



LABORATOIRE LEON BRILLOUIN

R 33 (0)1 69 08 60 38

N/REF. : LLB/2006/AM/AM

Saclay, 17 February 2006

Dear Colleague,

On behalf of all the laboratory, let me welcome you. You can be sure that we shall do all we can to ensure the success of the experiment you are going to realize on one of our spectrometers.

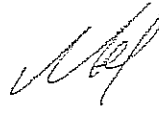
During your stay here, a permanent member of the LLB. (your « local contact ») will help you with everything concerning your experiment ; the scientific secretary (Mrs Anne Mostéfaoui) will be happy to solve any administrative problems.

In addition to the security rules and the form for your experimental report, you get a film for radiodosimetry, a personal radiation monitor, and a lab coat : you must wear them inside the controlled area. They must be returned to the scientific secretariat (building 563, room 220) on the last day before you leave.

Let me dwell up on a special point which arises from the nuclear environment in which you are going to work. Some rules or instructions which have to be followed, may appear to someone unnecessary and tedious. Nevertheless they are compulsory. Indeed, in case of transgression, our Nuclear Safety Authority might enact more rigorous controls which could be prejudicial to the quality of the experiment.

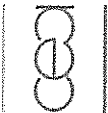
Hence I ask you to read carefully, and to follow, the security rules (particularly those concerning the radioprotection and the control of samples) which are enumerated in the enclosed documents. In case of questions or if you have hesitation, call your local and/or the SRI Officer (one is on duty 24h/day ; call the control room of the reactor).

Finally, again let me wish you a pleasant stay in our laboratory and above all I hope that you will be able to get the desired experimental results.


A. MENELLE
Director Assistant of LLB

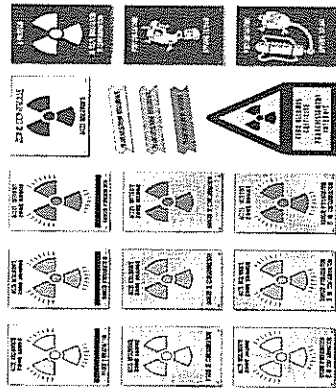
Documents enclosed :

- Safety rules
- Radiation protection instructions
- Rules on working hours
- Control of irradiated samples
- Use of the chemistry room in the hall of guides
- Rules relating to the use of the CEA computer facilities
- Instructions for publications and experimental reports
- Radio dosimetric film
- Personal radiation monitor (beeper)
- A labcoat



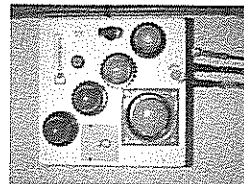
INB 101 ORPHEE REACTOR Health physics group (SPR) Safety instructions

In order to have access to the instruments, do not forget your 4 digits code (provided with your badge at the main gate) and to register at the reactor office (BCF bld.541 room 142)!



5 types of rooms exist in our buildings: with free access, monitored, controlled, regulated and prohibited. Your access rights depend on your classification with respect to radiation exposure, either public (NE) or as an employee of nuclear industry (A or B). *You must always respect the signposting.*

The levels of radiation hazards are measured by the board of radiation control (TCR). Automatic devices detects radioactivity continuously and display the result with 4 different colors related to LDO (Limite Dérivée Opérationnelle) as follows.



- Green : < 1 LDO : access authorized
- Yellow : > 1 and < 80 LDO : access authorized for a limited duration of time
- Orange : > 80 et < 4000 : access authorized only with SPR consent
- Red : > 4000 LDO : access prohibited

In case of an alarm, the lights begin to flashes and a siren comes on. You must leave the area immediately and gathered at the meeting point located in the main entrance of the reactor building. Wait here for further instructions.

- Never go back to your working area without the authorization of the reactor staff.

2 types of exposure to radiation exist.

External exposure: The radiation source is located outside your body.

Internal exposure: The radiation source has penetrated your body by inhalation, ingestion, or through a surface wound.

A lab coat has been provided to you. You must wear it buttoned-up all time in the controlled areas.

- Eating and drinking is forbidden in controlled areas.

To have access to the controlled areas, you must wear:

- a passive dosimeter (film)
- an active dosimeter (Dosicard) given by the SPR or the LLB.
- Dosicard has to be activated upon each entry in controlled area, and deactivated on exit.

- Access around a spectrometer is forbidden while the beam is on.

- On each exit of the reactor hall, you must check yourself for non contamination using the Sirius equipment.

