東京大学理学部

Radiation Safety Course, School of Science, University of Tokyo

放射線取扱者講習会
(一般講習会)

放射線管理の概要

Overview of Radiation Management

放射線取扱者の手続き

Procedures required as a radiation worker

2025年度

School Year 2025

放射線管理の法令

Japanese Laws for radiation protection

- RI (radioisotopes)・α・β・γ・protons・neutrons・heavy ions
  & Over-1 MeV electrons・X-rays
  - **放射性同位元素等の規制に関する法律（ＲＩ規制法）**
    Act on Regulation of Radioisotopes etc. (RI Regulation Act)
    ／同施行令／同施行規則
- X-rays
  - **電離放射線障害防止規則**
    Regulation on Prevention of Ionizing Radiation Hazards
    ☞ 労働安全衛生法／同施行令
- Nuclear fuel materials etc. 核原料物質、核燃料物質
  - 核原料物質、核燃料物質及び原子炉の規制に関する法律／同施行令
- Medicals 医療および医薬品
  - 医療法施行規則　☞ 医療法・同施行令

Radiation Hazard Prevention Regulations

School of Science, the Univ. of Tokyo

to comply with amendments to laws and ordinances on **the calibration of measuring devices**

Established on May 22, 1st year of Reiwa
Revised on July 19, 1st year of Reiwa
Enforced on September 1, 1st year of Reiwa
Revised May 19, 3rd year of Reiwa
Revised September 20, 5th year of Reiwa
Revised February 19, 7th year of Reiwa

(Purpose)

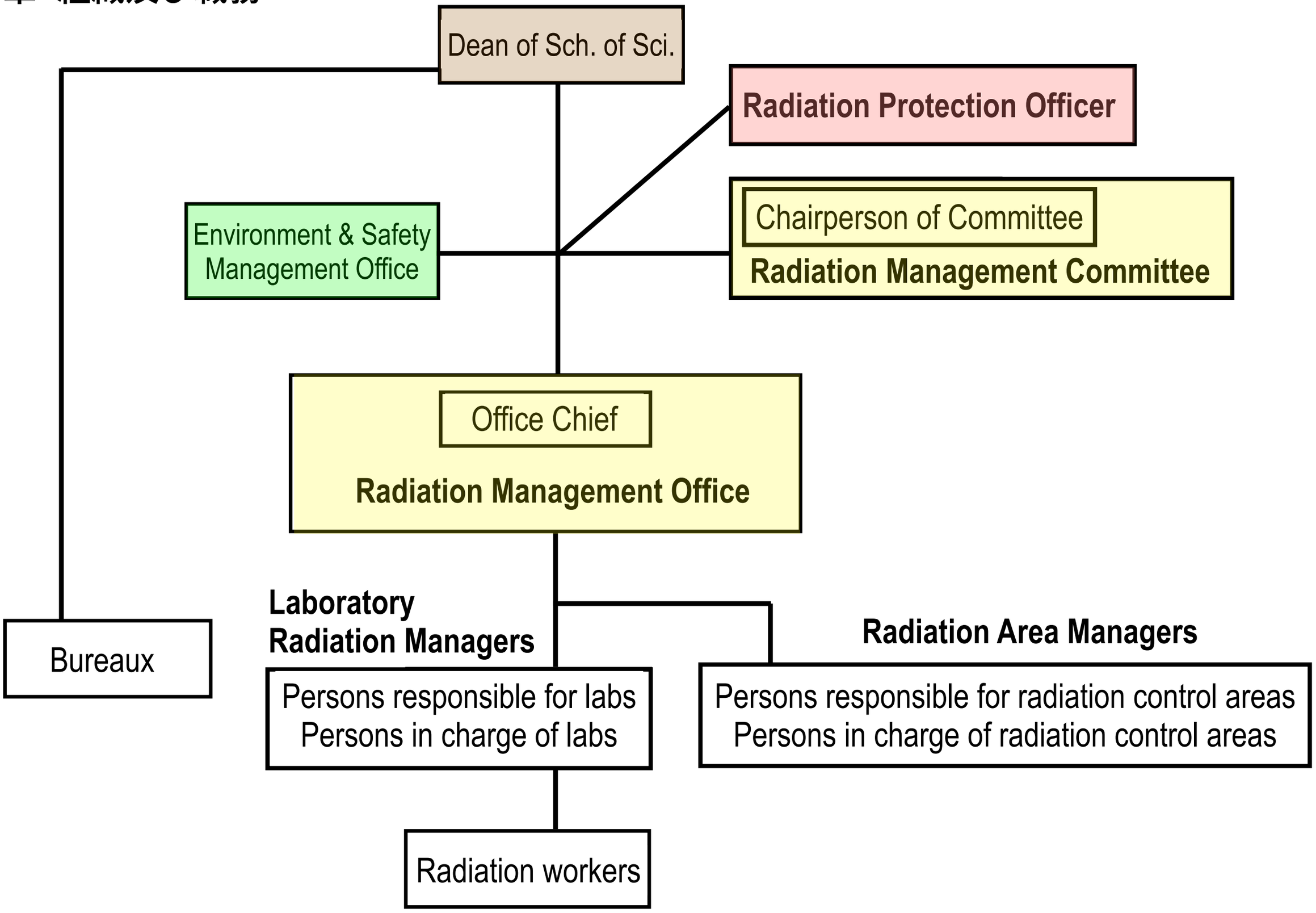
Article 1. This regulation is based on the Act on the Regulation of Radioisotopes, etc. (Act No. 167 of 1957) (hereinafter referred to as the "**RI Regulation Act**") and related laws (hereinafter referred to as the "RI Regulation Act, etc."), and stipulate matters concerning the **handling and management of** radioisotopes or radioactive contaminants (hereinafter referred to as "**radioactive isotopes, etc.**") at the Graduate School of Science and the Faculty of Science (hereinafter referred to as "this faculty") for the purpose of **preventing the occurrence of radiation hazards**, and **ensuring public safety**.

