



A Rockwell Automation Company

Husky Oil Ltd. Moose Mountain Radio Communications System

The Client:

Husky Oil Ltd. is a Canadian-based privately-held integrated oil and gas company headquartered in Calgary Alberta. The company's operations include exploration and development of crude oil and natural gas sources as well as refining and marketing of

petroleum products. With assets of approximately \$4 billion and 1500 employees, Husky Oil ranks among Canada's top producers of crude oil, natural gas and recovered sulfur.

The Requirement:

Husky Oil's Moose Mountain facility is a sour oil & gas site located in the Kananaskis region west of Calgary. Initial separation for metering of liquids and gasses is carried out on lease for the two producing wells. After metering the product is pumped, via a 26 km pipeline, to Shell Canada's Jumping Pound gas plant for separation and processing.

Status and control of the 6 pipeline line break valves (LBV) had to be incorporated into the HMI graphics on lease. Data from Shell's Junction 'U', termination

point of the Husky pipeline, also had to be transferred and incorporated into the HMI graphics. Since Husky Oil and Shell Canada would carry out flow calculations for the produced product, Shell required flow data for the specified meters including raw flow totals, pressures and temperatures. In addition to flow data, critical alarms and the ability to shut down the Husky facility from Shell had to be transferred.

The Design Solution:

The original controls system centered around the reuse of existing equipment supplied by Husky Oil. Separate controllers provided process control and data transfer. Allen-Bradley SLC 5/04's initially performed these functions. As the facility process evolved and further demands were made on the control system, an Allen-Bradley PLC 5/11 was also incorporated for process control.

An MDS-4310A radio connected to the SLC 5/04 Communications PLC provides data transfer between the lease, the 6 LBVs, and Shell Canada (via Shell junction 'U'). Each LBV is fitted with an MDS-4130A radio, connected to an Allen-Bradley Micrologic PLC controller.

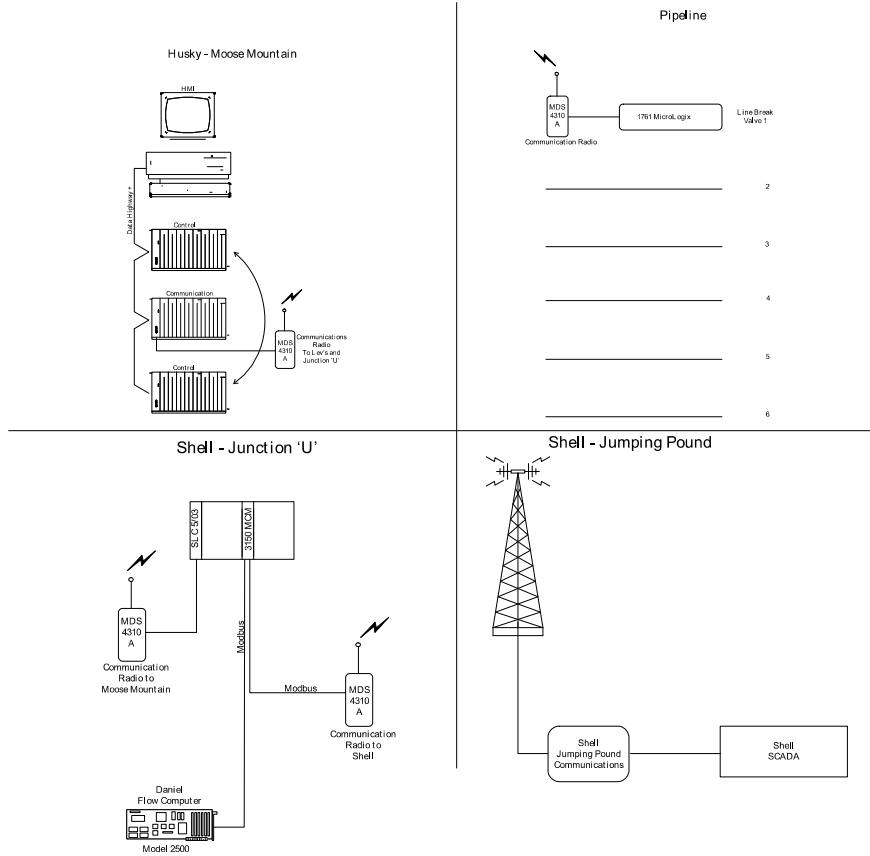
Shell Canada's SCADA system is based on Modbus communication protocol. Because Husky's Allen-Bradley control system is incompatible with the Shell

SCADA system, direct transfer of data between Husky and Shell is not possible. Conversion of the Allen-Bradley data to Shell's Modbus system is carried out at Junction 'U', where an Allen-Bradley SLC 5/04 is connected to an MDS-4310A radio for communications with the Husky well site. A Prosoft 3150-MCM data conversion module, installed in the SLC 5/04 rack, converts the Allen-Bradley data to a Modbus format. The 3150-MCM module then transfers the Modbus data, via a second MDS-4310A radio, to Shell Canada's Jumping Pound processing plant. In addition, a Daniel Model 2500 flow computer, used to calculate the total fuel gas used by Husky Oil, utilizes the 3150-MCM module to transfer data to both Shell Canada and Husky Oil.



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System Specifications:

Husky Oil – Moose Mountain

- 1 Allen-Bradley SLC 5/04 Controller for process control
- 1 Allen-Bradley SLC 5/04 Controller for data transfer
- 1 MDS-4310A Radio

Husky Oil – Line Break Valves (6 Typical)

- 1 Allen-Bradley 1761 Micrologix Controller

- 1 MDS-4310A Radio

Shell Canada – Junction 'U'

- 1 Allen-Bradley SLC 5/04 Controller
- 1 Prosoft 3150-MCM communications module for data conversion
- 2 MDS-4310A Radio
- 1 Daniel Model 2500 Flow Computer

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

www.hinz.com