- All material (samples, samples celles, electronics, ..) has to be checked for radioactivity before leaving the reactor building. Your local contact will help you to use the automatic equipment for testing radioactivity of your samples. Radioactive samples will be stored in a special room (02F).

Fire Brigade: 18 or 2-2224

Health physics: 2-2884 / 2-3374 or 2-4787

Reactor Control room: 2-2888 or 2-4306

Safety officer: 2-3832

SAFETY RULES
APPLICABLE
TO CEA/SACLAY :
SUMMARY

INSTRUCTIONS FOR THE ATTENTION OF EXPERIMENTALISTS

I - PROCEDURES TO FOLLOW IN THE EVENT OF ACCIDENT OR DAMAGE

Alert

The Orphée control room	☎ 2 4306
La Local Security Unit (FLS)	☎ 18

Indicate

The nature of the event	
its precise localization (building, room)	réacteur : bât. 541 bureau : bât. 563

II - IN THE EVENT OF EXTERNAL RISKS

If a dangerous situation appears, you will be informed by the general order network alarm.

simple chime	pre-warning
non modulated siren	warning
modulated siren	alarm

As soon as you hear the siren

- set the spectrometer and the sample environment in safety configuration
- wait for the message which will indicate you what to do.

In the event of an evacuation order

Go quickly to the building assembly point along the itinerary marked with green arrow :

Reactor building ⇒ main entrance hall.

Office building ⇒ ground floor, entrance hall.

III - HELPFUL PHONE NUMBERS

Local security Unit, fire brigade	☎ 18 ou 2 2224
Control room of the reactor	☎ 2 4306
Security organizer for neutron areas : Y. Fournier	☎ 2 7229
Chemistry security organizer : G. Carrot	☎ 2 6037
Medical service	☎ 2 6567
Radioprotection department	☎ 2 3374
Secretariat of LLB	☎ 2 5241

Procedures

to follow...

- In the event of incident or suspicion of incident of a radiological nature

Suspicion about external irradiation

1. Quickly leave the suspect area
2. Call the SRI officer (building 541 - room 08 - phone : 2 3374)
 - explain to him the facts
 - give him your dosimetric film badge and follow his advice
3. Go to the occupational medical service (referred to as : SMT, building : 601)

Going to the SMT is imperative because an external irradiation, global or localized, can result in objective clinical indications only a few days after the incident ; only early appropriate medical and biological exams will allow the confirmation of any diagnoses.

Contamination incidents

Unexpected contamination incidents (splashing liquid, degassing) should be detected during or at the end of systematic controls of the work premises.

1. Note the type of handled radionuclide and beware of a possible absorption by inhalation.
2. Go to the medical service (SMT, building 601).

General comments

In the event of an incident or accident of a radiological nature do not forget :

- to alert in priority the FLS in the event of bodily harm
- to immediately alert the SRI officer who is the most qualified person to initiate the necessary emergency actions.

Finally, it is important to recall to the first-aid workers and the members of the local safety group (referred to as : GLI) that concerning a contaminated casualty :

vital emergency takes precedence over any decontamination.



2) Only use:

equipment, under satisfactory working conditions, which has been periodically inspected if necessary, and which includes regulatory protective devices, and for which you have received preliminary warning concerning the operating hazards and the safest operating mode;

approved ladders appropriate for the job in hand, handling equipment, cords and slings, in satisfactory condition and which meet required standards.

3) Never work alone in a room whose location is such that others may ignore an accident.

4) If necessary, your unit managers will:

- inform you of any safety problems concerning your working position;
- provide you with the individual protective equipment appropriate to the hazards involved (helmets, protective goggles, gloves, safety harness, safety shoes, etc.) and check their effective use;
- check the correct use, storage and handling of instruments, equipment or tools provided to trainees;
- describe the alert signals which may be heard on your working place and what should be done in case of alert.

3.2 - Use of Equipment

1) Using Hoisting and Handling Equipment:

The use of hoisting and handling equipment is limited to personnel having undergone appropriate training, and having obtained authorisation from the Facility Manager.

2) Using Machine Tools

The use of machine tools is also subject to authorisation from the Facility Manager.

3) Using lifts and freight elevators

- In the event of an accident in a building, it is prohibited to use the lifts and freight elevators.
- Never enter a non-lit lift or freight elevator.
- Observe the maximum authorised number of people displayed inside the lift or freight elevator.
- Never use personnel lifts for transporting equipment (except small hand equipment).
- In freight elevators, check for correct slinging of the equipment. If the freight is placed on a trolley, secure it. Freight catching on any protruding part of the well may result in very serious accidents for accompanying personnel, when no cabin door is provided.
- Report any anomaly to the STL (phone 2.49.99).
- Outside normal working hours, avoid using lifts not provided with a safety phone.
- Keep accesses to machine rooms clear. These premises are strictly reserved for maintenance personnel and FLS officers.

