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

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

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."[1]

- "[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]."[2]

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

[1] Lisa Raitt, Min. NRCan, Speech to the Economic Club of Canada, Sept. 11, 2009
[2] 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).

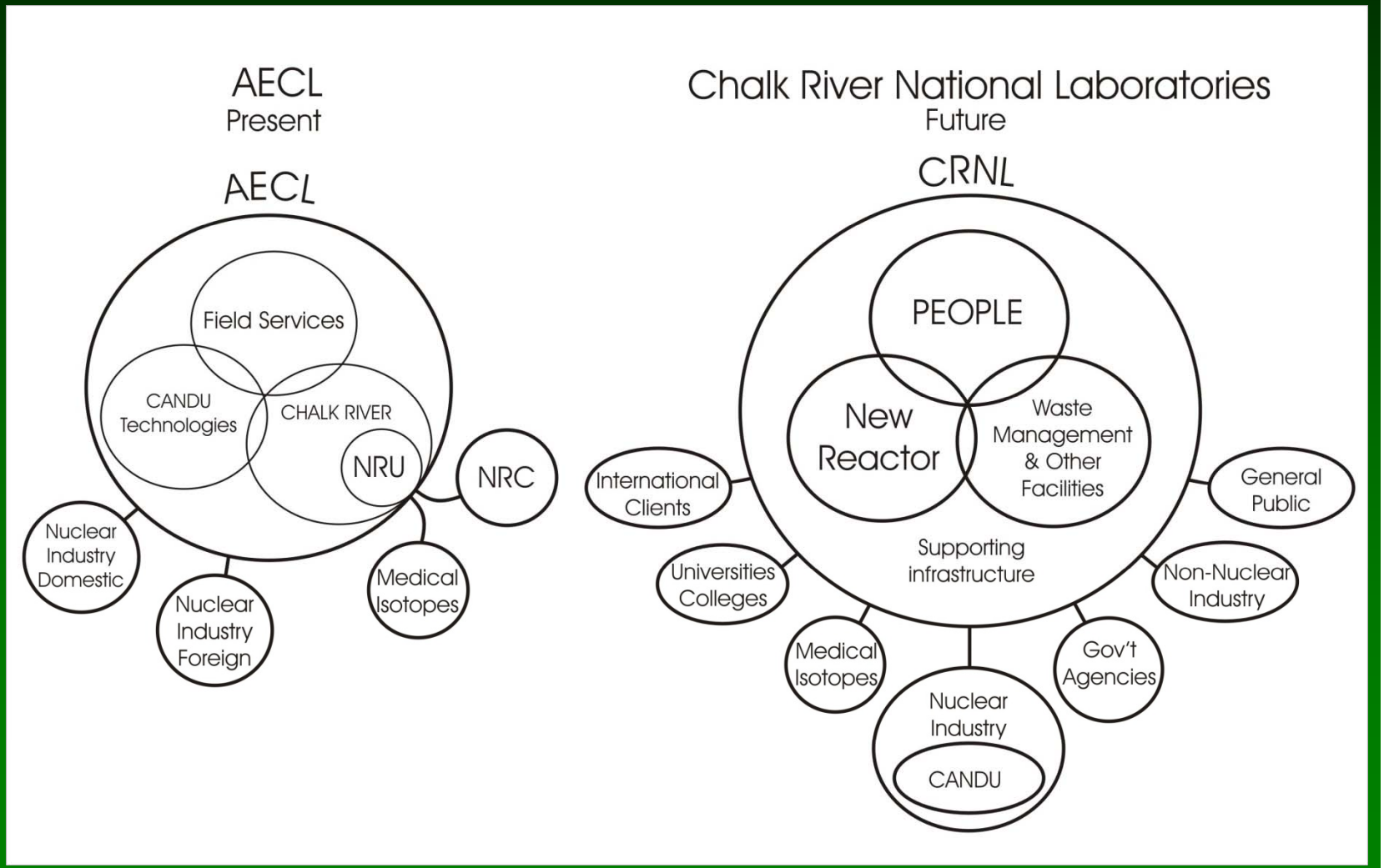
CRNL Concept – What we will do

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.*

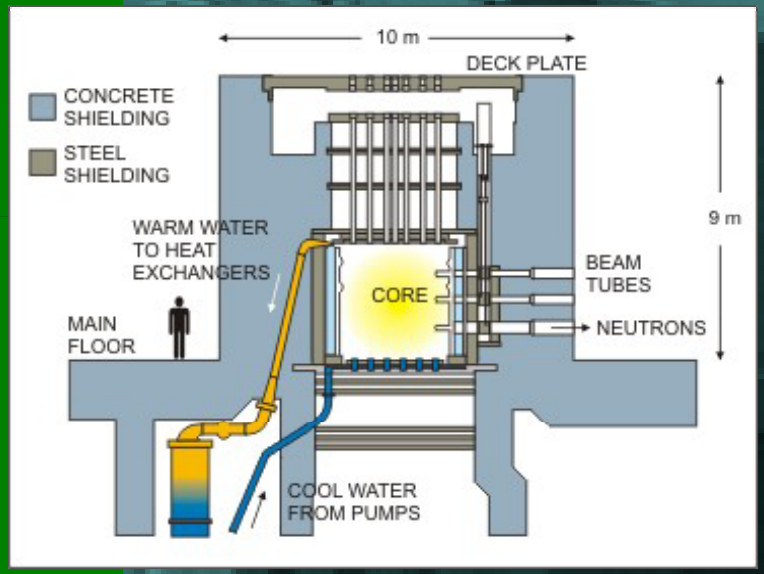
National Research Universal (NRU)

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:

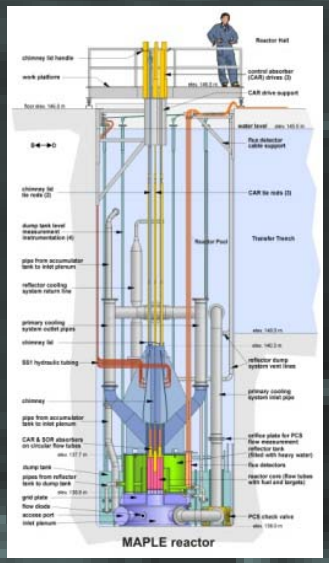


NRU: A large, powerful <u>multi-purpose</u> reactor

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^3, ~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
  - 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.