Article 2 (Obligation of the Establishment)

Article 8 & 9 (Obligations of the Dean and the Vice Deans)

School of Science (SoS), the Univ. of Tokyo (UT) is an establishment permitted to use radioisotopes, with more than 500 radiation workers including X-ray users.
SoS, UT is responsible for radiation management to comply with the law and relevant regulations.

第３章　組織及び職務



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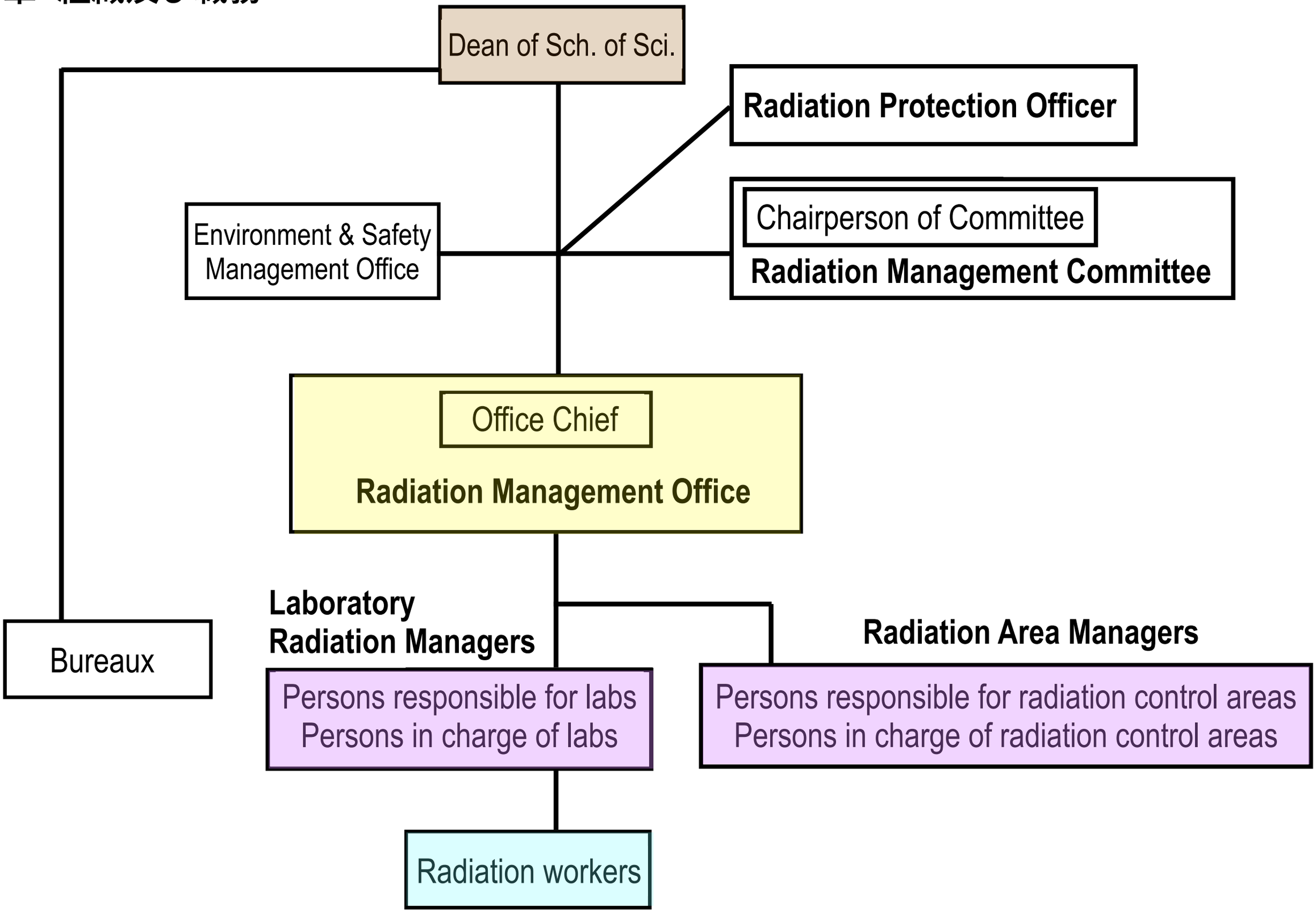
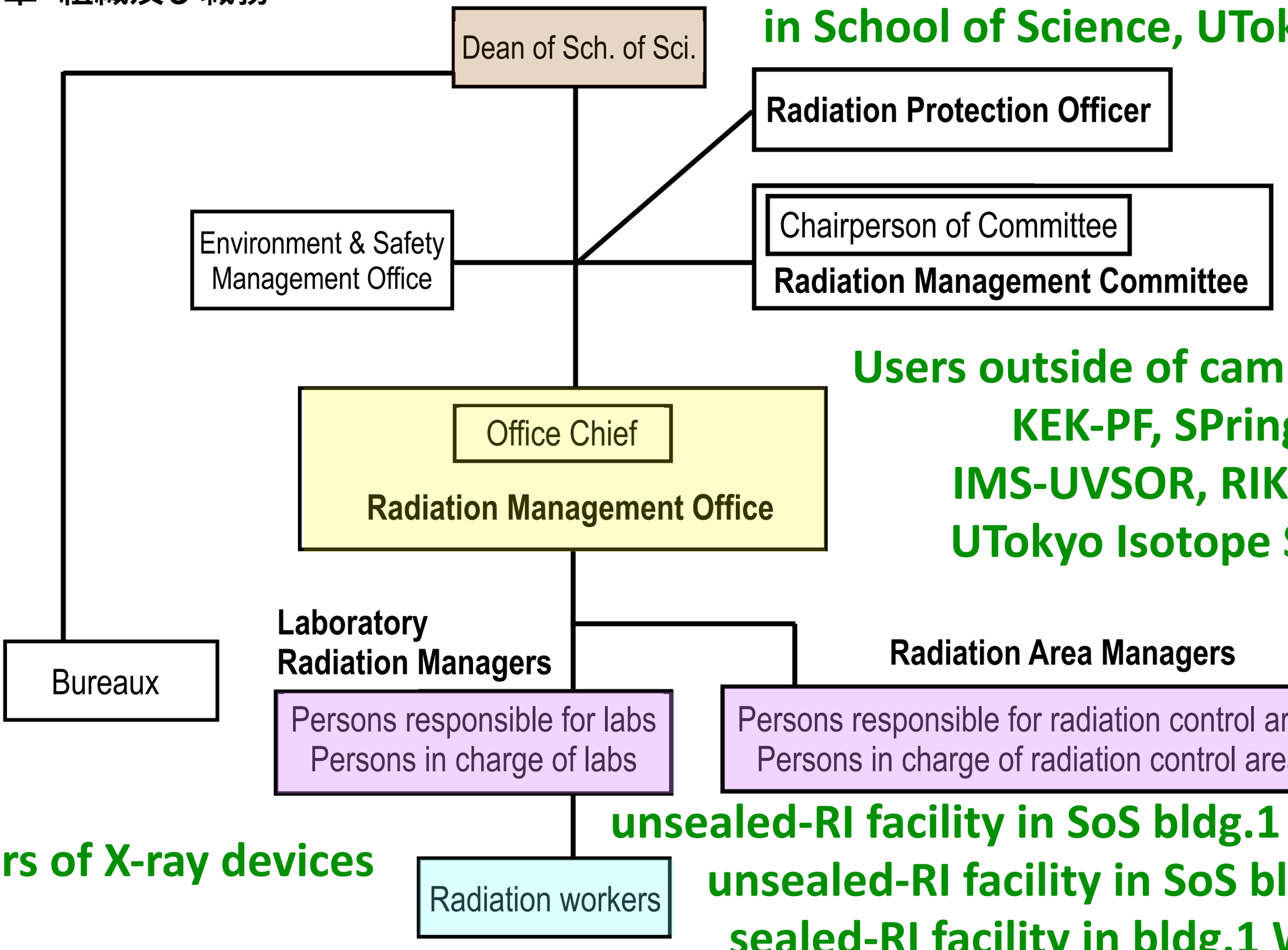
第３章　組織及び職務


