

Canadian Participation at the Spallation Neutron Source

Bruce D. Gaulin

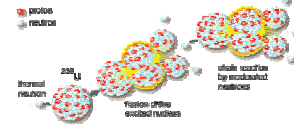


Canadian Institute for Neutron Scattering
Institut canadien de la diffusion des neutrons



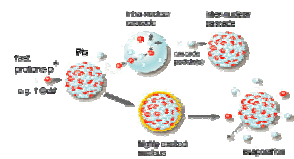
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How do we produce neutrons



Fission

- chain reaction
- continuous flow
- 1 neutron/fission

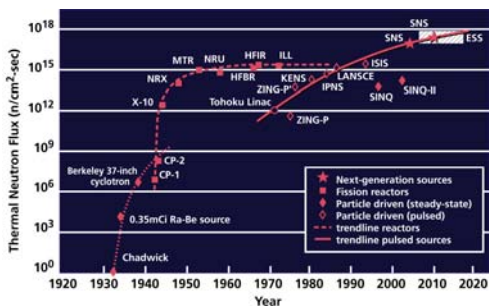


Spallation

- no chain reaction
- pulsed operation
- 30 neutrons/proton

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Development of Neutron Science Facilities



(Updated from Neutron Scattering, K. Skold and D. L. Price: eds., Academic Press, 1986)

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Canadian Participation at the Spallation Neutron Source:

- The SNS will be the world's leading facility for neutron scattering.
- At 1.4 MW it will have figures of merit ~ 10 x ISIS, the current world leading spallation source and peak thermal fluxes ~ 50 – 100 x ILL.
- “Canadian Participation at the SNS” will provide ALL Canadian scientists exceptional access to a range of state-of-the-art neutron instrumentation.
- “Canadian Participation at the SNS” will beautifully complement our national facility now at NPMR, Chalk River and soon (I hope!) at the CNF - will also complement new scattering facilities at CLS.

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Where it all began:

International Access Fund			
Decision Date: June 18, 2002			
Project Number	Project Leader	Project Title	CFI Maximum Contribution
	McMaster University		
Projects approved			
7013	Gavin, Bruce	Canadian Participation at the Spallation Neutron Source	\$13,000,000

Attn: Bruce Gavin
Room 406.
Bruce, Congratulations!
This is great news!
Kevin Gouli

Conrad Foundation for Innovation Page 1

Project started (funding released): Oct 23 2003

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Canadian Participation at the Spallation Neutron Source:

- CFI International Access Fund Award: \$15M

\$14M to design and construct VULCAN
\$ 1M for outreach, management and IDT activities

- 10%-10%-10% plan

Trade VULCAN contribution for

½ VULCAN IDT (10% of all beamtime)
½ SEQUOIA IDT (10% of all beamtime)

Another 10% share distributed over full SNS suite of instruments

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Canadian Participation at the Spallation Neutron Source:

Beamtime Allocation:

- 20% IDT discretionary
- 5% Beamline scientist discretionary
- 75% Open peer-reviewed competition

Most of the beamtime is in the open competition!

Join IDTs now to build capacity for the community.

Join IDTs now to become expert in the instrumentation and thereby compete successfully in the open competition.

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Instrument Development Teams

