

Monitoring the Brightest Light in Canada



Jerri Parkinson



Canadian
Light
Source Centre canadien
de rayonnement
synchrotron



June 5-7
Saskatoon 2017

THE BRIGHTEST LIGHT IN CANADA | lightsource.ca

About Me



The Canadian Light Source



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Types of Radiation at the Light Source

Gamma/X-Ray

- Residual radioactive material and radioactive sources
- Prompt radiation from machines such as Klystrons & RF cavities
- Bremsstrahlung (braking radiation) from accelerated electrons
- Synchrotron radiation from beamline operation

Neutron

- Outside the accelerator enclosures when beam is on
 - At high energies, neutrons transfer energy by collision with light atoms.
 - At lower energies, neutrons can be absorbed and the absorbing material may become radioactive.

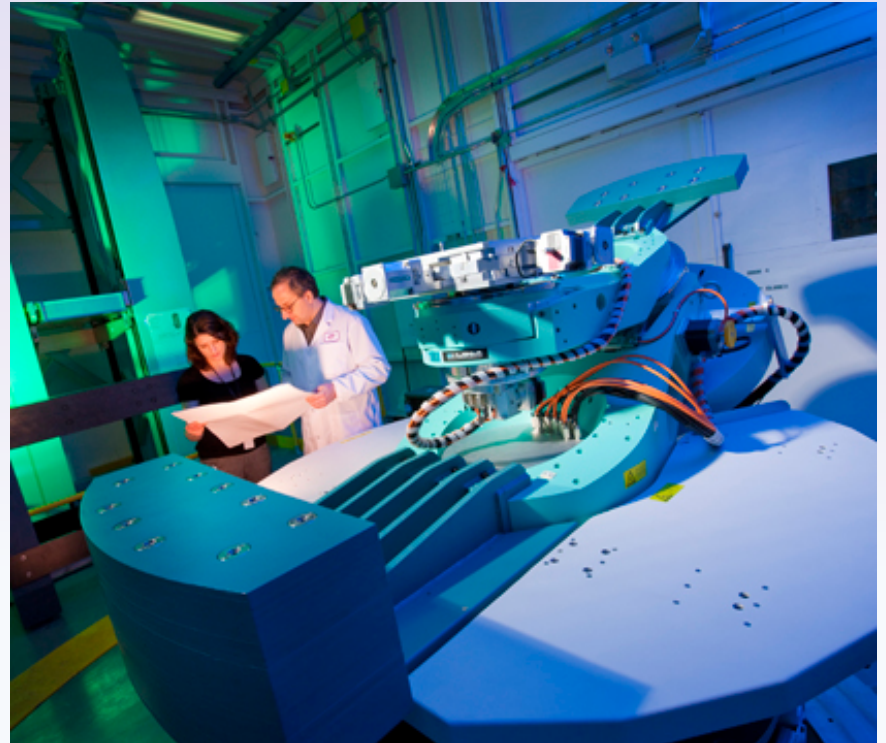
Beta

- Contamination & Activated Material
- Residual removable material



Monitoring Methods

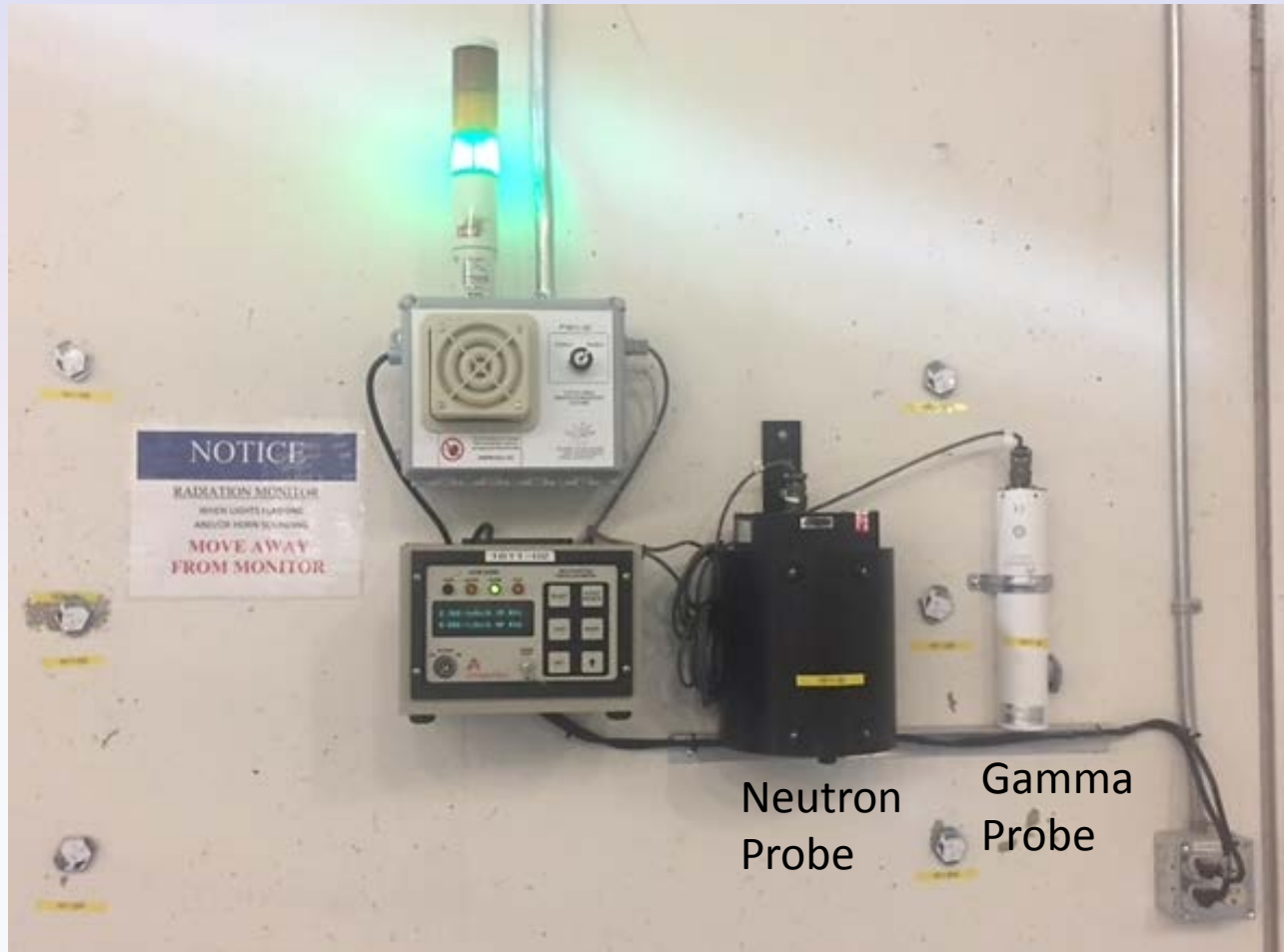
- DOSIMETERS
- AARMS
- SOURCES
- RADIOACTIVE SAMPLES
- SURVEY METERS



Dosimeters



