

**Independent CAT Safety Assessment Process
Group II
Safety Oversight Committee Review of MHATT-CAT Safety Operations
November 13, 2001**

The following representatives from the Group II CAT Safety Oversight Committee and personnel from APS/AOD met to review the safety operations of MHATT-CAT:

Michael Pape, PNC-CAT
Douglas Robinson, Mu-CAT
Paul Zschack, UNI-CAT
Bruce Glagola, APS/AOD
Nena Velampampil, Safety Assessment Secretary, AOD-EFOG

Representing MHATT-CAT Staff was:
Eric Dufresne

The CAT assessment followed the guidelines given in the document "Independent CAT Safety Assessment Process, June 17, 1998." Eric Dufresne presented the MHATT-CAT safety program status and offered additional information regarding overall operations experience.

I. Safety Overview

Safety Organization

- MHATT-CAT Safety Plan was presented to the ISA group. It was resubmitted to the APS on April 4th 2001. The Safety Plan follows TOM-CAT, and the recent changes to the plan were made to change the safety roles and to simplify some of the Lab Safety Inspections. MHATT-CAT has stated they will switch to the new safety plan the next time their plan is up for review.
- There were significant personnel changes since Feb 29, 2000 ICSA. Ernest Williams left in Nov. 2000. Eric Dufresne in Nov. 2000 took over all his safety responsibilities. The Sector Manager, Steve Dierker, accepted the directorship of the NSLS in May 2001. The new Sector Manager is Eric Dufresne.
- Two new researchers joined MHATT-CAT in 2001. Dohn Arms joined in Feb 2001, and took several safety responsibilities, such as Electronics lab Safety Captain and Machine Shop Coordinator. Don Walko just joined in Nov 2001 and will be given some safety responsibilities such as Hoisting and Rigging Coordinator.

Communication

- Safety related communications are primarily conducted through a combination of methods that include weekly group meetings of on-site staff, e-mail and web announcements.
- Safety communications from the APS are posted on the D000 Bulletin Board and are distributed to resident CAT members. All important safety information is sent to users by email and is posted on the web as part of a periodic Newsletter or technical

updates called MHATT-CHAT. The safety plan is available on the web site and an automated server emails reminders to all the Safety Personnel of their upcoming safety inspections.

Training

- The CAT Safety Coordinator coordinates safety training for all incoming users and residents. MHATT-CAT relies entirely on the APS TMS for its electronic safety-training database. Paper copies of sector orientation record are kept in D000.
- The CAT resident user training is all up to date and is fully consistent with the new ANL JHQ.

Operations

- The Laser lab operates under the JAN 2000 SOP, and a laser audit occurred on June 6, 2001.
- A new SOP to load Lithium Compound Refractive Lenses in vacuum vessel was defined in May 2001 and has been used in several experiments since.
- Waste handling involves, at this time, only solvents for cleaning. Eric Dufresne last year was trained as a Waste Generator and Certifier and maintains the safety inspections and maintenance of the SAA located in D030.
- Safety reviews of instruments are performed when new instruments are commissioned.
- Additional shielding was added in September 2001 around a beam pipe downstream of the P4 shutter. Button number 2 in hutches 7ID-B and 7ID-C have been disabled in the PSS system and dome mirrors were added to look behind optical tables placed in the way.

Safety Inspection Records

MHATT-CAT maintains inspection records as follows:

- Safety Inspection of each experiment before and during operation by the Safety Officer.
- Both laboratories have been inspected on a monthly basis. The laser hutch is inspected on a quarterly basis, typically before an experiment. The SAA and machine shop are inspected monthly, the eye shower station weekly. Email notices remind all inspectors. The sector walkthrough is done quarterly.
- The Safety Committee performs quarterly ES&H Sector-wide inspections.

Unique Hazards

- The Nitrogen system no longer vents inside the hutch. Initially the venting 0.5-inch diameter bellow created a loud noise which finally was stopped by changing the bellow to a one-inch ID output pipe. The cryopump now vents on the roof and is noiseless.
- For certain experiments, Li is loaded in a UHV tee placed inside a glove bag filled with dry Nitrogen. Li tarnishes slowly in humid air, and the current SOP works very well to minimize the risk associated with Li. The Li has been shipped through building 5 and the collaborator has recently received a DOT exemption for driving to ANL with Li.

Safety Incidents, Accidents, and Near Misses

There were two visits to the Medical department since March 2000. Eric Dufresne scratched himself on what might have been Pb shielding. He visited the medical department, and no serious ailment resulted.

In September 2001, Eric Dufresne reported to Jim Lang some pains in his wrists, arms and shoulders due to computer keyboard activities. He met with Jim Lang, visited the medical department twice, took anti-inflammatory drugs, and was referred to an outside specialist. He took the ESH computer ergonomics and met with Carol Giles and Ed Chang to improve his workstation.

III. Walk-Through Inspections

Records

An inspection was done to verify that the following records applicable at this time were being maintained:

- Sector Orientation
- Shop Training
- Other Training
- ESAFs
- Safety Communication records
- Periodic inspections such as chemical, shop, eyewash and walk-through
- Chemical inventory- ANL chemical tracking system
- Electronic Lab Safety
- End of the Run Summary
- SOP for laser work and Lithium lenses

The availability of the following documents was verified:

- MSDSs
- ANL ES&H Manual
- Laboratory Information Binders
- Other written procedures (posted in a binder at the entrance to the wet lab)
- Safety personnel contact list
- List of authorized shop users

Laboratories

- The lab areas were inspected and found to be reasonable.
- General housekeeping was found to be in good condition.

Beam Lines

- Duct tape should be replaced by safety tunnel tape for cable routed across floors or the cables should be rerouted.
- Cranes should be inspected monthly or locked out until further use.

IV. Close-out

The CAT Sector Manager has been denied access to certain MHATT-CAT areas, specifically, the locked cage. No resident staff appears to have access to his area. This represents a dangerous and inappropriate "parallel authority" that bypasses the CAT safety coordinator. Although the resident MHATT-CAT staff have done an excellent job of implementing an effective and practical safety program, the MHATT-CAT Director must take steps to insure that the resident safety coordinator has immediate access to all areas of the sector.

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