

CASE STUDY

Canada's Wapiti Gas Plant gets head-start with ABB's Select I/O platform



"In January 2019, ABB's flexible and reliable I/O solution was an integral part of the whole project. Everything came together to allow SemCAMS to begin production at the Wapiti Gas Plant two months ahead of its on-contract schedule and well within budget," said Cory Roberts, Wapiti Asset Engineering Lead, SemCAMS.

In 2017, SemCAMS Midstream began construction of its Wapiti Gas Plant, which would be capable of processing up to 200 million cubic feet of raw sour gas per day. SemCAMS Midstream, a subsidiary of SemGroup Corporation, owns and operates a network of facilities that processes various types of gas, such as dry and wet as well as sweet and sour.

The Wapiti plant located in Canada's gas-rich province of Alberta offers a range of midstream services including compression, sour gas sweetening, liquid recovery and condensate stabilization.

To ensure an on-time and on-budget completion of the Wapiti project, Calgary-based SemCAMS installed ABB's state-of-the-art ABB Ability™ System 800XA with Select I/O platform – a single channel I/O (input/output) that allows project task decoupling, enabling smooth integration and commissioning of hardware and software systems – through system integrator Blackrock Automation.

The Select I/O Remote cabinets were designed in the fall of 2017, one single cabinet design for 27 cabinets and were assembled in April/May for shipment to site in July. The xStream Engineering approach enables the cabinets to be installed and wired at site while the team back in Calgary were configuring the system for

seamless connection at site at the beginning of October 2018 when the IO Loop checks started.

How does the ABB Ability™ System 800XA with Select I/O work?

"Select I/O moves the I/O from the motor control center (MCC) and electrical rooms into the field, eliminating junction boxes and extensive engineering and cabling, which could result in cost-savings of 30-40 percent," explained Brad MacDonald, Product Marketing Manager, ABB.

"It is a single-channel solution. I/O channels are added as needed, enabling flexibility in system designing and managing changes with minimal impact to the cabinet," added MacDonald.

With one design for all remote I/O cabinets, engineering and project time is reduced compared with the traditional solution. Cabinets are built and shipped before final project details are known, decoupling site hardware and installation from back-office engineering, resulting in savings and improving project timeline.

What are the benefits of using Select I/O?



Single-channel I/O enables a wide operating range, it has unique disconnect and is current limited, eliminating the need for fusing and disconnect terminals.



Standardized cabinets remove hardware design and gets cabinets in the field much sooner



Changes can be made by terminating the new I/O wires and adding the new I/O module



The xStream Engineering solution, enables loop checking of the I/O from a laptop, without needing the system or even the 800XA controller



The wizard scans the I/O, creates a loop test from a project I/O list and goes live for testing



Select I/O network, separate from the controller network, allows multiple controllers to communicate with one I/O point, prompting co-existence of devices such as drives and smart motors and using standard networking in the most flexible ethernet topology

Choosing ABB's platform - The Select I/O Difference

"We chose ABB for the Wapiti Gas Plant because it offered us the best solution for this project in terms of the price of the product, ABB's technical capability and experience as well as its service model," said Roberts. "The in-field costs of ABB's Select I/O suited our budget, and it had no end-runs and extensive cabling, which greatly reduced our expenses, making this the right choice for us," she added.

ABB's superior I/O solution is intuitive, easy to maneuver, quick and efficient, noted Kevin Heller, President and Senior Integrator at Blackrock Automation. "We were able to start up in a relatively short time. I literally spent hours not days or weeks to get the Select I/O software up and running. This is something that only ABB can make possible," said Heller.

The Select I/O platform has the maximum number of I/O per controller, it has the fastest scan rate and it has better memory, said Galen Wilton, Senior Programmer, Blackrock Automation. It was quite simple to learn how to use the Select I/O platform, he added. "ABB has an excellent instruction manual for this product, which is easy to follow and helped us make quite a few changes."

The all-in-one automation solution

The team at the Wapiti Gas Plant found that ABB's powerful processors needed less hardware to get scalable, Blackrock's Kevin Heller noted. "The redundancy is simple, yet functional."

ABB has had several vendor partners work with its technology over the years, and this was its first project with Blackrock Automation. "Blackrock understood the Select I/O solution with very little training, and

were able to take the technology to the next level," said MacDonald.

Blackrock's on-site integrators liked working with the Select I/O solution, noted Wilton. "Essentially, you have your engineering work place and your control builder that give you access to everything all in one place."

Operators also really liked the trending and alarming system, which was quite simple and yet effective. "We barely had to do any training," Wilton added. They were able to run tasks and reorder them while the software was using the analysis tool that also enabled instant changes with quick results.

"This digital solution can adapt to last-minute changes easily, quickly and effectively," said Roberts.

ABB's customized service support

ABB Industrial Automation in Calgary, Alberta, assisted Blackrock throughout the project from the detailed design phase to the system integration phase, ensuring the best outcome for SemCAMS' Wapiti Gas Plant.

The team at SemCAMS requested for local support who had been on-site and understood the intricacies of the plant. "We didn't want to be calling a center in another country for support from personnel who haven't seen or understood our plant. ABB customized its support model for us," said Roberts.

Whenever the on-site Blackrock team had any issue, ABB was right there to help identify what went wrong and devise instant solutions, said Wilton. "It's a pretty solid system."