwell Automation Company

Syncrude Upgrader Expansion
Upgrader Expansion - UE-1 PLC/HMI Programming

The Client:

Syncrude Canada Ltd.'s Upgrader Expansion 1 (UE-1) is undertaking a major addition to its bitumen processing facilities in Fort McMurray, Alberta, Canada.

As part of that incremental production capability, its subcontractor of MCC equipment, Rockwell Automation awarded Hinz Calgary a contract to provide the programmable logic and human machine interface programs which monitor over twenty Process Electrical Equipment Buildings (PEB).

A PEB is generally defined as a building that houses the 13.8kV, 4.16 kV and 600 V motor control centers, transformers, switchgear, motor protection relays, logic controller panels, UPSs, and VFDs used to energize various process trains in the upgrade facility.

The Requirement:

The magnitude and complexity of each PEB called for as much standardization as possible in all aspects of design. As well, adherence to a set procedure of RFQ/ RFE/RFF project execution was required in order to contain review cycles, design rework, schedule delays and of course, cost of construction. Syncrude, through its partnership with the major engineering firms SNC-Lavalin, Co-Syn Engineering and Fluor Daniel, assigned enormous engineering teams to each PEB, adding to many layers of requirements definition, specification standards and end-user performance expectations.

The Design Solution:

Hinz successfully interfaced with the various levels of the process and electrical design team hierarchies and sub-vendors to put together a proven PLC/HMI program for basically two types of applications: (1) Single non-redundant ControlLogix PLC configuration and (2) a Dual-redundant ControlLogix PLC configuration.

Each panel is equipped with a PC-based HMI that acts as a window into the PLC logic, as well as a direct interface into the various controller devices, using third -party software interfaces. Given the standardized nature of each PEB design, an innovative approach to PLC code generation was the use of a Pearl script to generate the ladder code, for each PEB PLC. This greatly reduced the cost to produce a product (a savings that was transferred to the client) and minimized the ongoing cost of maintaining the code. The programming required interfaces to both ControlNet, Modbus and DeviceNet capable equipment. Another highlight of this project is that Hinz is the first company in Alberta to successfully implement an Allen-Bradley ControlLogix Redundant PLC configuration in the field .

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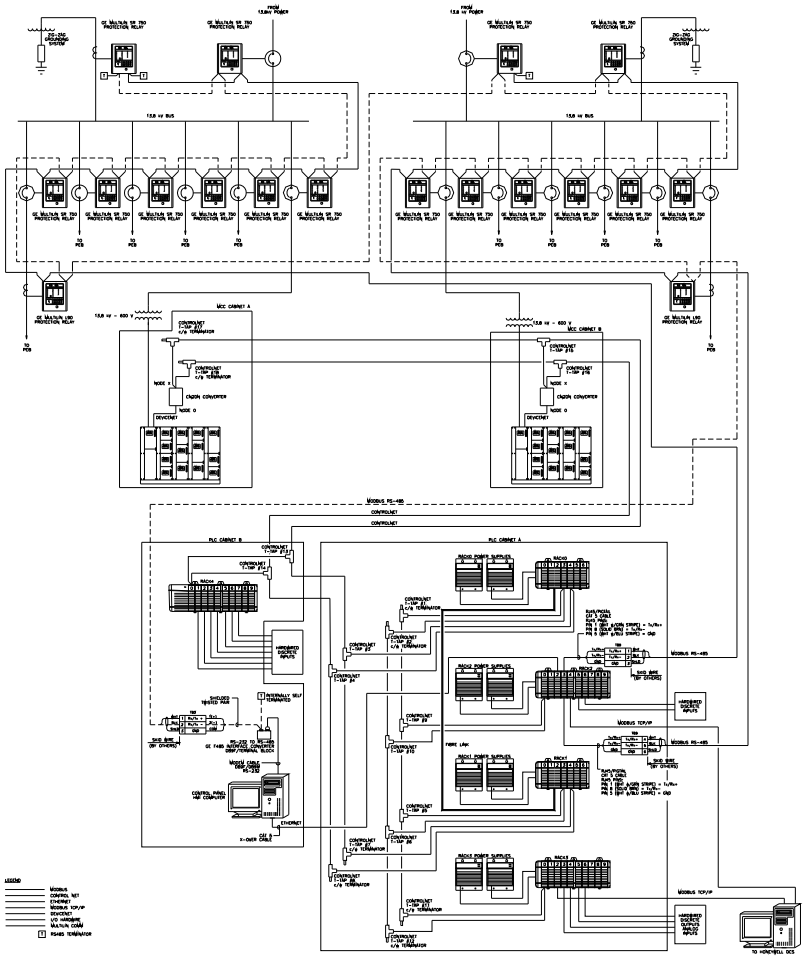

UE–1 COMMUNICATION SYSTEM ARCHITECTURE

System Specifications:

- Allen-Bradley ControlLogix 5555 Series PLC
- System Redundancy Module
- Redundant Power Supply Assembly
- ControlNet Redundant Bridge Module
- Ethernet/IP Bridge Module
- Prosoft MCM Modbus Module
- Prosoft MNET TCP/IP Module
- Hoffman Proline Modular Series cabinet
- Dell HMI Computer
- GE F485 RS232/485 Converter

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

www.hinz.com

"Automation and Power Specialists"

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