

3. Radiation Materials

*For inquiries or questions about radiation materials refer to ;

<http://www.rcnp.osaka-u.ac.jp/Divisions/safety/english/related.pdf>

In the radiation area, entry and exit management is strictly limited.

Only “RCNP radiation workers” or “joint workers” are permitted to work in the radiation area.

Permission is necessary for the handling of radiation materials.

An RCNP staff escort is necessary for visits to the radiation area.

< General Information >

- (1) Many researchers have achieved superior results in their research by using our facilities at RCNP. The following information includes the necessary procedures that must be followed for research to be conducted safely and to protect RCNP staff, cooperative researchers, national joint users and visitors from accidental exposure to radiation.
- (2) Entry to the radiation area at RCNP is limited by control cards. Each person who needs to enter the radiation area must be issued an appropriate control card by the radiation control room.

How to obtain a control card:

1. RCNP staff:

All those who work in the radiation area must register as a radiation worker and obtain a control card.

2. First time entry for joint users:

- (1) need to register as a joint user
- (2) need to attend a lecture about our facilities at RCNP after registration. A control card will be issued after the lecture

Non-registered users

- 1) need to confirm whether you are a radiation worker at an organization affiliated with our center. If you are not, you must first go through the necessary procedures at an affiliated organization.
- 2) An application form for working in the radiation area should be submitted to the radiation control room before working in the radiation area

Application forms for working in the radiation area are available at the following URL:

<http://www.rcnp.osaka-u.ac.jp/Divisions/rad/index.html>

- 3) A control card is issued after you attend a lecture about our facilities at RCNP and submit your application form to the radiation control room.

3. Undergraduate / Graduate students

- (1) need to attend a lecture about our facilities after submitting “the document of approval of a radiation worker” with the signature of an adviser (must be a teacher at a university that is properly qualified as a joint user at this center). A control card is issued after this process is complete.

4. Visitors

- (1) All visitors (except for radiation workers) must obtain permission from the radiation safety supervisor, and enter with an RCNP staff member after being issued a control card. When that happens, an ‘application for entry to radiation area’ and a ‘report of work end’ must be submitted to the radiation control room.

***Application forms are in the radiation control room.**

5. SUMIJU Accelerator Service and TOHO Building Service

They are same position as the RCNP staff.

Must follow the same regulations as the RCNP staff.

*For inquiries and questions about procedures, documents, or a guide to the radiation control room (extension 8830)

Instructions for entry to the radiation area:

- (1) When entering a radiation area, you must put on a personal dose meter.
- (2) Entry to the radiation area is managed with a control card. A control card is a non-contact chip card. To use, place the card about 30 centimeters from any of the 3 card readers located within the AVF cyclotron building or any of the 4 readers in the Ring cyclotron building. The door will open automatically after the green light appears and the buzzer sounds.
 - * The door will remain open for 20 seconds and then automatically shut.
- (3) The lock is also released automatically after card recognition at the experimental hall doorways and the same procedure can be used to open a normal door. If a door is kept open for longer than approximately one minute, the interlock system automatically works and the control card access will no longer function.
 - 1) Confirm that the door closed after all have passed through.
 - 2) When the control card access does not work and a red light appears on the reader even when the card is brought close to it, one of the necessary requirements for

entry is not being met (ex. The card could be out of order or expired). If this happens, please contact the radiation control room.

- (4) When beam irradiation is taking place or the residual radiation level within the control area reaches a dangerous level, entry is prohibited and control cards will not function. If this should happen, please contact an operator or the person in charge of the experiment.

Entry to a Radiation Area:

- (1) The Radiation control area of RCNP is maintained by separating it into two areas, Part.1 and Part.2.
- (2) Footwear is exclusive to each area and must be changed to enter each area.
- (3) Eating and drinking are prohibited in the radiation area. A restroom is designated for each area and can be found in front of each automatic door.
- (4) When entering an experimental hall while an accelerator is in operation, you must have a safe key for each person at all times.

Visitors' Entry to Radiation Areas:

- (1) Visitor entry is not permitted into any part of a radiation area except through an experimental hall. Only a worker may approach by way of the signboard for fear of high levels of radiation activity.
- (2) Do not bring any unnecessary belongings such as a bag, tools, etc... into a radiation area. Items such as these may be removed from the radiation area. When anything needs to be removed from the radiation area, contact the radiation control room (extension 8830) and always check the radiation level.

Outside Suppliers Working in a Radiation Area:

- (1) Must be granted access to the radiation area by an RCNP staff member registered as a radiation worker at RCNP and must wear a personal dose meter.
- (2) Do not go to any area without a specific purpose and do not touch anything unless necessary.
- (3) Materials for exchange or maintenance are taken from an import box. Whenever necessary, do not bring materials, such as wrappers, into the radiation area if they are to be thrown out.

- (4) Work tools should be brought only to repair necessary machine parts. When the repair work has been finished, contact an RCNP staff member registered as a radiation worker at RCNP. All the tools brought into the radiation area must be checked for their radiation level.
- (5) Plan beforehand so that work in a radiation area can be completed in as little time as possible.

***If you have any inquiries or questions, please contact the radiation control room (extension 8830).**

Regulations for Emergency and Dangerous Situations:

1. If a fire or explosion occurs and the danger is imminent follow these safety measures:

- (1) The first person on the scene should take the following measures:
 - 1) activate a fire alarm and quickly inform any nearby people of the danger.
 - 2) Contact the accelerator operating manager immediately (090-3051-3770).
 - 3) Call the fire department (extension 118) directly.
 - 4) Any qualified people may try to extinguish the fire in the early stages, but if it is spreading quickly or seems dangerous, evacuate to a safe place and wait for the arrival of the fire department.
- (2) The accelerator operating manager must take the following measures:
 - 1) If a fire and/or an explosion occurs, contact the radiation control room regardless of whether the fire or explosion is within the radiation area.
 - 2) An emergency broadcast is mandatory after calling the fire department.
(address, the status, a full name)
 - 3) The accelerator operating manager and the fire prevention manager must assume a leadership role in first-aid and fire fighting procedures until assistance arrives on the scene.
(When an accident or injury has already occurred, assess the condition as much as possible).
 - 4) Any people who are not involved in administering first-aid or fighting the fire must be evacuated to a safe place where all can be accounted for.

2. If an electric fire occurs:

- (1) Switch off electricity at the source of the fire
- (2) If the fire is in the early stages, attempt to extinguish it with a fire extinguisher. If this is not possible, evacuate to a safe place immediately.

Instructions for Exit:

- (1) If you are getting out from an area that has suspected radiation contamination, please confirm contamination level with the appropriate monitors.

Other Information

*If you have any inquiries or questions, please contact the radiation control room (06-6879-8830/ - extensions 8830).