

Calgary Waterworks Counts On DeltaV™ System for Mission-Critical Upgrade to Bearspaw Water Treatment Facility

RESULTS

- Reduced commissioning cost
- Reduced installation cost
- Reduced engineering cost
- Reduced operations cost
- Reduced maintenance cost

APPLICATION

Municipal water treatment plant

CUSTOMER

City of Calgary, Waterworks Division. The city's Bearspaw water treatment plant pulls its water from the Bow River, producing up to 500 million liters of clean drinking water per day, and supplying half the city.

CHALLENGE

The plant had outgrown an aging control system, and Calgary Waterworks was looking for an open, expandable, PC-based system, offering greater speed, capacity, and functionality for this large, mission-critical application. Calgary Waterworks couldn't afford more than a few days' downtime during the system changeover. The system had to be on line before March, when Rocky Mountain snowmelts increase river flow and turbidity, taxing the city's water-treatment capacity.

And, says Calgary Waterworks production superintendent Dan Limacher, "We needed a smooth transition from the old system to the new. We really couldn't afford to be off line for any extended period beyond an order of days."

A major challenge in the project was integrating the quantity of data coming in from a wide variety of interfaces—without disrupting operations. Says Spartan Controls technical sales representative, Tracy McEachern "We had PLCs the city wanted to continue using. They were talking to generators, different types of chemical pumps, chlorination input, that type of thing. We had a PLC that was communicating information back to the city's sister water treatment plant, so all that information had to be brought in via OPC."



"It's easy to add points to, has good trending capabilities, good graphic display capabilities, fast response, and it's easy to use. With (the) DeltaV (system) we can just put in more I/O modules into an existing controller, expand our license, build a new display, and be on line with it in a very short time frame."

Alan Beairsto

Operations Supervisor, Calgary Waterworks



For more information:
www.EmersonProcess.com/DeltaV



SOLUTION

Calgary-based Spartan Control Ltd. talked with Calgary Waterworks about its needs, and the project's parameters.

The DeltaV™ system provided the 3100 I/O upgrade for the plant. Notes Calgary Waterworks operations supervisor Alan Beirsto, "Each part of the plant had to be shut down but never all of it. We had both systems going concurrently."

Says Beirsto, "We commissioned the first filter, which took three or four days, and once we worked out the initial bugs, we were able to commission two filters per day. It put us ahead of schedule." Commissioning time turned out to be 67% less than what Calgary Waterworks had expected.

One big advantage of the changeover was the removal of approximately 1,000 push buttons, along with 800 relays and around 2,000 terminal blocks, greatly simplifying trouble-shooting efforts.

Calgary Waterworks estimates it removed 15 kilometers of cable. Notes Calgary Waterworks electrical foreman Joe Periflow, "You don't have to trace all the wiring out anymore. Now it's just a matter of sitting down in front of the DeltaV and using its diagnostics feature and it tells us everything we need to know."

Eliminating cable also allowed eliminating around 10 cabinets with associated control terminals, hardware and wiring, which says Periflow, "is a massive benefit to us because we don't have to do any preventive maintenance on them. They're gone."

The new system's library of control strategies significantly reduced configuration. Says Spartan Control's senior project engineer Oleg Rojkovski, "After testing everything, on the first filter bed, it took us only 20 minutes to clone the database and build the configuration for the second bed."

With OPC, communications among the varied interfaces were seamless. Says Periflow, "For us it was really nice to deal with only one system out here where we tied in a device, with a single address, the device address would then propagate to the entire database."

The new system provided smoother control of key operations, like filter bed backwashes. And it provided simpler operations and maintenance for the limited operations staff. Says Periflow, "All the statuses come now in the DeltaV screen, which is true status, and it's always there. Nothing to burn out, nothing to replace. Nothing to guess at." With the DeltaV system's ability to add text files and even launch other applications, Calgary Waterworks began moving training materials on line.



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Calgary Waterworks Electrical Foreman



Says Beairsto, "It's easy to add points to, has good trending capabilities, good graphic display capabilities, fast response, and it's easy to use." He adds, "With DeltaV we can just put in more I/O modules into an existing controller, expand our license, build a new display, and be on line with it in a very short time frame."

Dan Limacher concludes, "The project was on budget; it was on time. The plant was at no time off line and at no time did we have a process upset."

Calgary Waterworks anticipates new industry challenges, regulations, and guidelines. Says Limacher, "We foresee many changes at this plant and the other plants with respect to new processes, optimization, and energy management, and we see the ability of DeltaV, its expandability to accommodate all that we see in the future."

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