

Wolfe Island Wind Farm Keeps Work Teams Safe in Wind Turbines



Maintaining and operating wind farms can be dangerous work and the ability to stay in touch, as technicians climb up and down inside the 80-metre steel towers, is critical. However, wireless communications cannot easily penetrate through the steel structures. To enhance the safety of its work teams, Canadian Hydro, acquired by TransAlta in 2009, deployed MOTOTRBO™ digital radios at its Wolfe Island wind farm. The radios provide seamless communications not only inside and outside the towers, but also throughout the 49 square miles of the company's second-largest wind farm.

Situation: Lack of reliable communications pose danger for wind turbine crews

Wolfe Island, the largest of Canada's Thousand Islands, is home to Ontario's second-largest wind farm. Located at an entrance to the St. Lawrence River in Lake Ontario near Kingston, ON, the Wolfe Island site's 86 wind turbines generate up to 594,000 megawatt hours (MWh) of energy per year.

Maintaining the wind turbines isn't an easy task. Workers must climb the ladder inside each 80-metre tall steel tower to reach the nacelle (housing that holds the generator and gearbox) at the top of these large structures.

"Our teams are responsible for all maintenance and operations of these turbines," says Mike Jablonicky, Site Supervisor, Wolfe Island Wind Farm. "We run preventive maintenance, repair them and get them back on line if something isn't functioning properly. We also maintain the substation and monitor the entire 49 square mile park to make sure it's operating smoothly."

Whether the task involves accessing the rotor assembly outside the nacelle or maintaining interior components, the risk of a serious fall is always a present danger.

Products

- MOTOTRBO XPR™6550 Portables
- MOTOTRBO XPR™6550 Mobiles
- MOTOTRBP XPR™ Repeater
- MOTOTRBO Base Station

Benefits

- Coverage throughout the island
- Coverage inside steel wind turbines
- Emergency Call
- Noise cancelling microphones



“Our biggest concern was safety for our work crews and reliable communication that works 100 percent of the time. We didn’t have that before. The MOTOTRBOs let our guys talk tower to tower, share information, and stay safe. That’s what we wanted and that’s why we got these radios.”

- Mike Jablonicky,
Site Supervisor, Wolfe Island
Wind Farm

“Proper communication must be in place”

Wolfe Island’s six technicians work together in pairs of two, ensuring that if one is injured or needs help, the other is nearby. However, with cellular reception nonexistent inside the steel structures, technicians were unable to communicate until they reached the top of the tower and opened the nacelle doors.

“Communication is critical in an environment like this where heights are involved,” says Jablonicky. “Not only do we want to be prepared if anything goes wrong, proper communication must be in place at all times to ensure we are working efficiently. Because the cellular antenna was too far away, reception was very weak throughout the wind farm. We needed reliable two-way radio communications and wanted to operate it as our own private system.”

Weather is also a constant concern on the island, as storms blow in quickly and with force across Lake Ontario. When a technician is working inside a tower, unable to watch the skies, Jablonicky needed a way to contact his crew immediately to get them out of the tower quickly and safely.

Solution: MOTOTRBO digital radios

In June of 2009, Jablonicky contacted Cam Galbraith of Point to Point Communications, a Motorola channel partner based in Barrie, Ontario, to explain the coverage issues. Jablonicky had worked with Point to Point and Galbraith, while managing the company’s Shelburne facility. Galbraith arranged a MOTOTRBO digital radio demonstration and Jablonicky quickly saw the value.

“We sent a technician up to the nacelle and had a technician at the bottom,” Jablonicky recalls. “Previously, we would have no communications until that person reached the top and opened the door to use the radio. When we did this test with the MOTOTRBOs, we were able to penetrate the tower from the ground right up through the turbine to the top.”

While the MOTOTRBO radios passed the first test with flying colors, Jablonicky also wanted to test the range of the radios from one side of the wind farm to the other, without the use of repeaters.