4) Working on Electrical Equipment

- All work on live electrical equipment is prohibited.
- Access to electrical premises is strictly reserved for authorised electricians.
- It is prohibited to modify existing facilities.

LABORATOIRE LEON BRILLOUIN

☎ 33 (0)1 69 08 60 38



N/REF. : LLB/2001/CA

Saclay, le 17 février 2006

Working hours

We must remind you of the french legal limitations on the working time :

In each period of 24 hours it is :

- forbidden to stay on the working place more than 10 hours at a time,
- compulsory to take a rest which can not be less than 11 hours at end.

As no dérégation for our activity has been provided, the law applies to everybody. In case of transgression, the director of the laboratory and/or your employer could be prosecuted by the Factory Inspectorate.

R. KAHN

Adjoint à la Direction du LLB



Note LLB-04-216/AM

JUNE 29th 2004

Alain MENELLE Responsible of LLB experimental areas	to	LLB users
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Objet : Use of the chemistry room in the hall of guides (room 23A, blg. 541).

The use of the chemistry room in the hall of guides (room 23A, blg. 541) is devoted to the cleaning and preparation of samples just before their measurements on our spectrometers. Its responsible is Jacques JESTIN helped by Fabrice COUSIN who have in charge the safety of the room. Marc Detrez is in charge of the maintenance and the provision of consumables.

The use of this room is limited to the people who have filled up the attached request of use form, on which is indicated the name of the users, the dates of use and the operations performed. Once filled, it is given to the responsible of the room or his deputy who checks that the operation described may be done safely.

Permanent authorisations for routines operations described here after are given to LLB researchers listed by the responsible of the room. This list is updated at least once a year.

This room is used by many users. It will contain only a minimum amount of chemicals necessary in the realisation of the operations described here after :

- Small quantities of chemicals (less than 250 ml) brought by users for the fabrication of their samples. These products will be labelled, dated and withdrawn after their use or the departure of the users.
- A maximum of 5 liters of each of the following solvents : acetone, ethanol, toluene, THF.
- A maximum of 2 liters of each of the following solvents : diethyl ether, cyclohexane, ethyl acetate, formaldéhyde, chloroform and hexane.

Bottles of solvents will be put in the solvent board.

All other products have to be authorised by the responsible of the room and have to be labelled with the name of the product, the user and the date.

Routine authorised operations are the following ones :

- Cleaning of cells and samples with authorised solvents
- Dilution and mixtures of samples and solvents in small quantities (less than 100 ml)
- Use of the equipments located in the room : drying oven, stirring machine, thermostated bath, ultra sound bath, balances.

Glass containing or having contained food are forbidden in this room (especially bottles of drinks).

After use, glassware have to be cleaned and put in the cupboard or thrown away in the glassware dustbin. Used solvents will be stored in the dedicated container located under the hood. Used needles will be put in a dedicated box. Other wastes that have been in contact with chemicals (gloves, kleenex, plastic tubes,...) will be put in the main specific chemical dustbin.

The responsible of the room has to organise the evacuation of all the specific dustbins containing the various chemical wastes as well as all the non labelled or unauthorised products found in the room.

Alain MENELLE

Copie : Direction du LLB
J. ESTRADE (Chef de l'INB 101)



JUNE 29th 2004

Request of use of the chemistry room in the hall of guides (room 23A, blg. 541) for samples preparation.

This form is to be filled before any use of the chemistry laboratory in the hall of guides (room 23A, blg. 541). It gives a description of what will be done, when, and who will use the chemistry room.

Experiment number or name of the utilisation :

Date of beginning of use :

Date of end of use :

Name of people involved :

.....
.....
.....
.....

Description of what will be done in this chemistry room :

.....
.....
.....
.....

List of chemicals that will be used (other than authorised solvents) :

.....
.....
.....
.....

..... knowledge to have read the general conditions of use of the chemistry room of the hall of guides (room 23A, blg. 541) written in the note referenced LLB-04-216/AM.

Date :

Signature :

Once filled, this form has to be put in the mail box of Jacques JESTIN who is in charge of the chemistry room of the hall of guides (room 23A, blg. 541).

Use this form to indicate your activity in the hall of guides chemistry room.

