

# Chalk River National Laboratory A New Concept

*Chalk River Employees Ad hoc TaskforcE  
for a national laboratory  
(CREATE)*

*Deep River Town Council: 2010 April 21*

[www.futurecrl.ca](http://www.futurecrl.ca)

# Formation of CREATE

- Prime Minister Harper's letter to M.P. Cheryl Gallant (2009 March 9)
  - “I share your concern regarding the current situation at Chalk River and agree that the situation must be resolved as quickly as possible. I would strongly encourage you to continue to dialogue with the Minister of Finance and the other relevant Ministers...”*
- Preliminary meeting of CRL employees July 21, organized by CRTT and local M.P. Gallant.
- Volunteers formed a non-partisan grassroots ad hoc committee (CREATE) to draft the following Concept for a potential future:
  - ◆ Chalk River National Laboratory
- CREATE's vision was supported by an overwhelming majority of people attending CREATE's consultation meetings in September.

# Historical Context

- Chalk River established in 1944 by the National Research Council (NRC) to help Canada participate in the new world of nuclear science, energy and industry.
- AECL created in 1952; ingenious and unique CANDU reactor developed, as well as a \$6B/yr Canadian nuclear industry with 30,000 employees, and 150 companies.
- Wide range of nuclear sciences and tech. explored - Chalk River was a centre of discovery / innovation. (~1952-1985)
- AECL's focus was then sharpened on the CANDU technology, with reduced R&D diversity. (~1985-present)
- Goal of proposed restructuring of AECL is to enable Canadian nuclear industry to compete more effectively in domestic and international markets.



*NRC's Laurence, Mackenzie (President) and Cockcroft facing federal Min CD Howe*



*Pickering NGS 3*

# AECL is being restructured

- Natural Resources Canada (NRCan) announced its intention to restructure AECL, splitting the Commercial business from the research operations (May 2009).
- Request for proposals from potential investors in “CANDU Inc.” (December 2009).
- Budget bill in Parliament requests legislative authority to proceed (March 2010).
- AECL is now acting as two sister divisions, “Commercial Operations” and “Nuclear Laboratories,” as of April 1, 2010.

## NRCan statements affecting CRL:

- “We would like to have the ability for CRL to take on more outside contracts and I have heard from industry that they would like to do research at CRL but unfortunately [CRL is] too tied up with doing work for AECL.”<sup>1</sup>
- “[CRL] provides certain scientific research and development support for reactor development. Post-restructuring, this support will continue on the basis of a service agreement on commercial terms between CANDU Inc and [CRL].”<sup>2</sup>

*Our vision for the future is consistent with the government's statements on restructuring*

<sup>1</sup> Lisa Raitt, Min. NRCan, Speech to the Economic Club of Canada, Sept. 11, 2009

<sup>2</sup> NRCan. CANDU Inc. Investment Summary. December 2009. p9. Similar statements are made for CANDU services on pp.10-11.

## CRNL Concept – What we will be

Chalk River National Laboratory (CRNL) will be Canada's premier laboratory for nuclear and related sciences.

CRNL will be a resource for researchers from across a broad spectrum from fundamental sciences to industrial applications (not just one single technology).

