Chap. 5

Role of the Radiation Protection Officer

CHAPTER • 5

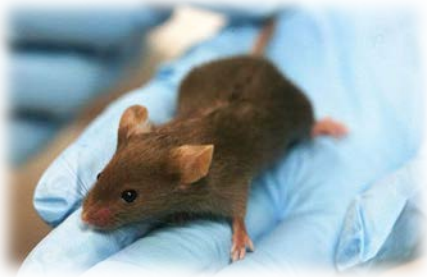
THE ROLE OF THE RADIATION PROTECTION OFFICER

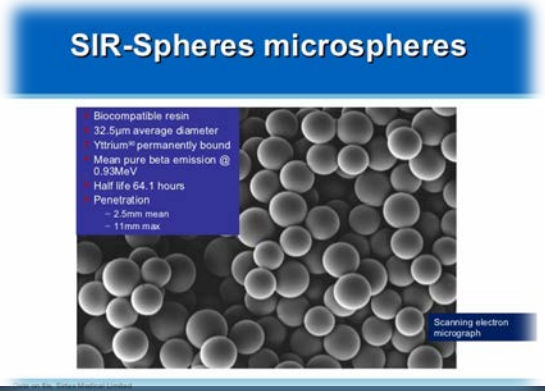
Course goals

- *Understand the legal foundations of the job of radiation protection officer (RPO).*
- *Have a general understanding of the RPO's duties.*
- *Understand personnel training requirements.*

Prevention against**contamination** from liquid, gaz, dust, airborne particles…

Confine radioactive substances in dedicated laboratories / sectors
Confine/protect the person





The concept of an officer is established in **Article 16 of the law on Radiation Protection.**

The duties must be set in writing by the licence holder who takes on radiation protection responsibility in the company (**ORaP, art. 132**).

RPO helps the licence holder and gives advices on radiation protection organisation.

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Département fédéral de l'intérieur DFI
Office fédéral de la santé publique OFSP
Unité de direction Protection des consommateurs

Division Radioprotection
www.str-rad.ch

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Directive L-03-04

Tâches et devoirs de l'expert en matière d'utilisation des rayonnements ionisants

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Eidgenössisches Departement des Innern EDI
Bundesamt für Gesundheit BAG
Direktionsbereich Verbraucherschutz

Abteilung Strahlenschutz
www.str-rad.ch

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Merkblatt L-03-04

Aufgaben und Pflichten des SV im Bereich der Anwendung ionisierender Strahlung

Rôle de l'expert en radioprotection

Dans les tableaux ci-dessous, ces deux domaines ont été distingués :
A Installations génératrices de radiations ionisantes
B Utilisation des sources radioactives

Remarque :
Cette liste n'est pas exhaustive. Elle recense les activités principales de l'expert, prenant en compte non seulement les tâches établies par la loi, mais aussi les exigences spécifiques des entreprises.

5.1 Tâches générales

	A	B
Conseils au titulaire de l'autorisation et au personnel en matière de radioprotection	✓	✓
Désignation – par des instructions écrites fondées sur les normes et directives – des personnes exposées aux rayonnements dans l'exercice de leur profession et qui doivent être soumises aux contrôles dosimétriques	✓	✓
Contrôle du respect des directives en matière de radioprotection et des conditions d'autorisation (contrôles du fonctionnement des appareils, mesures de construction, indications des locaux)	✓	✓
Vérification que le comportement des personnes exposées aux rayonnements dans l'exercice de leur profession soit conforme aux règles de radioprotection (p.ex. comportement dans les secteurs de travail, utilisation de couples écran-film adéquats)	✓	✓
Elaboration d'informations pour les patients, en collaboration avec le médecin qualifié	✓	✓

