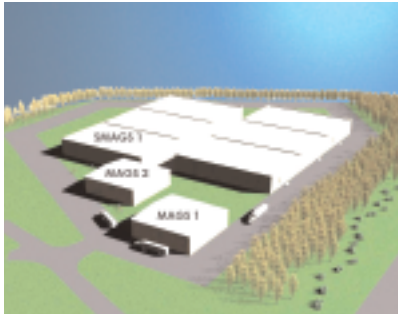




## IN THIS ISSUE:

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ATOMIC ENERGY OF CANADA LIMITED  
 CHALK RIVER LABORATORIES  
 VOLUME 2 ISSUE 2 SUMMER 2007



## AECL receives approval to build SMAGS

AECL is moving ahead on a Shielded Modular Above Ground Storage (SMAGS) facility. Recently approved by the Canadian Nuclear Safety Commission (CNSC), AECL will contract M. Sullivan & Son Construction to build the first of a series of six buildings starting in the spring of 2008.

Currently, wastes are stored in Modular Above Ground Storage (MAGS), large steel warehouses or in-ground concrete bunkers, depending on their characteristics.

The new SMAGS building are "shielded" meaning that they are constructed of pre-cast concrete panels and frames providing suitable protection from the housed wastes. By storing waste above ground, the waste containers can be better and more easily monitored.

The SMAGS concept was selected because it has already demonstrated its effectiveness at the Bruce Power Station, located approximately 250 kilometres northwest of Toronto. The project is expected to be completed over the next 20 years and will effectively double the current waste storage capacity. Wastes to be stored are generated by on-going laboratory operations, decommissioning activities, and off-site generators such as isotope producers, hospitals, and universities. The construction of the new SMAGS buildings will ensure the safe storage of future waste.

## Chalk River medical isotopes benefit local patients

On April 12, AECL welcomed representatives from the Pembroke Regional Hospital (PRH) to participate in a tour of our facilities. The hospital recently launched its nuclear medicine program, and officials from both PRH and AECL felt it would be beneficial for them to have a better understanding of where their medical isotopes come from – our very own Chalk River Laboratories. The hospital anticipates approximately 1500 nuclear medicine tests in the first year.

Pictured (from left): Donna Roach, Special Advisor, AECL; Catherine Junop, Vice-President of Human Resources and Organizational Services, PRH; John Wren, Vice-President of Finance and Decision Support, PRH; Sandra Keon, Vice-President of Clinical Programs, PRH; Pierre Noel, President and CEO, PRH; Carolyn Levesque, Community Relations Coordinator, PRH; Shaun Cotnam, Manager of Site and Community Affairs, AECL.





Why we do what we do...

I am occasionally asked why the people I work with are so dedicated to the success of the Canadian nuclear industry. I don't think there is a single answer but I usually try to think about it from two perspectives: health and the environment. Even within these two important categories, there are many dimensions, but let's focus on the production of medical isotopes and the reduction of carbon dioxide (CO<sup>2</sup>) emission.

The National Research Universal, or "NRU" reactor here at Chalk River continues to operate safely and reliably, performing important nuclear research and producing medical isotopes. In fact, the use of the isotope Cobalt-60 in cancer therapy was a technique pioneered through work done at the Chalk River Laboratories. Not many people are aware of this, but each year 12 million cancer treatments are administered using Cobalt-60 produced in NRU (that's about 33,000 people being treated each day).

NRU also produces more than 50 per cent of the world's supply of short-lived medical isotopes for use in diagnostics testing, and often eliminates the need for exploratory surgery. Each day 43,000 people benefit these isotopes.

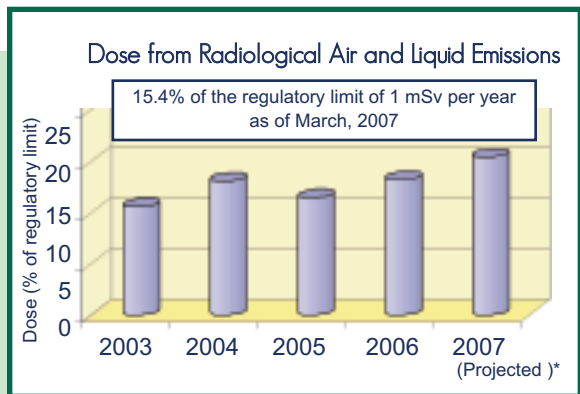
So, although the NRU reactor celebrates its 50th birthday this year, it continues to be a safe and reliable research and medical isotope workhorse, performing at a world-class level. Perhaps to emphasize that there is still a lot of life left after we hit 50, NRU recently set a new world record for weekly and daily medical radioisotope production—ensuring the global supply of isotopes, and contributing to the health and well-being of people around the world.