Dean of Sch. of Sci.
Radiation Protection Officer
Environment & Safety Management Office
Chairperson of Committee
Radiation Management Committee
Office Chief
Radiation Management Office
Bureaux
Laboratory Radiation Managers
Radiation Area Managers
Persons responsible for labs
Persons in charge of labs
Persons responsible for radiation control areas
Persons in charge of radiation control areas
Radiation workers

第３章　組織及び職務

Total over 500 radiation users in School of Science, UTokyo



Users outside of campus
KEK-PF, SPring-8, IMS-UVSOR, RIKEN, UTokyo Isotope S.C.

Users of X-ray devices

unsealed-RI facility in SoS bldg.1 East
unsealed-RI facility in SoS bldg.3
sealed-RI facility in bldg.1 West

Article 17 (Persons responsible for labs & persons in charge of labs)
Article 18 (Their duties)
Article 20 (Persons responsible for radiation control areas)
Article 23 (Periodic checkout)

Laboratory Radiation Managers

Radiation Area Managers

Article 19 (Radiation workers)
Article 23 (Rules on radiation control areas)

Chapter 9: Article 40 (Education and training)
Chapter 10: Article 41 & 42 (Health management)

Chapter 13: Article 47 (Provision of information)

Article 28 (Use of radioisotopes)

Article 29 (Handling of unsealed radioisotopes)

