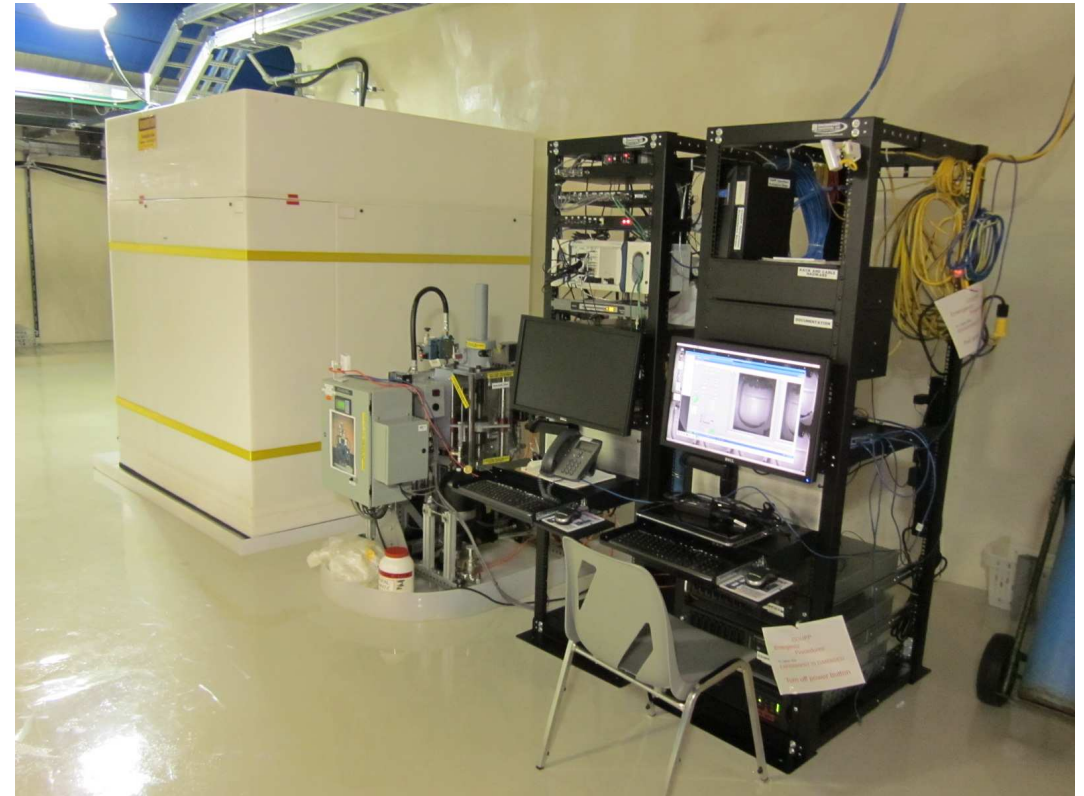


## *COUPP<sub>4</sub> Lessons Learned*



Eric Vázquez Jáuregui

SNOLAB

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SNOLAB, Lively ON, Canada; May 18, 2012

# Outline

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- **COUPP GLIMOS**
- **COUPP4 operations**
- **COUPP4 upgrades**
- **SNOLAB safety**
- **Conclusions**

# COUPP GLIMOS

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## Interface between COUPP and SNOLAB in all matters of safety

- Ensure experiment team members working at SNOLAB have training and experience
- Ensure experiment team members have adequate and competent supervision when required
- Ensure the specified experiment procedures correctly reflect the safety protocols at SNOLAB
- Ensure emergency shut-down procedures are developed and displayed