Then of course there is the environment, and our ever-growing awareness of our carbon dioxide emission, or "footprint"; much of which is tied to energy production. We at AECL are proud to mention that nuclear electricity is generated without CO<sup>2</sup> emissions, but this only tells part of the story. What about the full life cycle CO<sup>2</sup> footprint when you consider mining, transportation, storage, nuclear power plant construction, and finally decommissioning?

## Environmental Report

As a certified ISO 14001:2004

Environmental Management Systems organization, AECL is committed to studying and reducing the low impact of our operations on the environment. The estimated annual dose to those living within a 8-kilometre radius of CRL is equivalent to roughly 1/4 of the amount of radiation that you would receive during a medical x-ray (0.4 millisieverts or mSv), and is well-below the regulatory limit for the public set by the Canadian Nuclear Safety Commission (1 mSv/year).



\*Actual figures for 2007 will be made available when all data is collected and complete at the end of this year.



### Plain Talk (continued)...

Compared to the full life cycle CO<sup>2</sup> emission of other energy generating technologies, nuclear-electric boasts some of the lowest CO<sup>2</sup> emissions. At 30.5 grams of CO<sup>2</sup> per kilowatt-hour of electricity\*, nuclear is only slightly higher than hydroelectric at 25 grams. Perhaps even more surprising, CANDU™ reactors emit less than half the CO<sup>2</sup> emission of wind-electric, which produces 65.5 grams through its full life cycle. Other energy generating technologies fall into even higher CO<sup>2</sup> emission classes: solar-electric generation produces 10-times as much CO<sup>2</sup> as nuclear, coming in at 372 grams, 450.0 grams for natural gas-electric, and 986.0 grams for coal-electric generation.

We do not produce electricity at the Chalk River Labs, but through the work we do in support of CANDU reactors, many thousands of tons of harmful greenhouse gas emissions are avoided each year. This translates to better air quality for everyone, and lessens our impact on the environment.

So the next time you wonder why the people at the Chalk River Labs are so dedicated to the success of the Canadian nuclear industry, think of medical isotope production and carbon dioxide reduction, think of world health and the environment, and it will become easier to understand why we are so proud to do what we do.

Brian McGee  
Vice-President, Nuclear Laboratories

*\*CO<sup>2</sup> per kilowatt-hour: If you want more information on the numbers quoted, contact us via info provided on back page.*

### A New Way to See the World: Canada's first neutron reflectometer unveiled at our very own NRU reactor

On June 15, the National Research Council (NRC) and the University of Western Ontario unveiled the National Research Universal (NRU) reactor's newest gift to Canadian science – the nation's first neutron reflectometer. In simple terms, a neutron reflectometer is a scientific instrument that reflects neutrons off the surface of a specimen to gain knowledge about the material inside the specimen.

Canada has a historic strength and a world-class reputation for the use of neutrons in materials research. In fact, the 1994 Nobel Prize in Physics recognized AECL research scientist Bert Brockhouse's pioneering role in establishing the use of neutrons in research.

The proposal to build the neutron reflectometer was brought forward by the University of Western Ontario, and supported by 12 other Canadian universities from coast to coast. The new instrument was funded in a partnership between the Canada Foundation for Innovation, the Ontario Innovation Trust, the Ontario Ministry of Research and Innovation and the National Research Council.

This new tool will be invaluable to NRC scientists, and the benefits will be shared with universities and industries from across Canada and around the world. AECL Chalk River is proud to be the home of this world-class piece of technology.



Patrick Pilot, Canada Foundation for Innovation; John Yakabuski, MPP; Brian McGee; Cheryl Gallant, MP; Ted Hewitt, University of Western Ontario; and Pierre Coulombe, NRC President at the ribbon cutting of the Reflectometer.



# PROJECTS & Accomplishments



## The fight against Cancer keeps AECL staff up all night

Each year dozens of AECL employees participate in the Canadian Cancer Society's Relay For Life. This year staff took things to a new level, registering eight teams from AECL's Chalk River Labs.

In 2006, AECL was honoured to accept the Canadian Cancer Society's Community Partner Award, and this year we are proud to be recognized as part of the "10K Club." This designation is given to an organization who's members are able to raise \$10,000 or more in support of the Relay.

Staff were also able to show their support through the purchase of luminaries, candles lit in honour of those touched by cancer. More than 400 luminaries were sold, either by AECL employees at the Chalk River and J.L. Gray locations, or in honour of an AECL employee. The strength in our numbers was evident in the AECL Community Luminary Village, which lit a significant portion of the Dundonald Hall track all through the night.

This year's Renfrew County Relay for Life raised more than \$300,000, which will go toward life-saving research and treatment. We are proud to have so many staff who are dedicated to helping make cancer history.

Pictured above: The AECL Community Luminary Village lights a portion of the track. Pictured upper right: Dedicated AECL "Relayers" Jeremy Pencer and Margaret Bates walk the rain-flooded track. Pictured right: Greg Csullog, AECL employee and Honourary Cancer Survivor participates in the Survivors' Victory Lap.



