HINZ
A Rockwell Automation Company

Esso Resources Canada
Solution 2 - Hot Oil Heater Upgrade - Bonnie Glen, AB

The Client:

The Bonnie Glen facility (formerly Texaco Canada) is the centre of several productive fields. This area has developed over the past twenty five years. The fields are being depleted and enhanced recovery techniques are being used. One of the processing plants, Solution 2, takes the crude from the production facilities, applies a series of processes and delivers it to the pipeline network. Bonnie Glen is one of Esso's most productive areas. Their concern for reliability and up-time is paramount.

The Requirement:

The first process in the Solution 2 plant is the Hot Oil Heater. This heater has twelve gas fired burners. The arrangement prior to this project was one igniter and one fire eye for twelve burners. A distributor would step rotate a spark to each burner during a relight. During maintenance or a wind gust a burner would go out. The burner chamber would fill with gas an eventually be ignited by an adjoining burner. The explosions would be rough on the heater. Sometimes the winds would vent a burner enough that it would not ignite from the adjoining ones. The ignition system could only be activated when the burners were all shut off. This forced the plant to shut down for the heater relighting.

The need for new controls on the Hot Oil Heater was made evident during an unplanned shutdown during a cold snap in 1988/89. Esso issued an AFE to refit the burner with new controls that would be reliable and offer independent relighting.

The Design Solution:

The gas supply manifold was refitted with individual gas supply valves and pilot valves for each burner. Each burner also was fitted with a flame rod, (a flame detection and ignition device used to replace fire eyes and igniters). The valve and flame rod controls were interfaced to the Solution 2's redundant GE Fanuc Series Six programmable controllers through Genius I/O. ASCII/BASIC cards were installed in the Series Sixes and connected to an operator interface terminal (OIT) located in the new Hot Oil Heater control building. Operations achieved control of the burners through this OIT.

A control philosophy was established to keep the heater (and burners) on and to provide relighting in a sequential basis. If a burner blew out it would automatically initiate a relight sequence for itself. The PLC passed a warning to the operator (through the ProVox DCS) that a burner relight was in progress. Eventually, once the operators learned the operation of the new controls and developed a trust in them, the OIT was relocated into the main Solution 2 control room offering complete remote operation.

A hand-wired push-button panel was located beside the OIT in the Heater Control Building to provide redundant control capabilities.

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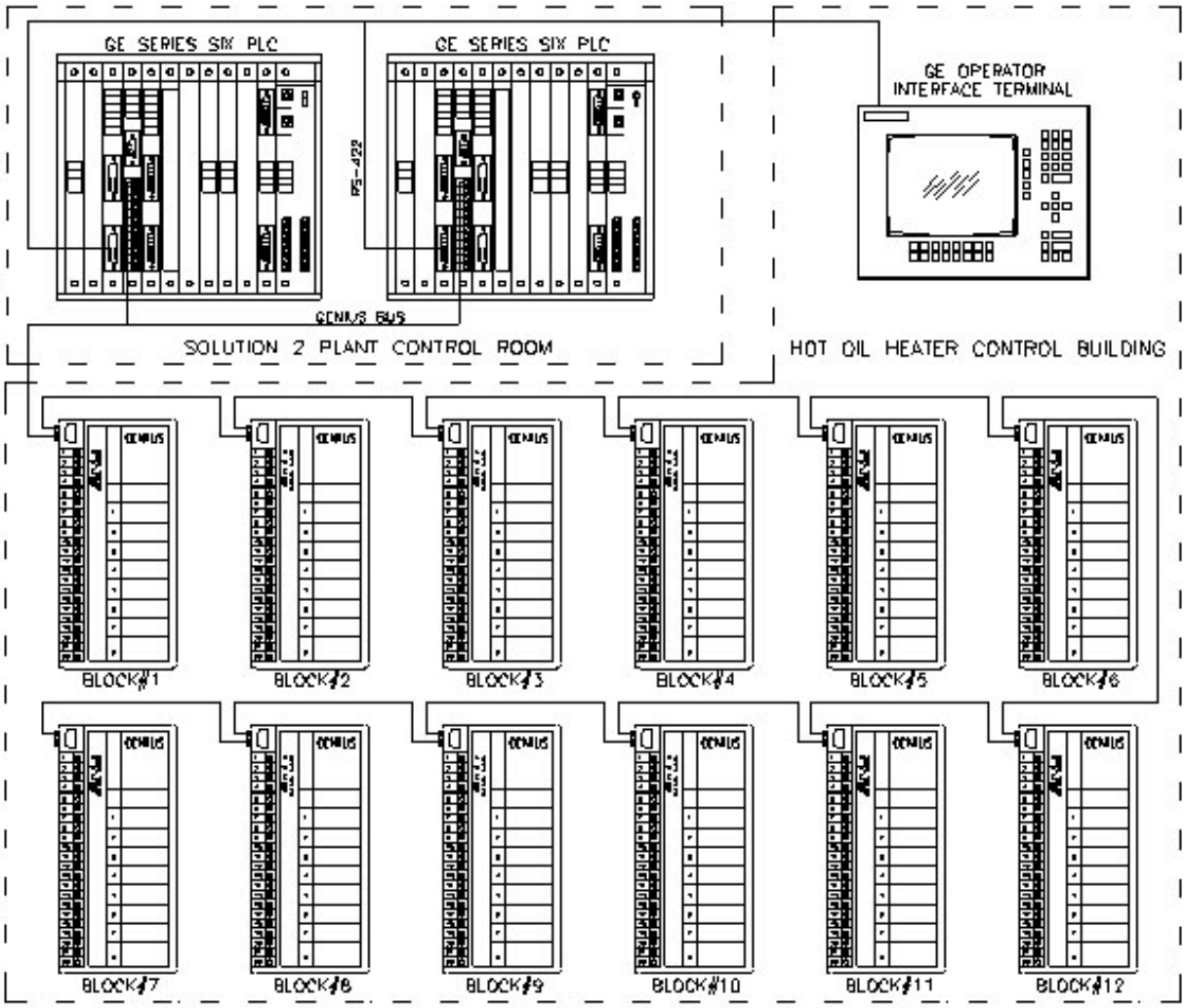

System Specifications:

- Redundant - GE Fanuc Series Sixes
- Genius I/O, ASCII/BASIC OIT

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

www.hinz.com