SEQUOIA: 1st IDT meeting is Oct. 4 and 5 at SNS

VULCAN: 3rd IDT meeting is Nov. 11 and 12 at SNS

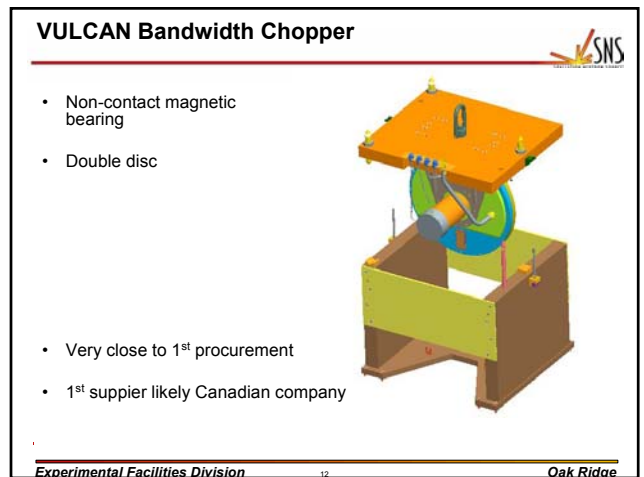
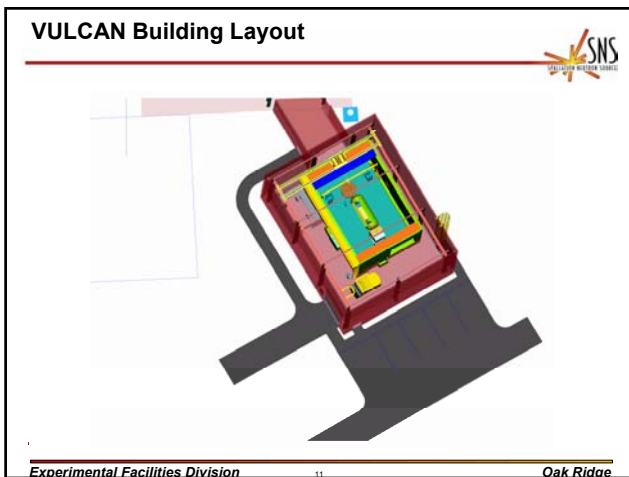
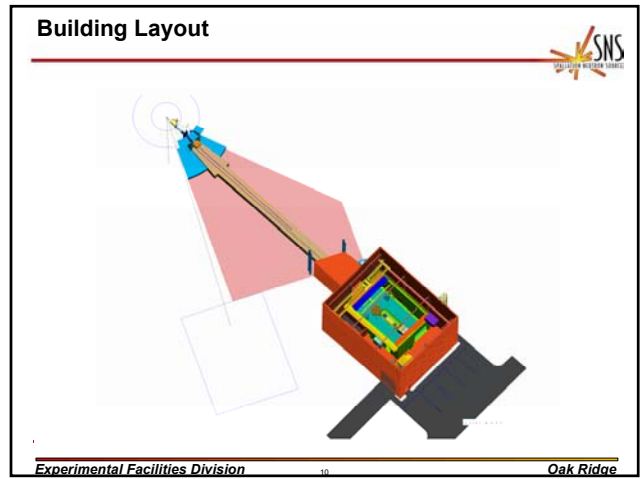
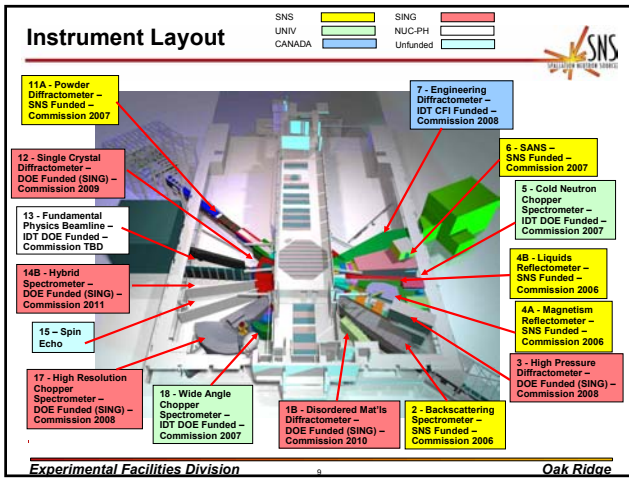
HYSPEC: 1st IDT meeting was Sept. 9 and 10 at SNS

These meetings are useful and important!

2nd VULCAN IDT meeting resulted in instrument being moved from beamline 9 to beamline 7 – secondary instrument moved outside of target building to own dedicated building.

Please attend if you are interested!

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CanPar@SNS Outreach:

\$20K/year to alert Canadian community to new opportunities

- Project Launch Symposium – McMaster U. Oct 2003
- ACNS – June 2004
- Symposium/CINS meeting – St. Francis Xavier U - Sept. 2004
- VULCAN tour of Nova Scotia/Newfoundland – Sept. 2004
(Holden, Daymond, Gharghour)

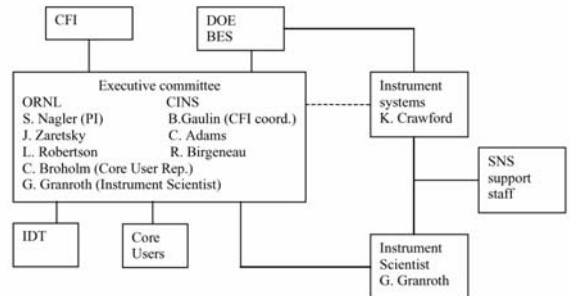
• Project Symposium – UBC/TRIUMF – June 2005

• Sponsorship of CINS AGM speaker(s) – Ontario/Quebec (?)
Fall 2005

• Tour of Alberta/Saskatchewan/Manitoba – Fall 2005

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IDT Organization



SEQUOIA IDT

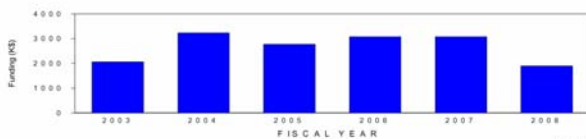
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ORNL / CINS

Budget FY 2003 – FY 2008



Hardware and Materials •spectrometer components, shielding, furnishings, etc.	\$11,214 K
Labor •Instrument scientist, design, engineering, installation	\$ 3,775 K
Miscellaneous •Travel, related science program	\$ 1,130 K
6 YEAR TOTAL	\$16,119 K



SEQUOIA IDT

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