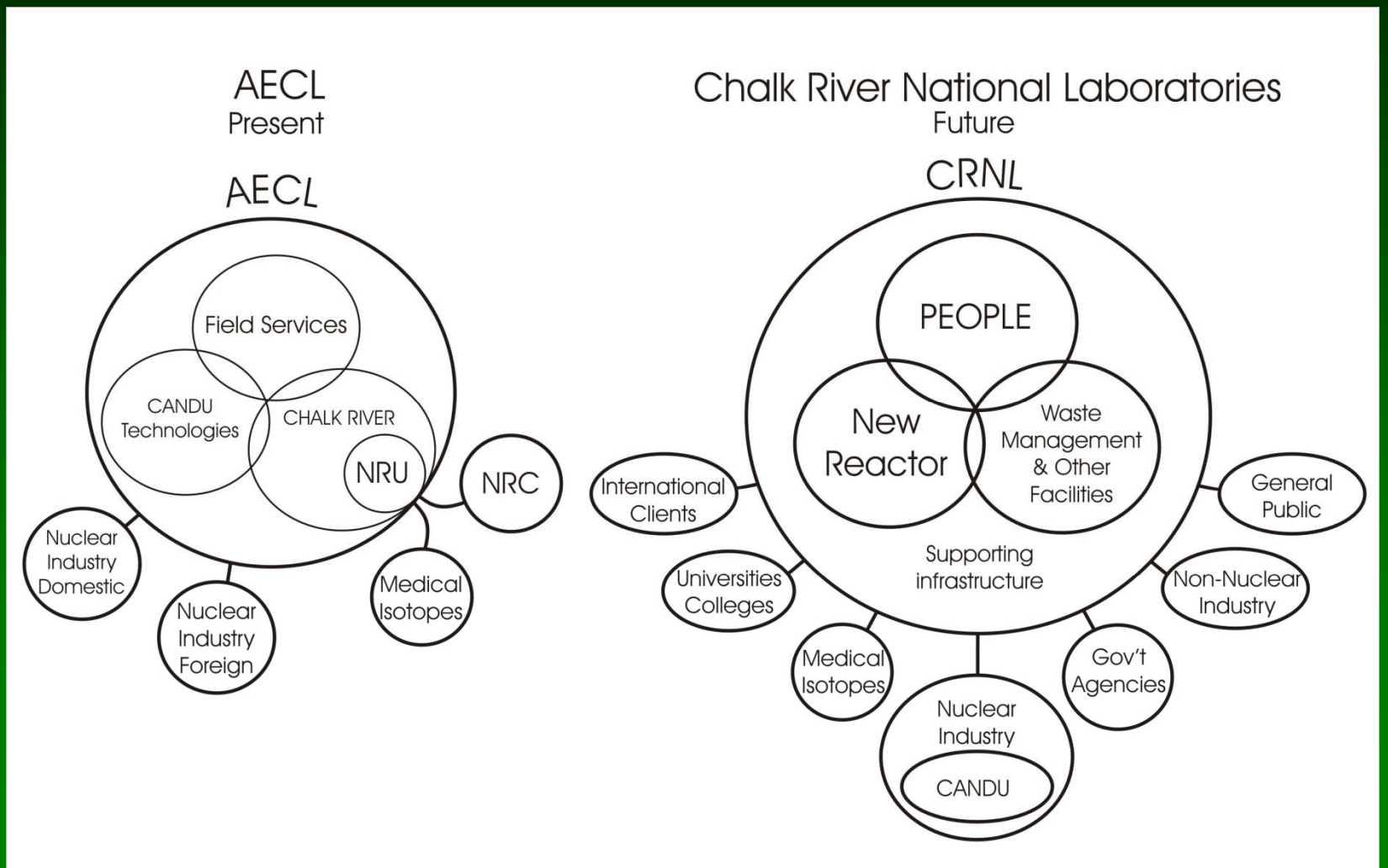
# CRNL Concept – What we will do

The mission of CRNL will be to lead the field of nuclear and related sciences to produce maximum benefit for Canada:

- **Providing national infrastructure for science and industry**, including a multi-purpose reactor for research and isotope production.
- **Leading high-priority research** in materials science, energy, health, environment and other sciences, while innovating in key areas such as safety, nuclear safeguards, medical isotopes and waste management.
- **Partnering with Canadian and international scientists** from various industries, other government agencies, and universities who need access to our unique tools and expertise.
- **Transferring knowledge**, commercializing research and training highly qualified personnel to support Canada's strategic needs.
- **Fostering a science culture** through public education and outreach.

# CRNL Concept

## Distinctions between the Present and the Concept





# How Big are We Thinking?

Sustainable operation of CRNL with ~ 900 frontline R&D staff (sci/eng/tech), plus full range of support staff.

Total employment ~ 2700 (baseline) with growth potential.

Budget\*: ~ \$600M / year  
Salaries, services, maintenance, upgrades,  
Operations and capital renewal.

