

Charge to the COUPP 60kg Installation Review

May 2012

The COUPP 60kg bubble chamber completed a second run in the MINOS underground area in the fall of 2011. The collaboration has since executed a series of improvements to COUPP 60 kg including a new pressure vessel, improved lighting, new camera and DAQ with the aim of deployment at SNOLAB in the summer of 2012. The experiment has also made a new assessment of materials looking for possible sources of internal background.

The purpose of this review is to evaluate the technical preparedness for deployment in SNOLAB. This plan should be evaluated within the context of the overall COUPP experimental program. On May 18 the SNOLAB management will hold a separate safety review of the COUPP 60 kg bubble chamber.

Technical preparedness:

1. Have the issues of fluid darkening and surface bubble rate encountered in the first MINOS run been sufficiently mitigated to allow for a successful campaign at SNOLAB?
2. Do the improvements mentioned above address problems found in the two MINOS runs? Are these improvements on track for summer deployment at SNOLAB?
3. Has the experiment addressed known internal background sources? Is there a sufficient inventory of materials and associated testing to give confidence that these backgrounds are unlikely to significantly limit the experimental sensitivity?
4. Is the system robust enough for extended operation in a remote location?

Resource requirements:

1. Does the proposed plan cover all of the steps likely to be required for this deployment?
2. How does the COUPP 60 kg deployment plan mesh with plans for operating COUPP 4 kg? Is there sufficient scientist manpower available to do both?
3. Have the needed technical resources been identified, and are they likely to be available on the timescale needed for deployment?
4. Are the resource estimates consistent with past experience deployment at MINOS and 4kg chamber at SNOLab?
5. Is there a sufficient plan for personnel and equipment safety during installation at SNOLab? Are the lines of responsibility clear?