

## Success Stories

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### Supporting the success of a Canadian innovator in water purification

2013 June 13 — Collaborations with industry are a high priority for AECL these days. Applying our expertise and facilities to strengthen the competitive advantage of others in the Canadian economy is not only welcomed, but encouraged. And when our collaborative partners succeed, so do we.

An excellent example of this is AECL's collaboration with Ottawa-based EcoVu Analytics Inc. EcoVu, a firm providing water purification expertise, approached AECL some time ago to collaborate on developing applications of their patented purification technology. This technology has been batch tested in the laboratory and demonstrated successful removal of radioactive contaminants from CANDU primary water systems. All reactors use various purification techniques to maintain low levels of corrosive and radioactive materials in their cooling circuits and EcoVu's technology is showing potential to be very effective in further purifying these cooling waters.

Based on the effectiveness and tunability of the process, applications to a variety of environmental and waste management cleanup issues became apparent. At CRL, these included fuel bays and tanks containing contaminated waste products from isotope production but the full potential remains to be explored.

"The collaborative work undertaken at AECL was performed by staff from Hydrogen Isotope Technology Branch (primary water systems) and the Analytical Chemistry Branch (radioactive waste)," says Ken Franklin, the CRL Senior Research Scientist who has been looking after the technical aspects of the project.

"The work is collaborative – they have the technology and we have unique applications and expertise. Together, we have the potential to use this technology to address AECL issues and help demonstrate its viability for other applications," he adds.

One such application that occurred to the team is that the technology could also be applied outside the nuclear industry to non-radioactive heavy metal removal from other waste streams (mining, oil sands, fracking, etc.).

The intermediate results to date have been dramatic. With industrial partner EcoVu, the technology and process demonstrated 99.998 per cent removal of uranium, and 99.88 per cent removal of simulated fission product and heavy metal contaminants from a surrogate waste solution. The versatility of EcoVu's process to mitigate specific hazardous components in nuclear and industrial process streams was confirmed, signalling the promise of continued work with EcoVu in innovation.

"EcoVu is a made-in-Canada solution to complex, challenging water management issues here and around the world, and across many different applications and uses of water. Collaboration with AECL underscores the importance and significance of our work in the liquid nuclear waste sector with application to safety in global nuclear markets," said Ray Novokowsky, President & CEO, EcoVu.

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Work continues to further refine the innovation, and both parties are working together to determine the best path forward to advance this technology. As Canada's premier nuclear science and technology laboratory, AECL is able to engage with the private sector and work together on the innovation necessary for future success.

#### **About AECL**

Atomic Energy of Canada Limited (AECL) is Canada's premier nuclear science and technology organization. For over 60 years, AECL has been a world leader in developing peaceful and innovative applications from nuclear technology through its expertise in physics, metallurgy, chemistry, biology and engineering.

Today, AECL continues its commitment to ensure that Canadians and the world receive energy, health, environmental and economic benefits from nuclear science and technology with confidence that nuclear safety and security are assured.

Contact:

Pat Quinn

Director, Corporate Communications

AECL, 1-866-886-2325

#### **About EcoVu Analytics Inc.**

EcoVu's business is cleaning water. [EcoVu](#) aims to provide choice and flexibility to clean water and validate its purity, quickly and conveniently. EcoVu works with its clients to eliminate, to a greater degree, a broad spectrum of contaminants, far more easily and economically than anyone else. EcoVu cleans water, but delivers trust – trust in the purity of the water and confidence that it has been cleaned right.

Contact:

Jacques Guerette

Jacques.Guerette@ecovu.com