# COUPP GLIMOS

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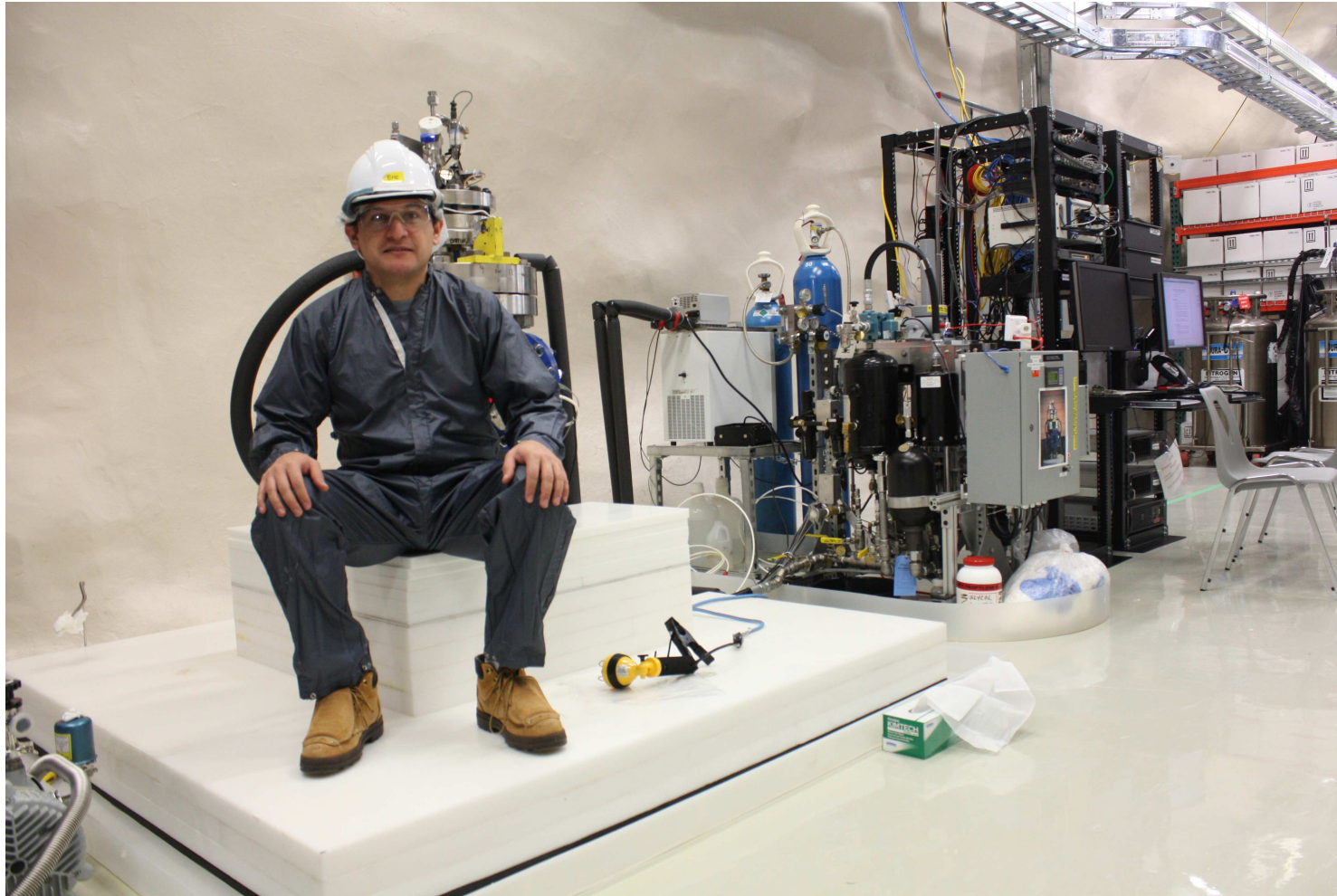
## Interface between COUPP and SNOLAB in all matters of safety

- Works with the specified experiment members to ensure all health and safety requirements for operations are met
- Authorised, on behalf of the SNOLAB Director, to halt or veto experiment operations, should health and safety likely be compromised
- Authorised, on behalf of the SNOLAB Director, to exclude experiment team members, should health and safety likely be compromised

# COUPP GLIMOS

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Interface between COUPP and SNOLAB in all matters of safety