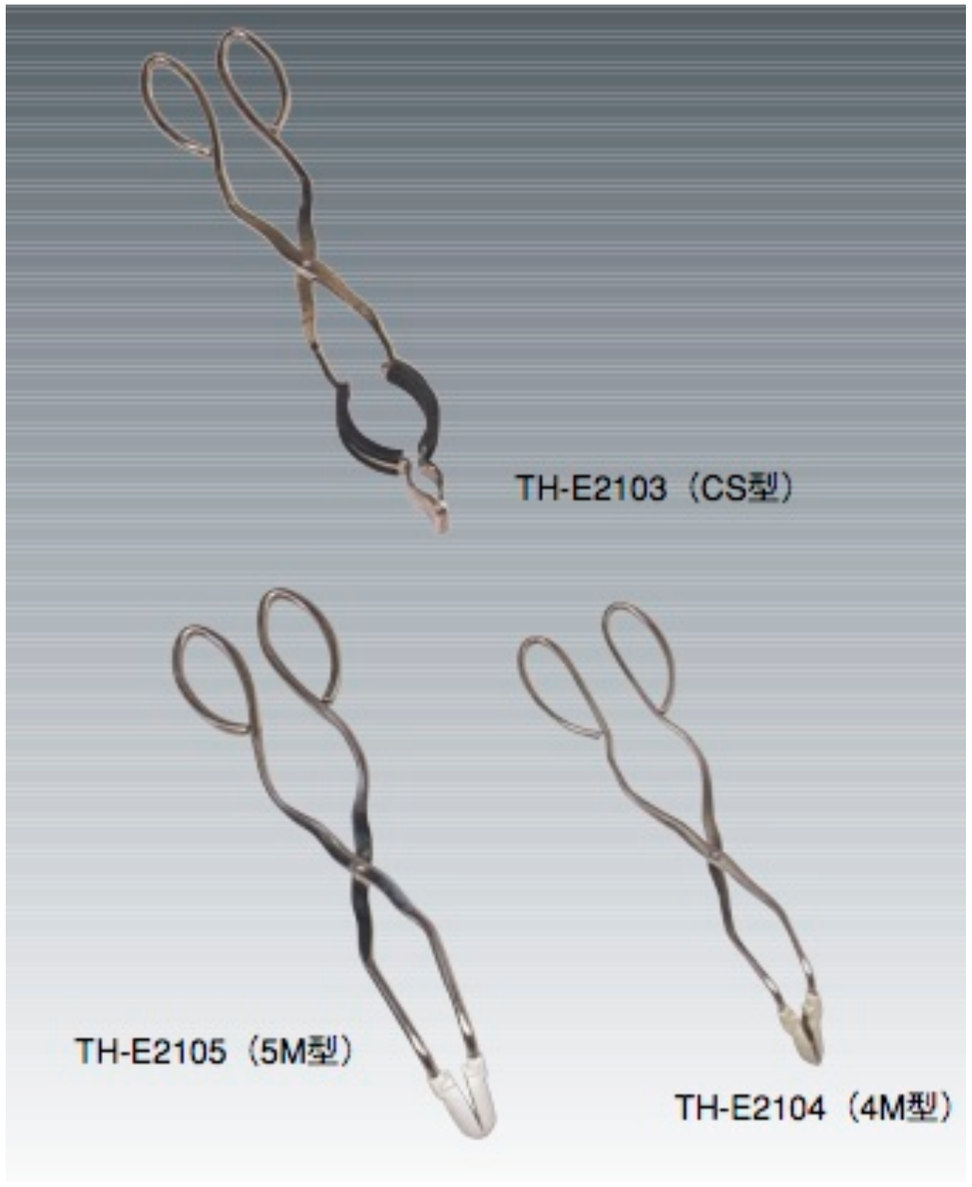
汚染の可能性のあるフード内や実験台をポリエチレンろ紙で覆う。

バット（受け皿）やトレー内で取扱う。 Use polyethylene sheets & trays

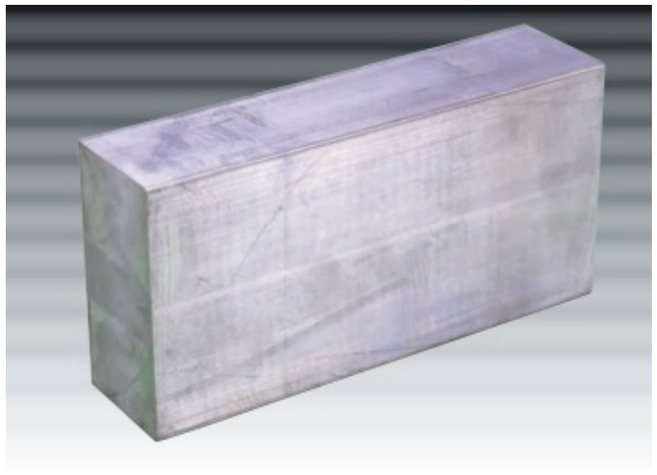
廃棄物の種類ごとに容器を用意。 Separate waste boxes for RI & non-RI

核種にあった適切な遮へい器具を使う。 Use shielding materials suitable for nuclides used.

Article 30 (Handling of sealed radioactive sources)



lead brick



lead apron

ピンセット、トングなどを使い、ＲＩからの距離を取る。
適切な遮へい材を活用し、放射線をさえぎる。

Use appropriate tools to take distance from RI

Shield radiation

Handling of Luminess badge Dosimeter

- Wear the badge of the appropriate type.