5.2 Tâches administratives et organisationnelles (ORaP art. 132)

	A	B
Etablissement pour l'entreprise d'instructions concernant : - les comportements conformes aux règles de radioprotection - les méthodes de travail - les procédures lors d'incidents (cf. 5.6)	✓	✓
Suivi et coordination des autorisations, interlocuteur auprès des autorités	✓	✓
Organisation et surveillance de la dosimétrie des personnes, enregistrement des doses déclarées mensuellement (ORaP, art. 42-43, annexe 5 ; directives de l'OFSP L-06-01 et R-06-03)	✓	✓
- externe (irradiation sur le corps entier et sur des parties du corps)	✓	✓
- interne (surveillance d'incorporation par des mesures de tri)		✓
(Vérification en cas de surdoses, maintien de l'obligation de port, mesures à prendre lors de dépassements réguliers des doses limites)	✓	✓
Contrôle des commandes de substances radioactives		✓
Réglementation du transport de substances radioactives à l'intérieur de l'entreprise (Osrou art. 16)		✓

RPO's duties must be set in writing by the authorization holder who takes on radiation protection responsibility in his/her company (ORaP, Art. 132)

RPO may delegate some of his/her duties

<u>The following tasks relate specifically to the RPO</u>:

- outfitting (and also planning) of working areas
- organizing radiation protection and managing working areas
- monitoring and supervision of working areas and working methods
- managing administrative tasks
- communication with the supervising authority
- basic training and continuing education of collaborators in radiation protection practices.

ORaP

Section 3: Duties of the Licence Holder

Art. 132 Organizational duties

[1] The licence holder must issue internal directives concerning working methods and protective measures and monitor compliance.

[2] The licence holder shall specify in writing the powers of the various line managers and radiological protection experts, and of persons handling radiation sources. Experts shall be granted the power to intervene wherever necessary on safety grounds.

[3] The licence holder must ensure that all persons working in the enterprise are appropriately informed about the health risks that may arise from handling ionising radiation at the workplace.

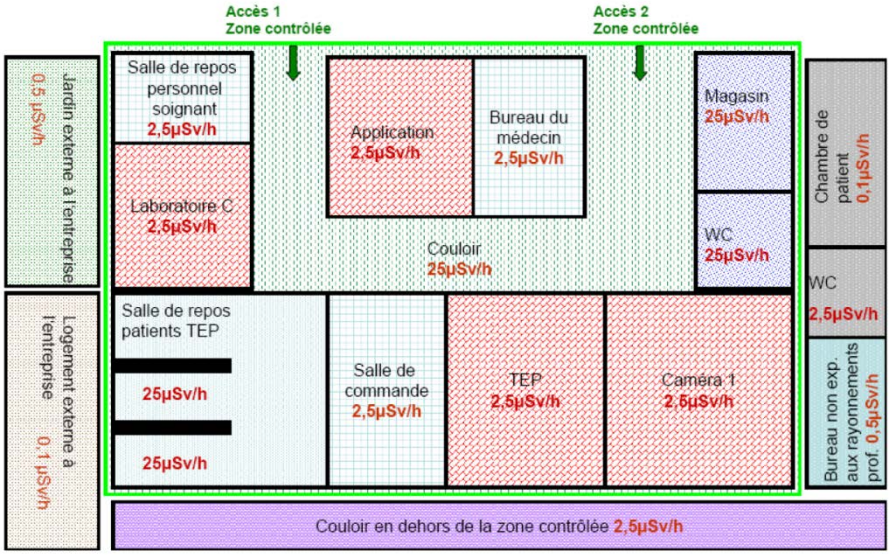
[4] If the licence holder deploys persons from service companies or other enterprises as occupationally exposed persons, these enterprises must be apprised of the relevant radiological protection regulations.

