InterCAT Technical Working Group Meeting
April 17, 2003

Agenda Review and TWG Activity Summary:
Eric Dufresne called the meeting to order and reviewed the agenda.

APS Updates and Presentations

May shutdown activities (John Noonan, APS/ASD)
John reviewed the main activities scheduled during the upcoming APS shutdown:

- The 'Decker distortion' will be implemented at Sectors 11, 12 and 13. In these sectors the fixed mask in the front end (FE) will be moved as well.
- Several activities are going on in the booster ring; efforts to reduce the noise on the septum magnet will improve injection performance.
- Routine maintenance of the switchgear X1 will affect power in the experimental hall at Sectors 1-3. Bill Wesolowski will contact the affected CATs in advance with the dates this will occur.
- The lead-shot shielding of the wall collimators in sectors 1-ID and 6-ID is going to be replaced by a new design using lead bricks to prevent alignment drift of the collimator assembly.
- On Sector 23-ID the new FE for the canted undulator beamline will be installed in the tunnel. In an effort to upgrade and maintain systems several ion pumps around the ring will be replaced.
- Multiple PSS revalidations are scheduled as well.

Recent experiences with APS safety shutters (Esen Alp, XFD)
Esen summarized the findings of the Critical Components Analysis Committee which was assembled to study the safety shutter incident which occurred last year at Sector 2-BM. After regular maintenance work on the 2-BM mode shutter, the air manifold inlet and outlet were reversed as well as the electrical connections for the shutters. This caused some faulty logic in the Personal Safety System and resulted in a potentially serious hazard. Fortunately, this error was discovered before any X-rays were delivered to the hutch and no personnel was hurt.
The term critical component is defined as a physical barrier preventing a user from being exposed to X-rays (e.g. collimators, masks, shutters, etc.). The function of a mode shutter was demonstrated at the meeting using 'PRO-E 3D' simulations and its operation explained by a training video showing how to switch the shutter from white into monochromatic beam mode using the common key system. Several 'medm' screens (adl-files) were presented providing information on the beamline shutter statistics (ShtrStats.adl). An important measure of the operational readiness of a shutter is the time required for the shutter to open. If this time is much larger than 0.3 s, this may indicate that the shutter need to be serviced.
Esen concluded his presentation with the suggestion to create a critical components czar, i.e. a group of APS employees with the mission to inspect and maintain critical components. Several TWG members questioned the role of such technical group.

Another concern was the issue of who should inspect CAT-built critical components.

Automatic dark count assessment software in EPICS (Pete Jemian and Jon Tischler, UNI-CAT)
Pete described new EPICS software developed at UNI-CAT to measure the dark current of ion chambers while the front shutter is closed or the APS beam is down. This software is a convenient, automatic tool to keep track of dark counts (background signal). See the Minutes section of the TWG web site for details of his presentation.

Cryogenic-cooled monochromators – Update (Wah-Keat Lee, XFD)
Wah-Keat reviewed the efforts at Sector 1 to improve cryogenic indirect-cooling of silicon monochromators. On 1-ID, good system performance was observed for heat-loads up to 150 W. Several examples from work done at the ESRF and SPring-8 where provided indicating that this approach provides and adequate method for power loads of up to about 400 W. This is an ongoing project and more studies are planned at the APS. For more details on this work please see Wah-Keat's presentation at www.aps.anl.gov/cats/twg/minutes.html.

Next TWG meeting:
The next meeting will be held at 10h30 on Thursday May 15, 2003 in Bldg.401, Room A1100.