

InterCAT Technical Working Group Meeting

July 20, 2000

Agenda Review and TWG Activity Summary: (Steve Heald)

Steve called the meeting to order and reviewed the agenda.

Facility Reports

Facility Update/News: (Bob Ferry and Steve Davey)

Bob reported that the current time and materials contract will expire July 31, 2000. The new contract won't be ready for a new bid at that time, and the APS anticipates being short a contractor until approximately October. Any users who have upcoming work that will require contractor assistance during that period should write up their plans now; the current contractor will be obligated to finish up the work. Alternate sources for labor are also available at ANL; contact Bob Ferry with any questions.

Steve noted that Oxford has finally submitted a proposal for cryo cooler service at the APS. Anyone interested in seeing the proposal, contact Steve.

New front end design: (Deming Shu)

The APS is currently procuring new-design front ends for the new CATs. The apertures are much smaller and the photon shutter has a completely different design (it has a vacuum chamber and works more like a moveable fixed mask). The cost of the new photon shutters has decreased while their efficiency has increased. Deming reviewed the 32-ID front end components and described their parameters, comparing and contrasting the old and new designs. Two options are available: configuration A (differential pump) and configuration B (single 500 μm Be window). Deming showed photographs of the new photon shutter design and described how the design changes were geared to improve reliability and performance. The vacuum test done on the 32-ID front end showed good results.

Canted dual undulators: (Steve Davey)

Lately, there has been interest in the possibility of developing a beamline design having two undulators with a slight angular offset. A committee was put together to evaluate the feasibility of this (Steve reviewed the membership). The group looked at both large (13 mrad) and small (300 μrad) angle offsets and how each scenario would impact operation. Steve showed schematic layouts of the two scenarios and briefly talked about the ramifications of each. The committee evaluated the consequences with respect to a variety of parameters, including XBPM safety impacts, possible impacts on top-up operation, etc.

Steve reviewed the findings, limitations, and constraints for both the small-angle and large-angle cases and tried to clarify the scope of the changes that would be necessary to implement these modifications. Technically, both cases can be accomplished. The design of the small-angle case is well in hand and more feasible than the large-angle case. Next, the actual beamline design and concept needs to be studied. There was much discussion about this subject.

CAT Reports

Commissioning of 4-ID: (Jonathan Lang)

Sector 4 has two canted undulators; a circularly polarizing undulator (CPU) with a small vacuum gap chamber and a new design APS undulator A. Jonathan showed a schematic layout of the sector and reviewed the programs of interest for each branch in the sector.

Jonathan described the mirror set up (4-ID-C), the FOE, and the individual beamline optics for the soft x-ray and hard x-ray lines (not all of which are installed yet). The beam profile from the B station shows that approximately 75% of the calculated theoretical flux level is being achieved using a diamond (111) monochromator. He showed many photographs of various experiments and work stations and reviewed the components currently being installed (much installation work is planned for the October shutdown). Sector 4 is working with the new PSS panels (touch screen style).

Next Meeting

The meeting will be held Thursday, August 17, 2000, in conference room A1100.