Regulations on Radiation Protection and Use of Radiation (Radiation Protection Regulations)

Chapter I Introductory provisions

Section 1 Purpose

The purpose of these regulations is to ensure the proper use of radiation, prevent harmful effects of radiation on human health and contribute to the protection of the environment.

Section 2 Scope

The regulations apply to any manufacture, import, export, transfer, possession, installation, use, handling and extraction of radiation sources.

The regulations also cover human activity which in itself involves elevated levels of natural ionising radiation from the environment or which leads to such radiation. This will include inter alia radon in existing buildings and premises where people may be present.

The regulations do not apply to

(a) radon and elevated levels of other natural ionising radiation in dwellings and holiday homes in which the owner lives or stays
(b) employers obligations with regard to radon levels in the workplace
(c) transport of radiation sources outside a closed area
(d) electrical appliances and components that unintentionally produce x-ray radiation provided the dose in normal use does not exceed 1 μSv/h from accessible surfaces, or that maximal energy of the radiation produced does not exceed 5 keV
(e) use of consumer products containing weak non-ionising radiation sources unless such sources are covered by section 4(j).

The following radiation sources are exempted from requirements stated in Section 8, Subsection one, Paragraphs j) and r), and Sections 11, 12, 16, 17 and 26.

(a) use of smoke detectors containing less than 40 kBq Am-241
(b) use of other permitted consumer products containing radioactive substances
(c) welding electrodes containing thorium
(d) depleted uranium used as balancing weights or shielding material.

Where specifically stated in the regulations, other radioactive radiation sources are also exempt from the requirements stated in Section 8, Subsection one, Paragraph r), Sections 12, 16, 17 and 26 provided the activity content does not exceed the exemption limits in the table in the annex. The exemption limits in the table refer to maximum specific activity (Bq/g)/activity (Bq) in a source, alternatively the total activity handled at any time by individuals. Exemption from the requirements mentioned requires either that total activity or specific activity is lower than or equal to the exemption limit.

For work with open radioactive radiation sources in laboratories, the exemption limits will apply to the individual laboratory. Where work involves various radionuclides at the same time, the sum of the ratio between the total activity for each radionuclide and the corresponding exemption limit must be lower than or equal to 1. This is illustrated by the following example:

$$\sum_K \frac{A_K}{A_{E,K}} \leq 1, \qquad or \qquad \sum_K \frac{C_K}{C_{E,K}} \leq 1$$

where

A_k = activity of radionuclide k
$A_{E,K}$ = exemption limit of activity of radionuclide k
C_K = specific activity of radionuclide k
$C_{E,K}$ = exemption limit of specific activity of radionuclide k.

Section 3 Territorial scope

On Svalbard and Jan Mayen the Regulations of 9 May 2003 no. 568 concerning Application of the Act on Radiation Protection and Use of Radiation apply. In addition, the provisions of chapter IV in this regulation apply to Svalbard and Jan Mayen. The same is the case for section 34 in this regulation in relation to occupational exposure.

Section 4 Definitions

In these regulations

(a) *activity:* The intensity of a radioactive radiation source expressed as the number of nuclear transformations (disintegrations) per unit of time. Stated in units of becquerel (Bq);
(b) *consumer product* : object or appliance intended for use by consumers;
(c) *orphan radiation source* : a radiation source that is not under the control of a public authority, either because it has never been so, or because it has been abandoned, lost, misplaced, stolen or transferred without authorization or notification;
(d) *medical use of radiation* : the application of radiation to persons for the purpose of medical examination or treatment, in occupational medical examinations, in screening programmes, in forensic examinations, in insurance assessments or in research programmes;
(e) *nuclear medicine* : the application of open radioactive radiation sources in the form of radiopharmaceuticals for medical diagnostic or treatment purposes;
(f) *radioactive radiation source* : a radiation source containing a radioactive substance, i.e. a substance that emits alpha-, beta- or gamma radiation;
(g) *sealed radioactive radiation source* : a radioactive substance that is sealed in a capsule in order to prevent leakage of the radioactive substance to the surroundings;
(h) *open radioactive radiation source* : a radioactive substance that is not sealed;
(i) *solarium:* an appliance with one or more ultraviolet radiation sources designed for irradiation of the skin;

(j) *strong non-ionising radiation sources:* sources which may lead to exposure of persons and which at the same time exceed limits set in Guidelines for limiting exposure to non-ionising radiation from the International Commission on Non-Ionizing Radiation Protection;
(k) *IPL*: intense pulsed light, intense pulsed visible light, included in combinations with radiofrequent, ultraviolet or infrared radiation;
(l) *laser pointer*: a handheld laser, battery operated or with other separate power supply, intended to be held in the hand and to point out an object on a distance;
(m) *radiation dose / dose* : the amount of energy absorbed per unit mass in an exposed individual or material from ionising radiation;
(n) *screening* : systematic examination of a large group of symptom-free persons in order to identify their state of health in relation to a particular disease;
(o) *representative dose* : dose value, determined by the undertaking itself, in x-ray diagnostics where the dose value is based on the average of dose measurements of a given number of patients using a particular x-ray appliance in respect of a particular x-ray examination where a standard examination protocol is used;
(p) *representative activity:* the average value of administered activity, determined by the undertaking itself, in a typical nuclear medical examination. The representative activity is based on the average value of activity administered to a group of adult patients using a standard procedure and a well-functioning system;
(q) *diagnostic reference value / reference level:* an established value used in the optimisation of patient doses for examinations;
(r) *exemption limits:* limits, expressed in activity and/or specific activity, at which a radioactive substance may be exempted from the entire Radiation Protection Regulations or parts thereof;
(s) *occupational exposure:* exposure incurred by employees in the course of their occupation, where the radiation source or exposure situation is an expectable part of, and is connected to, the practice of that occupation;
(t) *radon level:* the concentration of radon in the air determined according to the measurement procedure in effect at any time as prescribed by the Norwegian Radiation Protection Authority;
(u) *employer*: employer as defined in section 1-8 (2) of Act of 17 June 2005 No. 62 relating to Working Environment, Working Hours and Employment Protection, etc.;
(v) *harmonised standard:* technical specifications adopted by European standardisation organisations in conformity with a mandate from the European Commission and the EFTA countries. These standards are published in the Official Journal of the European Union. Norwegian standards that are "harmonised standards" are published by the Norwegian Standards Association or the Norwegian Electrotechnical Committee.

For other definitions, see section 3 of Act of 12 May 2000 No. 36 on Radiation Protection and Use of Radiation (Radiation Protection Act).

Chapter 1I General provisions on ionising and non-ionising radiation

Section 5 Justification and optimisation