InterCAT Technical Working Group Meeting
March 15, 2001

Agenda Review and TWG Activity Summary: (Mark Beno)
Mark called the meeting to order and reviewed the agenda.

APS Update (Steve Davey, APS)
Steve noted that the new operations schedule (through September 2001) is now posted on the Web. Lattice movements (for the Decker distortion) will be made for sectors 6, 7, and 8 will be done this shutdown (along with the front end for sector 22). Front ends for sectors 16 and 31 in July and October, respectively. Occupancy has been achieved in 431Z, the new radioactive materials handling area. No changes have been made at this time to any shipping protocols.

APS Reports

X-ray beam position monitor feedback and feedforward status and plans: (Glenn Decker, APS)
(See overheads available on TWG Web site at http://www.aps.anl.gov/cats/twg/twg-mar01-minutes.htm.)

Recent design upgrades of the APS beamline standard components: (Deming Shu, APS)
(See overheads available on TWG Web site at http://www.aps.anl.gov/cats/twg/twg-mar01-minutes.htm.)

CAT Reports

Redesign of MHATT-CAT's Si monochromator first crystal mount: (Eric Dufresne, MHATT-CAT)
Eric opened his talk by introducing the collaborators on the redesign of the crystal mount, which can measure submicroradian tilts. He showed a schematic of MHATT-CAT's beamline and described how microradian motion at the monochromator can have a large impact. He also showed photographs of the original monochromator design and explained the problem of motion in the liquid nitrogen lines (which resulted from pressure changes in the lines during filling). MHATT-CAT placed tilt meters on the surface of the crystal and observed the effect of these pressure changes.

Eric presented data on crystal tilt vs. pressure in the liquid nitrogen lines, where

$$\Delta\theta / \Delta p = 14.2\ \mu\text{rad/psi}$$

The change in beam motion at 30 m was 176 μm for 0.2 psi pressure fluctuation.

The design effort focused on building a more stable first crystal mount; Eric showed a diagram of the redesigned mount and presented preliminary time series data of flux measurements. Mechanical stability was increased by a factor of 50. Eric noted that the tilt sensors are x-ray sensitive and temperature dependent (but can be calibrated to correct the dependence).

Next Meeting
No TWG meeting will be held in April. The next meeting will be held Thursday, May 17, 2001, in Building 401, room B4100.