  SG type：X, γ and β rays

  KG type：X, γ and β rays, neutrons

  Position to wear the badge： At the chest for males

  At the abdomen for females

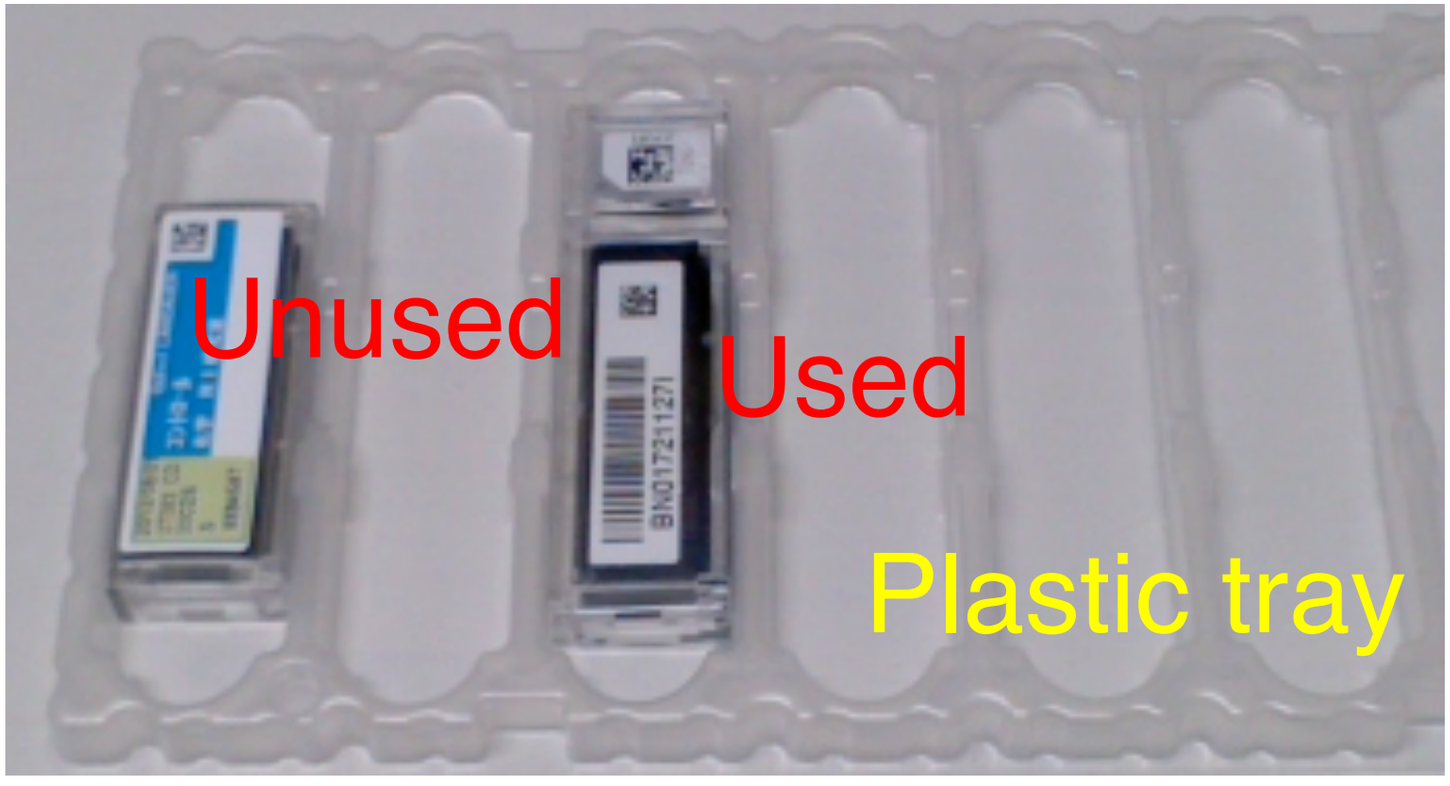
- Make sure to wear the badge to enter radiation controlled area in research institutes in Japan.

  → In order to manage the total personal exposure dose.

- When using airplane, be careful not to pass through the badge to X-ray baggage inspection at airports.

Handling of Luminess badge Dosimeter

- At the time of monthly badge exchange, return the badge of the previous month to the person in charge in your lab, and receive the new one.



Clearly distinguish between used / unused badges. Submit unused badges as well.

- You will always receive measurement result of the badge from the person in charge in your lab.

Important check list for prevention of accidents

To prevent loss or theft of radioisotopes (RIs)

- Check the number and location of RIs after use (by eye and/or measurement).
- Make records of usage and storage, and check the real items regularly.
- Make sure about appropriate management of keys for the storage boxes etc.

To minimize exposure and contamination

- Check contamination of your working area.
- Assume that whatever unlikely accident can happen. Think about all risks.
- Use survey-meters to check possible contamination of garbages to be transferred out of the radiation control area.
- Keep the hazard-prevention manual updated, inform your lab members for thorough understanding of the content.
- Frequent and steady communication with your lab staff members is essential.

Regulation on Prevention of Radiation Hazards School of Science, University of Tokyo

Article 45 (Measures in case of disasters)

Article 46 (Measures in case of danger)

Instruction of measures to be taken in case of radiation emergency

School of Science

RI facility Emergency contact network

Radiation worker

People around

Prevent escalation of the accident
Inform the fire station if necessary

Radiation Area Manager, Equipment Manager
Laboratory Manager, Vice Lab. Manager

If necessary

Radiation Management Office

Emergency measures

Chief of Environment and Safety Management Office

Chairpersion of Radiation Management Committee

Radiation Protection Officer

School Adm. Office

Dean

Vice Dean

UT Communication Network for Radiation Emergency

UT Communication Network for Disasters

Check our web site for info on radiation management.

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https://ri.adm.s.u-tokyo.ac.jp/

Procedures for radiation management

UTRadMS

Sorry, but only in Japanese.

Univ. of **T**okyo
Radiation
Management **S**ystem

Every user must access the system with his/her UTokyo ID.
Ask the Laboratory Radiation Manager in your lab. for assistance.

