

Ideas on the Edge

Water Quality by Wire

SHORTAGES OF WATER PLANT PERSONNEL ARE LEADING TO DISASTER IN SMALL COMMUNITIES. THE ANSWER, SAYS SAULT COLLEGE RESEARCHER SUBHASH VERMA, IS A NEW KIND OF LONG DISTANCE OPERATOR.

October 27, 2005 is a day the people of Kashechewan won't soon forget. That's when planes began arriving in the tiny community 400 kilometres north of Timmins to rescue the scores of residents who had fallen sick

living with inadequate and malfunctioning water treatment systems. A big part of the problem, according to Professor Subhash Verma at Sault College, is recruiting qualified water plant operators. "Some communities in Ontario are isolated, and it's difficult to get people to want to move there."

Professor Verma, however, has a potential solution: water treatment plants that don't require continuous on-site supervision. Instead, a trained operator located in

Professor Subhash Verma inspects water treatment equipment with Ceri Parker, a student in the Environmental Technician program.

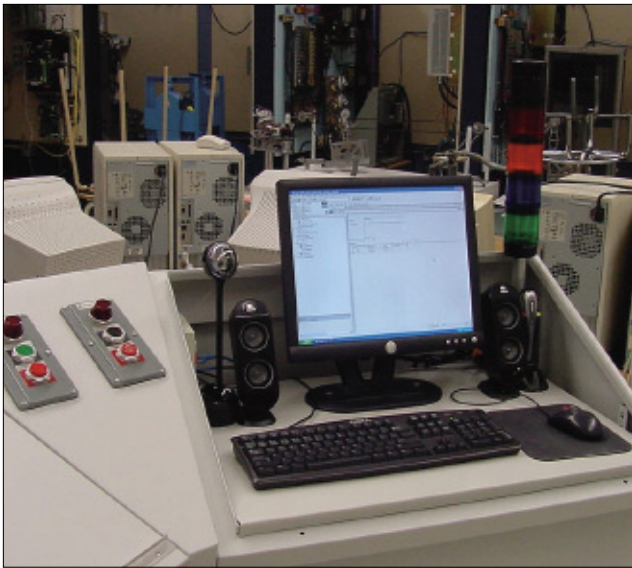


SUBHASH VERMA

because of a contaminated water supply. Eventually, over 800 people were evacuated.

Nor is the Kashechewan disaster likely to be the last. People in many other isolated Canadian communities are

a larger community could monitor water quality at several smaller plants, using a two-way wireless link. Video cameras with motorized mounts and zoom lenses would enable the operator to scan gauges and controls at the



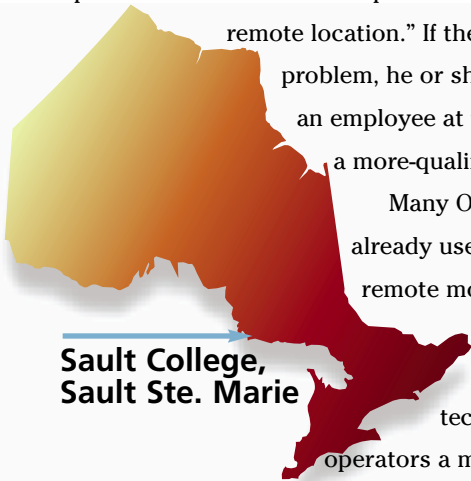
remote locations, with computer screens and audio channels providing additional feedback.

“This technology doesn’t replace someone physically going to the plant if there’s a problem,” stresses Professor Verma. “But it means that the main trained operator doesn’t have to be permanently stationed in the remote location.” If the operator detects a

problem, he or she could either alert an employee at the site, or dispatch a more-qualified technician.

Many Ontario communities already use some degree of remote monitoring to track water quality, but Professor Verma’s technology would give operators a more comprehensive

picture and more detailed information. “We’re using a more advanced particle counter, for example, which should give us a better idea if something is wrong with the water.”



**Sault College,
Sault Ste. Marie**



A pilot installation—funded in part by the Ontario Innovation Trust—has been thoroughly tested at the Sault College campus, and the technology has been rolled out to a test facility at the town of Desbarats, east of Sault Ste. Marie. The system won’t be ready for wide-spread public

use for a few more years, but in the meantime, Professor Verma says he’s also excited about how the project is enriching the Environmental Technician program at the College.

“We’re doing lots of great research here, but that’s only half of it,” he says. “It’s also a great opportunity for people to train to become operators in the future. This hands-on environment is teaching them a lot.”

Project: Water Treatment Plant Automation
Institution: Sault College
Research Sector: Environment
Principal Investigator: Subhash Verma
Trust Investment: \$295,316
Total research investment from all sources: \$738,290

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 REAL-WORLD BENEFITS FOR ONTARIANS:
 • improved water quality for remote communities



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Infrastructure for Innovation About the Ontario Innovation Trust

The Ontario Innovation Trust was created in 1999 by the Government of Ontario to invest in research equipment and facilities at Ontario’s universities, colleges, hospitals and other non-profit research institutions. The Trust is governed by a volunteer Board of Directors, according to the terms of a Trust agreement established by the Ontario government. A small permanent staff looks after day-to-day operations.

Since its inception, the Trust has committed almost \$843 million to strengthen Ontario’s position in the global marketplace of ideas. This represents more than a third of the \$2.44 billion in total funding that has been invested in Trust-supported projects.