“The range was pretty good with the digital radios even without the repeater,” he says. “Not quite the full seven miles across but very close. When we used the repeater, we were able to not only communicate inside the wind turbine, but we also had coverage throughout the entire island.”

Point to Point Communications deployed MOTOTRBO digital mobile radios in each of the crew trucks, along with a base station at the main Operations and Maintenance building on the island, and a repeater on an existing microwave tower. In addition, portable radios were issued to each of the technicians, replacing all of the existing push to talk cellular phones.

“Cam’s team actually spent the night on the island so they could complete the installation in two days,” says Jablonicky. “They did an excellent job with no hiccups. I even recommended this solution to our Melancthon site up in Shelburne, ON and they also made a purchase of MOTOTRBOs.”

“In areas like this, where phone lines and cell service are often inadequate, you need something that works every time. The MOTOTRBO radios work great in this environment and were the perfect choice for our needs.”

– Mike Jablonicky, Site Supervisor, Wolfe Island Wind Farm

Results: Reliable communications keep work crews safe and more productive

The primary goal on Wolfe Island was to ensure that the wind farm’s work teams had access to reliable communications, especially when climbing inside the towers or working at the top inside the nacelle. MOTOTRBO digital radios enable communications inside and from the top of the towers, as well as throughout the island. The Wolfe Island crew also found the placement and functionality of MOTOTRBO’s emergency button on top of the radio to be useful.

“The emergency button makes it easy for our guys to let us know they require assistance,” says Jablonicky. “And as an added precaution, once the emergency button has been depressed, the radio continues to send the signal until someone has acknowledged the alert.”

MOTOTRBO digital radios have helped technicians on Wolfe Island work together, stay safer, and have even increased the team’s productivity.

When technicians are up inside the turbines and need help, they no longer have to climb down and exit the tower in order to reach someone on the radio. They can make that contact, have the conversation, and continue with the job at hand.

“Right now we’re doing preventive maintenance on the wind turbines,” says Jablonicky. “Not having to make extra climbs substantially increases our crews’ productivity and saves the better part of a day.”

In addition to increased safety and productivity, other critical benefits include:

- **Priority communications for enhanced safety:** The MOTOTRBO’s “Transmit Interrupt” feature allows dispatch to interrupt lower priority communications, permitting emergency transmissions to be delivered immediately.
- **Scalable to adapt new applications as needed:** The MOTOTRBO digital radios enable custom applications that adapt the radio to specific business tasks. “We went with the basic functionality up front so we could use the radio and see what our needs were before we jumped into things,” says Jablonicky. “The flexibility of the radio allows us to add applications as we move along.”
- **Rugged enough for a wind power plant:** Wind turbines are typically located in open, sometimes challenging environments and work teams operate in both good weather and bad. MOTOTRBO radios meet the IP57 standards for submersibility in water (portable models) and U.S. Military and Motorola 810 C, D, E, and F standards for durability and reliability.
- **Double the capacity saves money:** MOTOTRBO is designed with TDMA technology, which effectively doubles the capacity per channel with no need for additional repeaters, saving both equipment and equipment maintenance costs.
- **Battery life lasts 40% longer than analog:** Digital technology enables 40% longer battery life, providing reliable communications throughout extended work shifts.



Motorola MOTOTRBO XPR Digital Radios



About Point to Point Communications

Founded in 1982, Point to Point Communications (PTP) is a fully authorized Motorola Service Center and Motorola Canada systems dealer. Delivering full service solutions and end-to-end connectivity for mission-critical and line-of-business applications, PTP works closely with customers from needs assessment through implementation and support. Since its inception, PTP has earned a wide-reaching reputation for consistently delivering the highest quality products and services to its valued customers.

The right radio for the right job

With wind power gaining strong momentum in North America and across the world, MOTOTRBO offers the right kind of communications on the job site, whether in the construction stage or the operations and maintenance phase.

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To learn how MOTOTRBO can help your business

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