Active Area Radiation Monitors



Neutron
Probe

Gamma
Probe



Sources for Function Testing



Fe-55



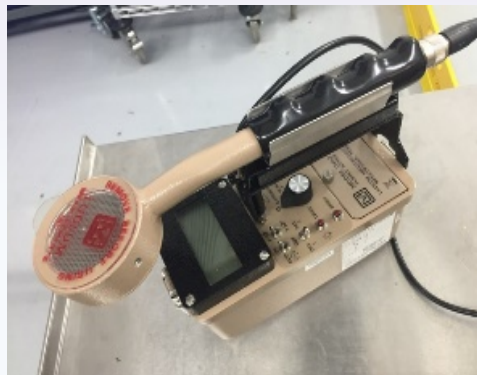
Cs-137



Am-241



2241-44-172 Probe
- Low Energy X-Rays



2241-44-9 Probe
- Alpha, Beta & Gamma



3030
- Alpha & Beta



Radioactive Samples



2360 – 43-1-1 Probe
-Detects alpha and Beta



Meters for Surveying



FH40F5
Detects Gamma & X-Ray

For use with Accelerator
Stored Beam Survey



490 IP
Detects Beta and Gamma

For use when exiting
Industrial Science Lab



FHT762
Detects Neutrons

For use with
Accelerator or
Medical Isotope
Facility Prompt
Surveys



9DP
Detects
gamma &
X-Ray

For use with
Injected Beam
Surveys



ALARA

- TIME
- DISTANCE
- SHIELDING



Thanks!



Questions?

Reflecting on the future



Réflexion sur l'avenir

A large yellow poster with a grey radiation symbol at the top. Below it, the text "KEEP CALM AND BEAM ON" is written in large, bold, grey, sans-serif capital letters, arranged in five lines: "KEEP", "CALM", "AND", "BEAM", "ON".



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