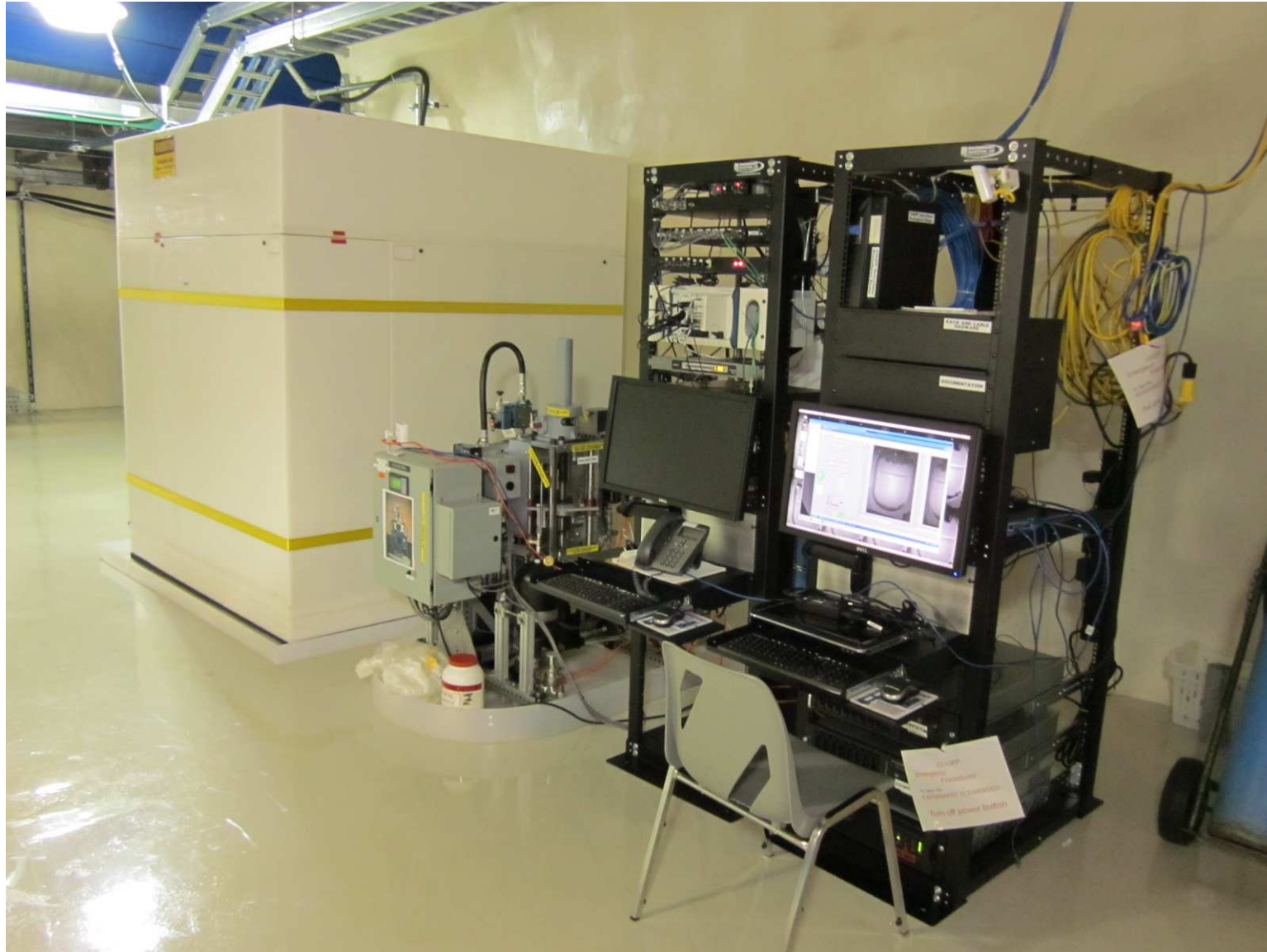


**COUPP GLIMOS**

## Interface between COUPP and SNOLAB on logistical and operational matters

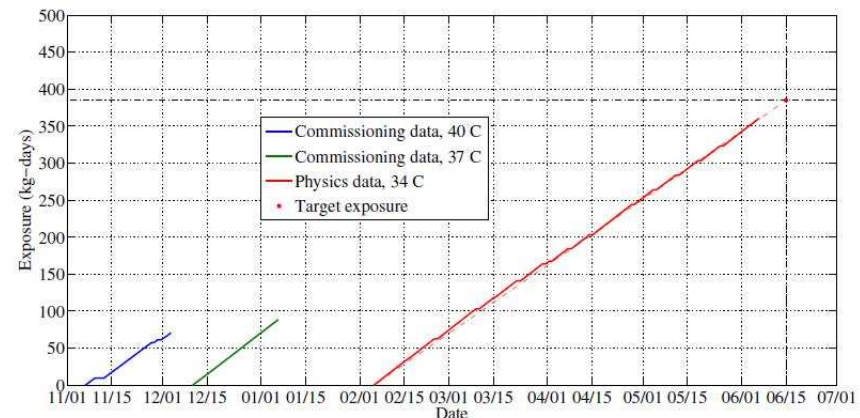
- Deployment
- Installation and commissioning
- Operations
- Communication of staffing plan for experiments to SNO-LAB management and operational teams

# COUPP-4kg



# COUPP-4kg at SNOLAB

- Installation in summer 2010 (Safety: Dan Trepanier)
- Physics run begins Nov. 3, 2010
- Run settings (P=30.5 psia):
  - 17.4 days at 8 keV
  - 21.9 days at 10 keV
  - 97.3 days at 15 keV
- Calibrations:
  - 12 neutron calibration runs: AmBe and  $^{252}\text{Cf}$
  - Gamma:  $^{60}\text{Co}$  and  $^{133}\text{Ba}$

