HINZ
A Rockwell Automation Company

Elk Valley Coal Corporation
Coal Mine Upgrade

The Client:

Elk Valley Coal's (EVC) Cardinal River mine and processing facilities are located just south of Hinton in Alberta. Cardinal River is a traditional open pit mine with a large processing facility and train load out system.

The processing facility consists of two distinct parts: Washer and Dryer facilities. The Coal is washed and graded, then dried to specs. The facility has been in operation for over half a century. In the early 1990's with coal prices floundering, the facility was decommissioned from service. In the wake of the recent coal boom brought about by far eastern economic growth, Chinese in particular, analysts forecasted a stable demand prompting management to put the mine back into service.

The Requirement:

The existing control system in place was relay-based, with little or no documentation. The system was outdated, and cumbersome to operate, with two separate control rooms, one each for the Washer and Dryer facilities. The know-how to maintain the system was scarce and, in some cases, difficult to obtain. Thus EVC requested a complete revamp of their control system, replacing obsolete relay-based controls with a PLC-based control System. EVC also requested a central control room and thorough system documentation and training of personnel to maintain the software solution thus developed. The Control System had to be completely developed, tested, deployed, and test run on an extremely tight schedule.

The Design Solution:

Hinz came up with a solution based on two ControlLogix L61 processors, housed in 17 slot chassis. Ethernet based 17 slot ControlLogix remote racks were deployed throughout the plant to interface with the end devices. A total of 8 PLC and Marshalling panels were designed and installed, each housing two 17 slot chassis.

Hinz also redesigned and retrofitted the existing Motor Control Centers (MCCs) to interface with the new control System. All existing relay-based control systems were decommissioned.

An RSView Supervisory Edition (SE) based Human Machine Interface (HMI) was developed to interface with the new PLC control system. The first of its kind in Western Canada, a distributed thin client architecture was deployed using a central server and 5 remote clients. Four of these clients were located centrally in a newly constructed control room in the washer facility, and a fifth was deployed panel mounted in the dryer facility. All clients had full view and control privileges, thus allowing a single operator to control the entire plant centrally.

Hinz also generated specs for measurement instrumentations to go with the new control system. These instruments were procured by Hinz, and were installed under Hinz supervision according to typical drawings generated by our engineering staff.

The project was fast tracked from its onset, as strict deadlines were imposed. Design, development, and construction activities were performed in parallel.

Hinz undertook the electrical construction through a sub-contractor. For most of the construction, commissioning was performed in parallel. Hinz also provided site construction management and supervision.

In the end, the full system of 6000+ IOs was commissioned on schedule and within the budget

A comprehensive site personnel training program was also undertaken, customized for the implemented solution and client's specific requirements. Multiple sets of project documentation, drawings, and manuals were also generated.

Cardinal River has been in full operation since November 2004.

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System Specifications:

- 1216 Discrete Inputs (120 VAC and 240 VAC)
- 432 Discrete Outputs 24 VDC
- 240 Analog Inputs
- 64 Analog Outputs
- RSView SE Server and Four Clients
- Ethernet Communications to I/O and HMI Devices
- Fiber Optic Cabling between cabinets

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

www.hinz.com