1.Outfitting

In terms of outfitting the working areas, the RPO'S duties are the following:

•designation of working areas
•organizing working areas, such as: distribution, outfitting, shielding
•establishing effective working methods from a radiation protection perspective
•acquisition and maintenance of radiation protection measuring instruments;
•acquisition of protective gear (apron, thyroid shields, gloves, white coat…). The RPO verifies that protective gear is available, in sufficient quantities, and is correctly and systematically used.
•preparation of internal guidelines with respect to radiation protection, as well as measures to take in case of accident or fire. The RPO ensures that these instructions are known and applied by the individuals involved.

Directive L-07-04
Valeurs directrices pour les débits de dose ambiante dans les services de médecine nucléaire



2. Organization and management

In terms of organizing and managing radiation protection, the RPO has the following duties:

- designate those individuals having occupational exposure to ionizing radiation
- organize personal monitoring. This involves, on the one hand, ensuring that everyone exposed to external radiation wears a dosimeter, and, on the other hand, defining any internal dosimetry needs and establishing necessary screening measurements for internal contamination
- declare to the Suva anyone having occupational exposure to ionizing radiation to ensure medical supervision
- organize and manage purchasing, transport, receiving, storage and disposal of radioactive substances
- manage radioactive waste
- manage laboratory waste water

organize maintenance and monitoring of installations

3. Monitoring and supervision

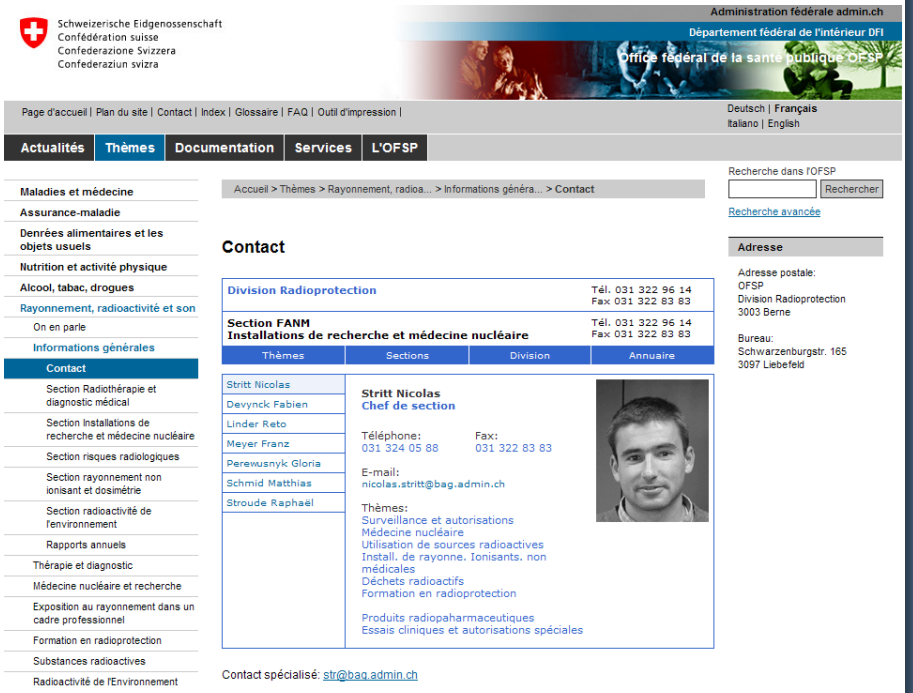
In terms of monitoring and supervising working areas and working methods, the duties of the RPO are the following:

• analyze results of personal dosimetry from individuals with occupational exposure to ionizing radiation and remain in regular communication with those individuals regarding those results
• monitor installations and working areas for contamination and external irradiation
• check shielding and dose rates
• monitor the integrity of sealed radioactive sources
• supervise trials or any work involving any special risks
• regular monitoring in working sectors, mainly in the laboratories
• monitor the stability of installations
• supervise the behavior of individuals without occupational exposure to ionizing radiation (reception, repair services, visitors, etc).