## Showcase Petawawa 2007 Winner!

Angela Danyluk of Petawawa was the lucky winner of AECL's "Energy Efficiency" draw at Showcase 2007, held April 20-22 at the Petawawa Civic Centre. Angela's prize: a basket full of energy efficient goodies, including power saver light bulbs and a programmable thermostat.

Congratulations Angela, and thank you to everyone who visited Showcase!



*Look for the AECL Site and Community Affairs team at the 150th Annual Beachburg Fair, July 26-29.*

## Keys Campus is open for business

An open house event held May 23, marked the official opening of AECL's Keys Campus in Deep River. The former Keys Public School provides office space for roughly 115 employees and has a dedicated space for training and leadership development. The office environment features a laser network connection, IP phones and video conferencing capability. Staff began moving into the renovated space in early May.

Deep River Mayor Ann Aikens and AECL's Vice-President Brian McGee raised the "Voyageur" flag, a symbol of AECL's journey toward excellence in business operations.

AECL agreed to lease the Keys building from the Renfrew County District School Board last December, for a period of at least five years.

"We would like to extend our thanks to the School Board," said Sue D'Eon, Section Head of Facility Management. "You have worked with us, and have leased us office space which we need very much right now."

Pictured (from left): Brian McGee; Renfrew County District School Board (RCDSB) Trustee, Norm Hazelwood; Deep River Mayor, Ann Aikens; RCDSB Trustee, Terry Harkins, RCDSB Trustee, Barb Basso; General Manager, Nuclear Operations, AECL, Wayne Inch; Director of Supply, AECL, Steve Lawton.



## Public Hearings for the MAPLE reactors and New Processing Facility

AECL has recently filed its application to the Canadian Nuclear Safety Commission (CNSC) requesting the renewal of its operating licenses for the MAPLE reactors and their associated New Processing Facility. The current licenses expire on November 30, 2007. AECL has requested a renewal of 47 months so that the new licenses will be better aligned with the expiration of CRL's site operating license in 2011.

This is an open process where interested members of the public give their support and/or voice their concerns. Presentations can be made in person, by phone, by email and/or by letter. The CNSC process requires interveners to file their submissions with the Secretariat no later than Monday, August 13th, 2007. At that time, you must indicate to the Commission if your presentation will be in person, by phone, by email and/or by letter.

Ms. Louise Levert  
Commission Secretariat  
Canadian Nuclear Safety Commission  
280 Slater Street  
Station B, Box 1046  
OTTAWA, Ontario K1P 5S9  
Tel.: (613) 996-9063 or 1-800-668-5284  
Fax: (613) 995-5086  
Email: [interventions@cnsccsn.gc.ca](mailto:interventions@cnsccsn.gc.ca)

These public hearings are important to supporting AECL's continuing business needs so your participation in the process is both encouraged and appreciated. As always, thanks for your continued interest and assistance.



# STAFF in Action

## Thanks for the memories...

In just a few short months, I'll be a "baby boomer retiree". Thirty years with AECL has provided me with so many memorable experiences and opportunities but I can honestly say that my most rewarding career experience has been the time I've spent with you. It's been my absolute privilege to represent AECL in the community and to meet so many of you over the years. We've shared a lot in that time; I hope I've been a good listener. Thank you for giving me the career that I am blessed to say was mine—it has been fulfilling and exciting each and every day.

For the next year, retirement means a nice long break. My husband, Cliff, has been the rock in our relationship so we're looking forward to spending the next phase of our lives with our phenomenal kids, Stephanie, T.K. and Ivan, and of course with, Lexus, our German Shepherd. After that, I'll just wait to see where destiny takes me.

And, as one door closes another opens so please welcome the new Site and Community Affairs manager, Shaun Cotnam. A "Valley lad", Shaun lives with his wife, Heather, and two lovely daughters in Petawawa. He is a chemical engineer (McMaster University) and holds an MBA, which he completed while working at Dofasco in Hamilton. Since joining AECL in 1992, he has held positions of increasing responsibility, most recently with the company's commercial division. In his new role, Shaun will lead our internal and external communications initiatives as well as be your first point of contact for Chalk River Laboratories. You'll find his contact information below.

So thanks for the memories and for the great support you have given me over the years. I always felt I had the best job at AECL and now I'll have the best job ever—being a stay home wife, mother, daughter, sister and just plain ol' Donna...

Pictured: Donna Roach hands the coveted "Community Van" keys to Shaun Cotnam, AECL's new manager of Site and Community Affairs.



## Closing Note

Remember, we want to hear from you and welcome any questions or comments you may have. Whether by phone, email, fax or snail-mail, we value your opinions, and hope you'll get in touch.

### Shaun Cotnam

Manager, AECL Site and Community Affairs  
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