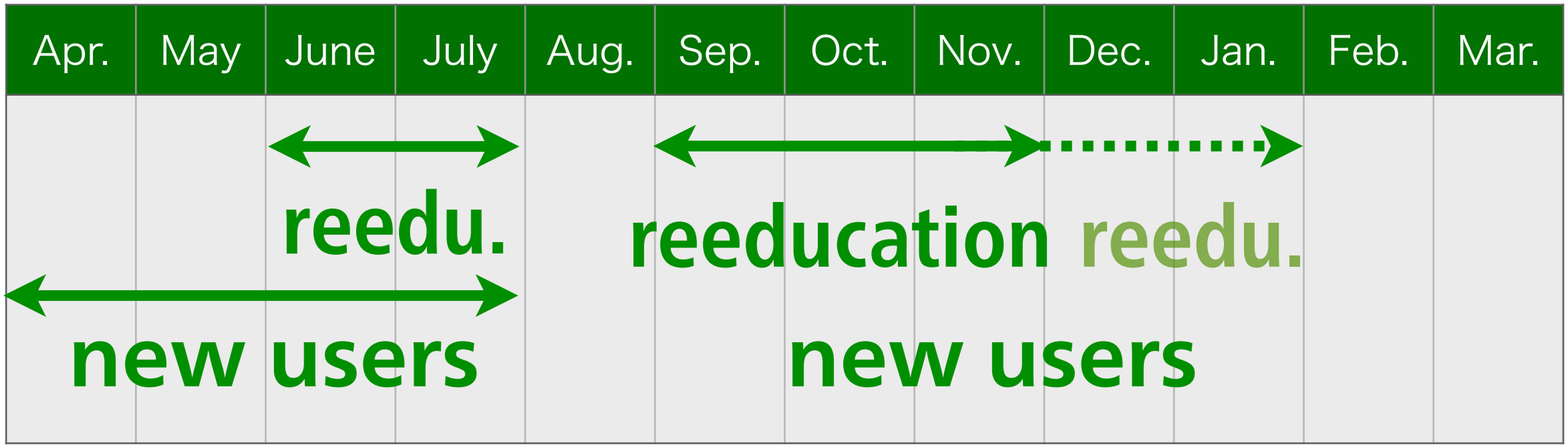
理学部放射線講習会

★ English course for general users

★ Japanese course for bldg.3 users

course for general users

(only for Japanese-speaking RI users in the RI facility in bldg.3 and limited to those who do not use X-ray devices)



Reeducation once every school year (Apr.—Mar.) (except for X-AB users)
New user for this year will take next year's course as reeducation.

<!!> Users of Accelerator or SR (SOR) facilities outside of UT should be careful about when to take the education session because some facility requests educational record within one year upon user registration.

Required documents to be submitted to those facilities must be prepared well in advance.

Classification of authorization categories of radiation workers at UTokyo

RI & Accelerators

unsealed or sealed radioisotopes (RIs), accelerators, synchrotron radiation (SR), nuclear reactors

X-CDE

X-ray devices category C, D & E, Special-type electron microscope, X-ray device managers responsible

X-AB

X-ray category A & B (normal users)

Classification of X-ray devices at UTokyo

密閉型 closed system	A	Completely sealed
	B	Interlock used all the time
非密閉型 non-closed system	C	Interlock used appropriately
	D	Equipments installed in a room
	E	Not fixed / mobile

Application for Registration as a Radiation Worker

↓

Health Checkup including blood test

UTokyo Radiation Course on UTRadMS (e-learning)

SoS (School of Science) Radiation Course

↓

Application for Authorization to Radiation Management Office

↓

Authorization as a Radiation Worker

↓

Issue of a Luminess Badge dosimeter

↓

(Only when using X-ray devices)
Instruction and Permission to use the device

↓

You can start radiation work.

*Health Checkup and issuance of a Luminescence Badge dosimeter are not required for the “X-AB” users.

Procedures required before being authorized to use radioisotopes / radiation facilities

新規放射線取扱者に関する手続き

* 放射線取扱者登録管理システム (UTRadMS) にて各自で手続きが必要

* individual application / reservation on UTRadMS system

* 登録申請 **(1)** * Application for registration

Submission of health checkup inquiry required before the health checkup.

予め問診に要回答

* 健康診断 **(2)** * **Health checkup for radiation workers**

(X-AB を除く) (except for X-AB users)

* 継続：年２回問診票 * **Submission of health checkup questionnaire TWICE A YEAR for continuation**

* 全学一括講習会 **(3)** **e-Learning** * UTokyo radiation course

(認定科目履修者は免除) 6 hours of e-Learning

理学部講習会 **(4) School of Science radiation course**

(本日の講習会) 毎年再教育 (X-AB は初年度のみ) (today's course) **Mandatory ANNUAL attendance** (X-AB users = only the first year)

認可申請 **(5,6)** Application for authorization

バッジ交付 (X-AB を除く) **(7)** Issue of badge dosimeter (except X-AB)

装置使用許可 (X線装置のみ) **(8)** Permission to use X-ray devices (only for X-rays)

使用前教育 On-site **instruction** from the X-ray device manager

各研究室の放射線担当教員を通じて手続きすること。

Consult the staff in charge for radiation-related matter **in your laboratory.**

Procedures required before being authorized to use radioisotopes / radiation facilities

新規放射線取扱者に関する手続き

＊ 放射線取扱者登録管理システム
(UTRadMS) にて各自で手続きが必要

＊ individual application / reservation on UTRadMS system

予め問診に要回答

Submission of health checkup inquiry required before the health checkup.