Funding\*: ~ 60% Baseline support (federal)  
~ 40% Partners and clients

*\*Estimates based on analogy with laboratories of similar profile / mission.  
A more rigorous financial analysis will be required.*

# National Research Universal (NRU)

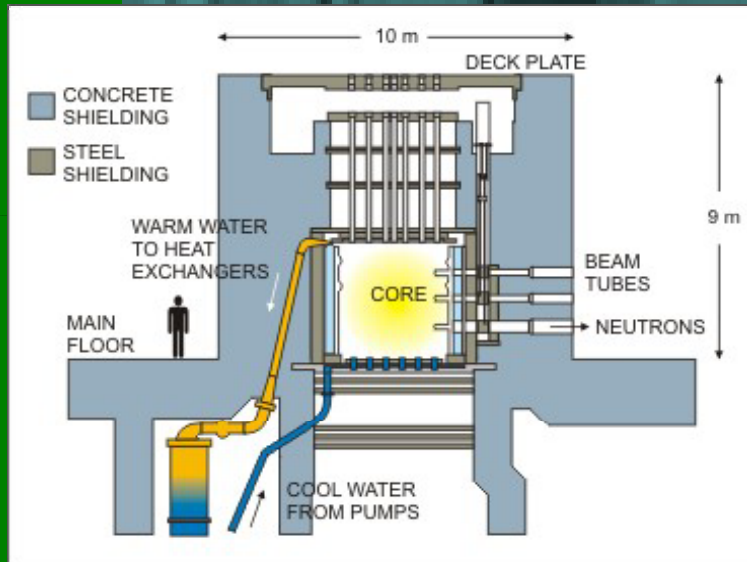
Canada's current *Multi-purpose* Research Reactor



- \$57 M capital cost in 1950.
- Operating since 1957.
- Shut down May, 2009 to repair aluminum calandria.

# The NRU was Built with Vision

*To benefit Canada in many ways simultaneously:*

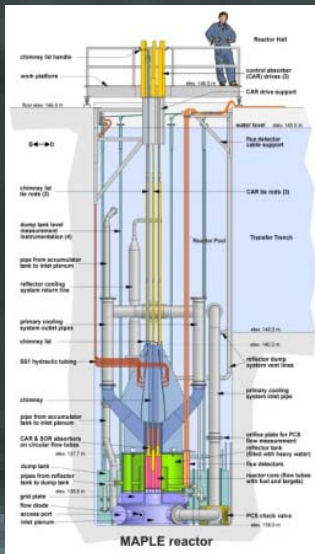


NRU: A large,  
powerful multi-  
purpose reactor

1. Test materials and components for Canada's nuclear industry: 30,000 jobs, 150 companies, \$6B/year impact.
2. Improve materials for other industry sectors: energy, security, aerospace, automotive, medical devices, computers...
3. Attract, train and retain highly qualified Canadian scientists, engineers, technicians and technologists.
4. Produce isotopes for medical imaging (including Moly-99 "business").
5. Produce Cobalt-60 for ~16 million cancer treatments around the world each year.

# MAPLEs Cannot Replace NRU

*... specially designed to produce mainly Mo-99*



1. Not for support of Canada's nuclear industry
2. Not for R&D on materials for other industries
3. Minimal impact on attracting, training and retaining highly qualified Canadians
4. Not for production of Cobalt-60 for ~16 million cancer treatments globally each year.

MAPLE:

A small, special-purpose reactor  
<1 m<sup>3</sup>, ~30 x smaller than NRU

# CREATE's Recommendations

- Proceed with the restructuring of AECL to optimize the independent missions of “CANDU Inc.” and CRL for the benefit of all Canadians.
- Announce the adoption of the CRNL concept for CRL's future mandate and mission. Simultaneously, initiate:
  - ◆ detailed planning of CRNL's future governance and business model
  - ◆ detailed planning of a new multi-purpose reactor that can take over and expand the functions of the NRU reactor over the long term.
- Identify a federal agency with broad science and industry experience to lead the above activities.

# CREATE Activities

- Submitted report to NRCan (October 2009)
- Launch online petition (February 2010) – over 1500 supporters so far, with many (>50%) from outside the local area.
- Copies of CREATE report distributed to government:
  - ◆ All MP's in Canada and all MPP's in Ontario.
- Testified at House of Commons Standing Committee on Natural Resources (March 2010)
- Press release in response to policy announcement on medical isotopes (April 2010)

# How You Can Help

- Visit [www.futurecrl.ca](http://www.futurecrl.ca)
  - ◆ Read the CREATE report.
  - ◆ Sign the on-line petition.
  - ◆ Provide feedback and suggestions.
- Write supporting letters to Prime Minister, Premier, and Federal and Provincial cabinet ministers.
- Spread the word.
  - ◆ Friends, colleagues, associates, contacts.
- Consider Draft Council Resolution
  - ◆ To send to Prime Minister.
  - ◆ Ask John Hilborn for copies.