

## Safety Management Group

### 1. Abstract

The RIKEN Nishina Center for Accelerator-Based Science possesses one of the largest accelerator facilities in the world, which consists of two heavy-ion linear accelerators and five cyclotrons. This is the only site in Japan where uranium ions are accelerated. The center also has electron accelerators of microtron and synchrotron storage ring. Our function is to keep the radiation level in and around the facility below the allowable limit and to keep the exposure of workers as low as reasonably achievable. We are also involved in the safety management of the Radioisotope Center, where many types of experiments are performed with sealed and unsealed radioisotopes.

### 2. Major Research Subjects

- (1) Safety management at radiation facilities of Nishina Center for Accelerator-Based Science
- (2) Safety management at Radioisotope Center
- (3) Radiation shielding design and development of accelerator safety system
- (4) Obtaining permissions for changes accelerators and use of radioisotopes

### 3. Summary of Research Activity

Our most important task is to keep the personnel exposure as low as reasonably achievable, and to prevent an accident. Therefore, we daily patrol the facility, measure the ambient dose rates, maintain the survey meters, shield doors and facilities of exhaust air and wastewater, replenish the protective supplies, and manage the radioactive waste. Advice, supervision and assistance at major accelerator maintenance works are also our task.

Permissions from Nuclear Regulation Authority of Japan to pass the uranium beam through air was obtained. The permission also includes change of border of radiation-controlled area to construct a new building for a compact neutron systems RANS3. Safety measures were conducted in the Radioisotope Experimental building owing to the increased use of alpha-emitting nuclides. The exhaust system for RI-containing air in the radioactive controlled area in Nishina building was renewed as it was no longer possible to replace parts. To apply the revised legislation for the “Ensuring the reliability of radiation detectors,” periodic inspections for legal standards and its procedure was formulated.

## Members

### Director

Kanenobu TANAKA

### Technical Scientists

Rieko HIGURASHI

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### Expert Technician

Atsuko AKASHIO

### Special Temporary Technical Scientist

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### Special Temporary Employee

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### Visiting Scientists

Toshiya SANAMI (KEK)

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Kenta SUGIHARA (KEK)

Eunji LEE (KEK)

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Shinji TOKONAMI (Hiroshima Univ.)

Yasutaka OMORI (Hiroshima Univ.)

### Administrative Part-time Workers

Satomi IIZUKA

Naoko USUDATE

Miyabi MURATA

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### Temporary Staffing

Ryuji SUZUKI

### Assistant

Tomomi OKAYASU

## List of Presentation

### Presentation

#### [International Conference/Workshop]

A. Akashio (plenary), K. Tanaka, N. Shigyo, K. Sugihara, and H. Haba, “Design of radiation shield for RI production beam line by PHITS,” Joint Symposium on Nuclear Data and PHIS in 2023, Ibaraki, Japan, November 15–17, 2023.