InterCAT Technical Working Group Meeting
January 20, 2000

Agenda Review and TWG Activity Summary: (Steve Heald)
Steve opened the meeting, reviewed the meeting agenda, and asked for volunteers to contact him about providing a CAT report at upcoming meetings.

Facility Reports

Facility Update/News: (Steve Davey and Mohan Ramanathan)
Mohan gave a brief review of two ratchet wall failures in sector 3 (i.e., lead shot leaks). The APS is investigating to understand what is happening. Mohan showed diagrams of wall construction and indicated that these problems are only being seen in ID front ends. To address the problem, the walls have been redesigned and now use stacked lead sheets. Beam pipe mounting is then fully independent of the walls. No clear explanation has been found for why pipe contact with the lead could cause these problems. If problems arise elsewhere around the ring, the new wall design will be implemented to repair. The new design allows for collimator re-alignment without moving any lead. The impact to the beamline when the new design is implemented includes removal of the commissioning window and removal of the pump.

Vacuum leaks have been noticed in most ID front end exit valves made of a special Viton material. Modifications (e.g., switching to different Viton material) have been performed by the manufacturer. Retrofits will be installed around the ring during maintenance periods.

Direct interface to the ID control system is now available eliminating the need to rely on the PV gateway. This is proving to be very reliable.

The cryo pump maintenance contract has been renewed. The APS has also purchased a second spare Oxford cryo pump. The engineer who has done maintenance in the past is retiring, and a new engineer will now have to be brought up to speed.

PSS problems have been cropping up as a result of problems with the actuators in monochromator shutters. The seals appear to be deforming enough to let air blow by resulting in the failure of the shutter. Some spares are available for the standard APS design (no spares available for non-standard setups). A maintenance program is being established to address the problem.

Recent floor elevation measurements from the APS Survey Group: (Joe Error)
Joe presented a slide show summarizing years (1993–1999) of statistical data gathered on the stability of the experiment hall floor. Joe told the group that the APS is probably one of the most stable buildings of its size in the world. The ring contains more than 400 monuments that are used to measure floor stability. The 3-D slide show tour showed the extremely slight changes (on the order of +/- 1 mm) in elevation measured around the ring. Joe told the group that soils removed and replaced during the construction do not compact in the same way that undisturbed soils do. He noted that no correlation has been found between changes in elevation and variables such as hutch position, wetland area position, and tunnel location.

TWG Beam Stability Subgroup report: (Paul Zschack)
Paul updated the group on recent topics discussed in the subgroup, including position measurement (bpms), orbit control (global and real-time feedback), and the pros and cons of xbpms. A handout describing beam stability performance was distributed. As an action item, the subgroup's commentary on beam stability performance and planning goals will be provided to the Research Directorate and the APS AOD.

CAT Reports

Mu-CAT technical update: (Doug Robinson)
Doug reviewed Mu-CAT's current affiliated institutions and members. Since the last overview, Mu-CAT has added Forschungszentrum Juelich (Germany) as an affiliate.

The research focus of the CAT is materials science with an emphasis on magnetic scattering and surface scattering. Doug reviewed the list of staff currently involved in building the beamline and the design constraints of the beamline. He also described the components in the FOE and gave a list of instrumentation conventional to materials science research.

Currently the CAT has only an ID; funds are being sought to develop the BM line.

Next Meeting

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