EXPERIMENT IN PROGRESS

Name :

Experiment number :

Instruments : PACE/PAXE/PAXY/EROS/MUSES/MIBEBOL

Name of the local contact :

Telephone number in case of emergency :

List of the chemical components used:

Description of the work to be performed in the lab :

For further information / in case of a problem in the chemistry room contact :

Jacques Jestin / Fabrice Cousin : 2 6773

If out of working hours, contact the control-room : 2 4306

FLS : 18 / red phone / 0169 08 22 24

RULES RELATING TO THE USE OF THE CEA COMPUTER FACILITIES

Domain of application

The present conditions apply to all users of the scientific computer facilities within the CEA.

They concern

- the direct use of scientific computer systems within the CEA
- the access to external systems from within the CEA

The violation of these conditions could lead to the withdrawal of access rights to these systems, to administrative sanctions and to lawsuits.

Conditions of access

The use of the computing facilities is strictly limited to the professional activities of the user.

The conditions of access to each system are defined at the group, service, and department levels, depending on the activities of each user.

The right of access to a system involves the setting up of an account, the use of which is strictly individual.

- the user may only gain access to the system through an account which has been attributed to him/her
- the user must never give the right to use his/her account to another person, without first referring to the system manager
- the user must indicate to the system manager any unauthorized access (or repeated attempted access) to his/her account

Protection of access and of files

Each account is protected by a password, the management of which is the responsibility of the user.

In the absence of specific requirements, the following recommendations apply:

- a password of at least 8 characters should be used
- words that exist in dictionaries should be avoided
- all likely words such as the current month, family or christian names, date of birth, telephone numbers, etc., should be avoided

It is the sole responsibility of the *owner* of a file to define the access privileges in order to maintain the confidentiality of his/her data, and to prevent any *inadvertent* modification or destruction.

Respect of the confidential nature of information

All individual private user files, whatever their protection, must not be read, copied or otherwise modified, without the prior consent of the user concerned.

It is forbidden to read, copy or modify system files, however they are protected, without the prior consent of the system manager.

Respect proprietary rights

All users must strictly respect the proprietary software rights according to the law.

Apart from legal considerations, software documentation may only be copied after receiving authorization from the owner, private user or system manager.

LABORATOIRE LEON BRILLOUIN

☎ 33-(0)1 69 08 60 38



N/REF. : LLB/2001/RKJCA

Saclay, le 17 février 2006

Instructions for publications and experimental reports



We kindly ask you to respect the following rules in every paper submitted to a review, a newspaper or a congress.

- If there is no co-author from the LLB, the use of the LLB facilities must be clearly indicated in the first page, with reference to a footnote : « CEA/CNRS laboratory »
- If one co-author belongs to the LLB, its address will have a footnote : « CEA/CNRS laboratory »

Moreover, when accepted for publication, 2 reprints must be sent to the scientific secretariat of the LLB.

At last, we recall that, in any case, an experimental report has to be sent to the scientific secretariat of the LLB within a period of 6 months after the experiment.

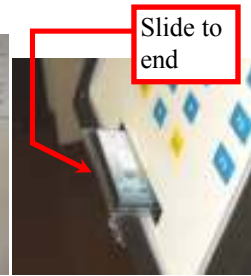
Dosicards use



Dosicard is a device that records the radiation dose that you will receive. It has to be started before you go on the spectrometer and stopped when you leave. At that moment, your dose record is transferred to a computer that will send your dose to your occupational doctor.

Dosicard start : begin of work

To start your Dosicard, slide it in the reader called « Entrée » and wait that the machine ask you your « code d'intervention ». Type in **204 « Valid »**. Dosicard is on; astérisc and arrow are blinking.



Dosicard stop : end of work

Slide your Dosicard in the reader called « Sortie », wait a few seconds. The device tells you doses which have been recorded since the start of the dosicard, since last 7 days, since last 30 days.

In case of troubles or alarm, please contact the SPR, room 8, in corridor at the right of the main entrance of building 541.

Some advices

- Dosicard have to be used on spectrometers, they have to be « on ».
- Best practice* is to stop your dosicard at lunch time and each evening while leaving blg.541, and to restart it when you comeback.
- Never leave your dosicard « on » on the instruments if you are not here. Stop it and leave it on your labcoat in the lockers available on a self-service basis at the main entrance of the hall of guides.
- **Mobile phones create perturbations in the operation of Dosicards, please do not leave them close together.**



* For your safety, alarm thresholds of Dosicards are set very tight. The way to use it described here should enable you to work without troubles. If alarms are reached, Dosicard will beep. Just contact the SPR to solve the problem.