4. Administration

In terms of radiation protection administration, the RPO has the following duties:

- provide information and internal training for individuals having occupational exposure to ionizing radiation
- update paperwork concerning the acquisition, use and elimination or disposal of radioactive substances
- manage authorizations for using ionizing radiation
- update personal dosimetry documents



5. Communication with the supervising authority

Swiss Federal Office of Public Health (FOPH)
Swiss Accident Insurance Fund (SUVA)
Swiss Federal Nuclear Safety Inspectorate (ENSI)

The RPO must immediately contact the supervising authority in the following situations:

- change in authorization conditions (changes concerning the installation, data involved with the building and the construction of the installation or even the area where radioactive sources are stored)
- purchasing and use of new radiological installations
- exceeding any dose limit values
- radiological incident or accident
- clinical trials with radiation
- suppression of working sectors (stop of activity)
- change of RPO.

Requests to change the conditions of an authorization must be made prior to any change and modifications must not occur until authorization has been received.

6. Training in radiation protection

The training of individuals who may be exposed to radiation is mandated by Article 6 of the law on radiation protection and the training methods are described in Articles 11 through 22 of ORaP. Details of this training are established in a departmental technical ordinance. Training targets the following objectives:

- acquiring the necessary basic knowledge for understanding the risks associated with radiation and the means of protection
- acquiring the basic principles of radiation protection and practical methods destined to protect workers, patients, the general public and the environment
- acquiring knowledge of the legislation and administrative procedures linked to using ionizing radiation

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Devoir d'annonce à l'autorité de surveillance

Le titulaire de l'autorisation est tenu d'annoncer à l'autorité de surveillance :

Avant leur entreprise :

Informations de base
- Changement d'adresse
- Changement d'expert (formulaire, données complètes)

Spécifications
- Nucléide supplémentaire
- Activité supérieure / inférieure
- Sources supplémentaires (import)
- Élimination de sources
- Nouveau secteur de travail / lieu de stockage
- Abandon d'un secteur de travail / lieu de stockage (libération formelle)
- Nouvelle installation RX / remplacement d'une installation RX
- Abandon / déplacement d'une installation RX

Charges
- Réalisation des charges de l'autorisation
- Réalisation des charges, mesures suite à un audit

Déclaration annuelle (formulaire)
- Utilisation de substances radioactives non scellées
- Rejets de déchets dans l'environnement
- Résultats des mesures de tri
- Emplacement des sources de haute activité

Lors d'évènements :
- Défaillance
- Perte de source
- Contamination de personne (si un dépassement de dose n'est pas exclu)
- Rejet non autorisé dans l'environnement

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Calibration and thershold settings on instruments

- CS
- detection limits
- background constraints
- influence of additional parameters

- sorting measurements (for some radionuclide)

Summary:

- *The idea of an officer is established in Article 16 of the law on Radiation Protection.*
- *His or her duties must be set in writing by the authorization holder who takes on radiation protection responsibility in his/her company.*
- *The radiation protection officer (RPO's) main tasks are:*
  - *identifying radiation protection problems*
  - *outfitting working sectors*
  - *organizing radiation protection and managing laboratories*
  - *monitoring working areas and supervising working methods*
  - *administrative tasks, communicating with the supervising authority*
  - *training those individuals with occupational exposure to ionizing radiation*
- *Radiation protection training is defined in the Ordinance on Radiation Protection (ORaP). Details are fixed in a technical Ordinance.*

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THE ROLE OF THE RADIATION PROTECTION OFFICER

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Practice questions

1. Why must the duties of the RPO figure in a written job description?
2. What types of methods does the RPO have at his/her disposal for ensuring application of radiation protection rules in his/her company?
3. How can you ensure the adequate radiation protection training of foreign PhD students coming to complete their dissertation in your department?
4. What is the minimum training needed for an individual working as a laboratory cleaner?
5. Prepare a plan for providing initial information on radiation protection to give to new collaborators coming to work in your department.
6. Who can you ask for information on training opportunities in radiation protection specific to a particular application?