Safety organization in premises subject to magnetic fields

Since 2005 the CIBM has high field electro-magnets of intensity of 4, 7, 9 and 14 Teslas. These magnets can be dangerous if approached without taking a minimum of safety measures.

In order to minimize the risks all the area is protected by a code system installed on the doors which forbids the unintentional entry to lost or curious persons in the laboratories.

Each visitor or user has to fill out a form asking whether he carries prosthesis, a pacemaker or any other metallic object. This aims that each person asks himself whether he may approach this kind of environment.

As any ferromagnetic object can become a dangerous projectile, all the tools and equipment had to be carefully selected. If you search for “MRI” on Youtube you will find some very eloquent videos.

Each magnet contains more than 2500 liters of liquid helium and nitrogen. The volume of these gases can expand more than 700 times between their liquid and gaseous phase. In case of leak, this could cause a lack of oxygen which could lead to asphyxia. For this reason the laboratories are equipped with probes measuring the percentage of oxygen in air and linked with an optical and acoustic alarm system.

Emergency procedures have been established with the SHE: the users evacuate the eventual victim out of the dangerous zone as it is not conceivable to let a fireman wearing a belt and an ax, or an equipped rescuer enter the labs. This would largely increase the hazard.

Y. Pilloud      LIFMET

Eye protection-New eye wash system

If you are working in laboratories or workshops, you have certainly noticed the installation of the new eye wash system in rooms where projections of dangerous substances or dust can happen.

A) Bottles of physiological water were especially unsuited because the victim could only rinse one eye after the other (it is not possible to keep eyelids open and simultaneously handle bottles).

B) Eye wash system fixed on the water faucet is much better because tap water has a constant quality, everyone knows where the equipment is and both eyes can be rinsed at the same time. Nevertheless, the water temperature is often too cold to leave eyes under a water jet during 10 min. Furthermore it was noticed that an important number of faucet eye wash systems became stuck after a certain period (limestone?) making the device inoperative!

A new eye wash system was chosen in collaboration with the DII which consists of two bottles of physiological water under pressure diffusing a cleaning spray.

The system gets started by pushing the red button and the spray diffuses for about 12 min. Being at room temperature, there is no effort to support a washing for a long time. The victim uses the two hands to help keep the eyelids open. After use, you just have to change the bottles in the chemical store.

A video on the use of eye wash system can be seen at: http://sb-sst.epfl.ch/, topic «Emergency equipment». The SB-SST hopes that this new emergency equipment will be “useless” as long as possible and it remains that your first protection will always be your safety glasses.

http://sb-sst.epfl.ch/