

Hydro Ottawa

Challenge

To consolidate the operations of 5 different utilities into a single new hydro electric utility and to upgrade its command and control operations to a new state-of-the-art technology center with a display wall that would monitor flow data, real-time video, TV, broadcast, cable and SCADA inputs.

Solution

A new Operations Center with two display walls with powerful display wall processor from Jupiter systems which enables the center to pull information from many sources, real-time, enabling the entire team to receive, collaborate and respond to information in a single unified way.

Some Background

Based in Ottawa, Ontario, Hydro Ottawa Limited, a wholly owned subsidiary of Hydro Ottawa Holding Inc., was created on November 1, 2000, from the consolidation of five adjacent utilities: Gloucester Hydro, Goulbourn Hydro, Kanata Hydro, Nepean Hydro and Ottawa Hydro with a sixth, Casselman Hydro to join In May 2002,.

Municipal restructuring and the creation of the new City of Ottawa on January 1, 2001, as well as population growth and changes in the electricity marketplace drove the need a new corporate structure. Hydro Ottawa Limited and the former utilities have been an integral part of the growth of its city for almost a hundred years.

The decision to build a new state-of-the-art control center made in 2005 to consolidate the control operations from what had been 5 autonomous utilities with four different SCADA (Supervisory Control And Data Acquisition) systems. into a single Operations Management System (OMS).

This system would track and manage calls, measure electric flow, control distribution and alert for outages and monitor security throughout the system. It would bring all the data into a single large centrally displayed screen. It also enabled Hydro Ottawa to successfully complete the merger and upgrade its system with a new state-of-the-art system OMS.

Today the utility is the second largest electricity distribution company in Ottawa, responsible for the delivery of electricity to more than 282,000 residential and business customers and over 1050 square of kilometers of power distribution.

Chief Challenges

The new center had to be refit into an existing building that was a garage for a small fleet of cars, but that meant the utility could design a command and control center in a new raised space from the ground up and bring all of the small command and control operations under one roof.

The greatest challenged, however, was the consolidation of 5 utilities and 5 sets of work practices, tools and equipment. A lot of practices and procedures had to be changed. There were work issues with men. Work in rural to city setting totally different. Some of smaller cities didn't have control room. And with the exception of the Ottawa utility, none had to operate 24/7.

At the time Hydro Ottawa, as is the case with other utilities, used symbolic line drawings on paper and wanted to make the change from paper to a digital electronic format.

There is still a lot of paper that was used in the transition and even now as a back up. Long term the utility plans to transfer all of its information into the display and manage everything for the transmission facility.

Work between Hydro Ottawa and their systems integrator, DuoCom Canada Inc., greatly contributed to the project's success and enabled the utility to get up and running with its new system almost seamlessly. Hydro Ottawa relied on DuoCom to help that make the transition and learn the new tools. It was a collaborative and interactive process with the changes and modifications and dry runs and practice prior to going live. The two companies just clicked from the start and worked together with Jupiter Systems. Even today DuoCom remains involved, a partner making suggestions for improvements and answering any problems that might occur

Initially the power distributor looked at a smaller 1 x 4 unit wall and a display wall controllers from a different vendor. But when the decision was made to go to a 2 x 4 display wall, there was no way the competitive processor could cover the high performance project. For the scalability, performance and value. Jupiter Systems was an obvious choice.

Jupiter Display Wall Fusion 960 Processor

A video display wall is the heart of the operations center, capable of displaying data from a broad range of information sources from remote system monitors, the Internet, a high-speed network, TV, workstation, PCs or their own applications, onto a shared screen. On the back-end, the display wall processor acts as the brains of the system, allowing information from all of these disparate sources, in whatever format to be combined in whatever combination is needed on a single screen.

The display wall processor enables the dispatchers to organize and manage all the data that appears on a display wall screen to see and share the same information from many different sources and formats, and to size and place them anywhere on a screen. These powerful controllers allow users to switch easily among inputs as needed to monitor power demands, distribution, and flow throughout an entire city, or even, as in the case of Hydro Ottawa, the province's second largest distributor.

Results

The system has been up and running for 18 months for some 15,000 hours with no service failures.

Hydro Ottawa now works as a single team from the same rules and equipment, the same platform and maps. They have a unified and collaborative approach. There are people on duty 24/7 and outage and response times much quicker.

The new command and control center now controls 900 circuit breakers, 78 distribution stations, and 1050 square kilometers of cable and are responsible for

monitoring security throughout the utility as well. It is run by three systems operators, 2 dispatchers, 1 planning coordinator and shift supervisor.

Hydro Ottawa can add new processes and functions to its system in an ongoing and evolving process. Jupiter's display wall controllers offer easy expansion and scalability, enabling the new system to meet both old and new needs. the Jupiter processor allows the company's to runs own applications directly from the processor, thereby freeing up critical resources from the control floor.

The new command and control center includes a new customer information to be able to do system mapping online.

DuoCom Canada Inc.

DuoCom Canada Inc. is Canada's leading provider of audio visual solutions. The Montreal - based system integrator has 9 locations through out Canada in Montreal, Toronto, Ottawa, Vancouver, Kitchener, Kingston, Quebec, Moncton and Halifax. They have been in business since 1974.

Equipment Used

The initial layout included one 2x4 wall (powered by Jupiter) for Operations and a second wall 1x2 array (processed by Crestron and switchers). So you will see the initial line of six cubes, and at the end another line referencing four additional cubes. In total, ten cubes. Controller: Jupiter Display Wall 960 Fusion Controller, with 16 outputs.