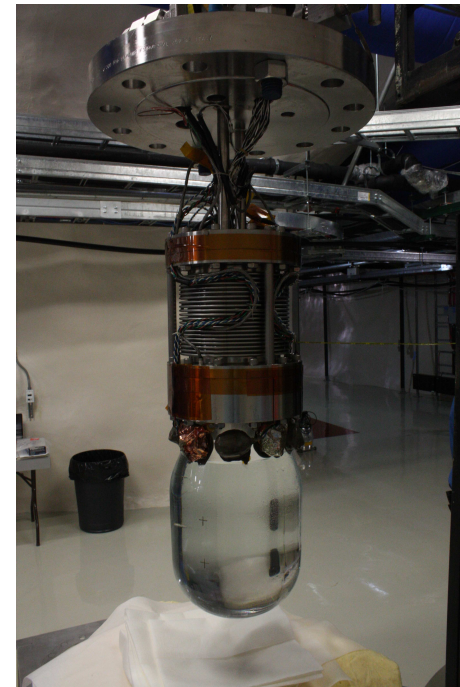
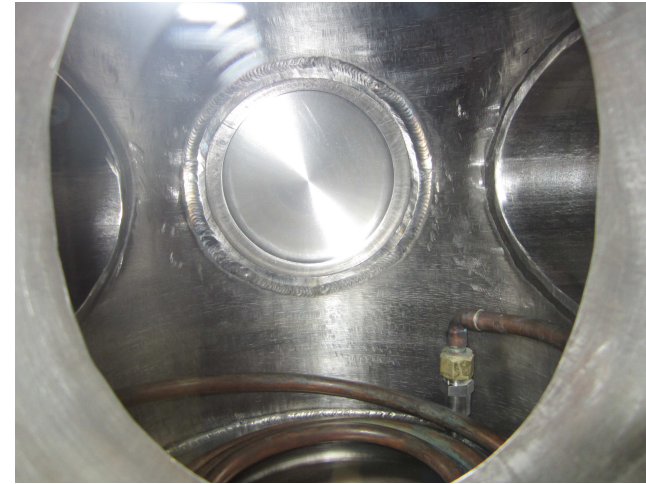




# COUPP-4kg at SNOLAB

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- Upgrades fall 2011/spring 2012:
  - Inner vessel removed
  - Water tanks on/off
  - New components installed
  - Detector almost ready
- Gamma spectrum measurement



## Operations:

- Training and becoming familiar with the detector
- Smooth and Steady
- Calibrations performed with AmBe and  $^{252}\text{Cf}$
- No issues while swapping nitrogen tank
- Keeping an eye on glycol leaks
- Running with gamma sources

Operations were successful on all safety issues

## Glycol spills:

- Know procedures
- Water, water and water
- Inspecting and cleaning constantly

## Impact on SNOLAB operations:

- Leading activities at site
- Coordinating with operational groups
- Excellent interaction with groups

**Being at SNOLAB is the key!**

## Calibration sources:

- First experiment to take calibration sources UG (SNOLAB era)
- New protocols with SNOLAB and Vale
- A learning experience

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- First experiment to take calibration sources UG (SNOLAB era)
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**To SNOLAB experiments: you're welcome!**

# SNOLAB safety overview

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**SNOLAB procedures align with VALE/Creighton policies and Ontario Health and Safety Act (OHSA)**

- NORCAT General Orientation
- NORCAT Underground Orientation
- WHMIS
- Zero Energy State (ZES)
- VALE Site Specific for Underground and Surface
- NORCAT ADIT Onaping Site

**SNOLABP-02-01-03**

# SNOLAB safety overview

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- Travelling in the Mine Drift
- Cellular Phones, Wireless Devices, Laptops, Headphones
- PPE, Transportation and Traffic, Tag Board
- Hours of Work
- Injury, Incident and Unusual Occurrence Reports
- WHMIS & MSDS Procedures
- Use of Radioactive Sources

<https://www.snolab.ca/users/library/documents/SITE-PROC.html>

moving to

<https://www.snolab.ca/docushare/dsweb/HomePage>



# Conclusions

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- First run at SNOLAB completed for COUPP-4kg
  - Successfull operations without safety issues
  - Plans and procedures in place
  
- COUPP-60kg getting to SNOLAB
  - COUPP-4kg has been a learning experience (Safety)
  - There will be at least 15 times more issues
  - **Ready to deal with them!**