＊健康診断
(X-AB を除く)

＊継続：年２回問診票提出

＊Health checkup for radiation workers

(except for X-AB users)

＊**Submission of health checkup questionnaire TWICE A YEAR for continuation**

Scheduled medical checks in 2025

Thu. May 22 in Hongo campus
Mon. May 26 in Kashiwa campus
Thu. June 26 in Hongo campus
Wed. July 30 in Hongo campus

Reservation on UTRadMS system required
at latest 3 days in advance.
You should have answered the questionnaire
before the medical check.

■ **Flow Sheet for Radioisotope and Radiation Generating Equipment Users**

(Accelerators, SOR = Synchrotron Radiation Facilities, Nuclear Reactors etc.)

Accelerators, SOR (SR), Nuclear Reactors

Radiation Safety Manual to be downloaded

Application for registration as a radiation worker
by logging in to UTRadMS and proceed with the procedure

Application for registration

Health examination including blood test
(First of all, answer the inquiry on UTRadMS. Reservation is required at latest 3 days before the examination on the website of UTokyo Health Service Center.)

Health checkup

UTokyo Training Course
on UTRadMS (E-learning).
Take a "RIX Training Course."
Currently only RIX Training Course is available.
Exemption rules exist.

UTokyo radiation course

Departmental Course

in School of Science

SoS radiation course

Application to Radiation Management Office for authorization
by persons in charge of labs
After the completion of the requirements, inform the person in charge of your lab.

Application for authorization
via Laboratory Radiation Manger

Authorization as a radiation worker
at Radiation Management Office

Authorization

Issue of a Luminess badge dosimeter
from School Administrative Office

badge dosimeter

You can start radiation handling.

■ **Flow Sheet for X-ray Equipment (Categories C, D and E) Users**

X-CDE users

Application for registration as a radiation worker
by logging in to UTRadMS and proceed with the procedure

Application for registration

Health examination including blood test
(First of all, answer the inquiry on UTRadMS. Reservation is required at latest 3 days before the examination on the website of UTokyo Health Service Center.)

Health checkup

UTokyo Training Course
On UTRadMS (E-learning).
Take a "RIX Training Course."
Currently only RIX Training Course is available.
Exemption rules exist.

UTokyo radiation course

Departmental Course
Take a general course (which include explanations for X-ray usage) in School of Science.

SoS radiation course

Application to Radiation Management Office for authorization
by persons in charge of labs
After the completion of the requirements, inform the person in charge of your lab.

Application for authorization via Laboratory Radiation Manger

Authorization as a radiation worker
at Radiation Management Office

Authorization

Issue of a Luminess badge dosimeter
from School Administrative Office

badge dosimeter

Permission of the use of an X-ray equipment after receiving instruction from the equipment manager in your lab group.
Then you can start radiation handling.

local X-ray instruction
Permission to use X-ray devices

■ **Flow Sheet for X-ray Equipment (Categories A and B) Users**

X-AB users

Application for registration as a radiation worker
by logging in to UTRadMS and proceed with the procedure

Application for registration

UTokyo Training Course
on UTRadMS (E-learning)
Take a "RIX Training Course."
Currently only RIX Training Course is available.
Exemption rules exist.

UTokyo radiation course

Departmental Course
Take a general course (which include explanations for X-ray usage) in School of Science.

SoS radiation course

Application to Radiation Management Office for authorization
by persons in charge of labs
After the completion of the requirements, inform the person in charge of your lab.

Application for authorization
via Laboratory Radiation Manger

Registration as a radiation worker
at Radiation Management Office

Authorization

Permission of the use of an X-ray equipment after receiving instruction from the equipment manager in your lab group.
Then you can start radiation handling.

local X-ray instruction
Permission to use X-ray devices

Management of radiation workers

Check for qualifications of radiation workers

- Check for the qualifications of radiation workers every school year. (Renewal of authorization.)
- If the following conditions are not met, your qualification as a radiation worker will be discontinued. (You will no longer be authorized.) (except for users of X-AB-only.)

1. You have attended the SoS radiation course in the relevant school year.
2. You have undergone health check by submitting the radiation worker health checkup questionnaire online on the UTRadMS system twice in the relevant year.