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COUNCIL DIRECTIVE 96/29/EURATOM

of 13 May 1996

laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation

(OJ L 159, 29.6.1996, p. 1)

Corrected by:

▶<u>C1</u> Corrigendum, OJ L 314, 4.12.1996, p. 20 (96/29)

COUNCIL DIRECTIVE 96/29/EURATOM

of 13 May 1996

laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation

THE COUNCIL OF THE EUROPEAN UNION.

Having regard to the Treaty establishing the European Atomic Energy Community, and in particular Articles 31 and 32 thereof,

Having regard to the proposal from the Commission, drawn up after obtaining the opinion of a group of persons appointed by the Scientific and Technical Committee from among scientific experts in the Member States,

Having regard to the opinion of the European Parliament (¹),

Having regard to the opinion of the Economic and Social Committee $(^2)$

Whereas Article 2b of the Treaty provides for the establishment of uniform basic safety standards to protect the health of workers and of the general public;

Whereas Article 30 of the Treaty defines the 'basic standards' for the protection of the health of workers and the general public against the dangers arising from ionizing radiation as:

(a) maximum permissible doses compatible with adequate safety;

(b) maximum permissible levels of exposure and contamination;

(c) the fundamental principles governing the health surveillance of workers;

Whereas Article 33 of the Treaty requires each Member State to lay down the appropriate provisions, whether by legislation, regulation or administrative action, to ensure compliance with the basic standards which have been established and shall take the necessary measures with regard to teaching, education and vocational training;

Whereas in order to perform its task the Community laid down basic standards for the first time in 1959 pursuant to Article 218 of the Treaty by means of Directives of 2 February 1959 laying down the basic standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiations (3); whereas the Directives were revised in 1962 by Directive of 5 March 1962(4), in 1966 by Directive 66/45/Euratom (5), in 1976 by Directive 76/579/Euratom (6), in 1979 by Directive 79/343/Euratom (7), in 1980 by Directive 80/836/Euratom (8) and in 1984 by Directive 84/467/Euratom (9);

Whereas the basic standards directives have been supplemented by Council Directive 84/466/Euratom of 3 September 1984 laying down basic measures for the radiation protection of persons undergoing medical examination or treatment (10); Council Decision 87/600/Euratom of 14 December 1987 on Community arrangements for the early exchange of information in the event of a radiological emergency (11); Council Regulation (Euratom) No 3954/87 of 22 December 1987 laying down maximum permitted levels of radioactive contamination of foodstuffs and of feedingstuffs following a nuclear accident or any other case of radiological emergency (1^2) ; Council Directive 89/618/Euratom of 27 November 1989 on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency (13); Council Directive 90/641/Euratom of 4

- (2) OJ No C 108, 19. 4. 1993, p. 48.
 (3) OJ No 11, 20. 2. 1959, p. 221/59.
 (4) OJ No 57, 6. 7. 1962, p. 1633/62.
 (5) OJ No 216, 26. 11. 1966, p. 3693/66.
 (6) OJ No L 187, 12. 7. 1976, p. 1.
 (7) OJ No L 83, 3. 4. 1979, p. 18.
 (8) OJ No L 246, 17. 9. 1980, p. 1.
 (9) OJ No L 265, 5. 10. 1984, p. 4.
 (10) OJ No L 265, 5. 10. 1984, p. 1.
 (11) OJ No L 371, 30. 12. 1987, p. 76.
 (12) OJ No L 357, 7. 12. 1989, p. 19.
 (13) OJ No L 357, 7. 12. 1989, p. 31.
- (13) OJ No L 357, 7. 12. 1989, p. 31.

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OJ No C 128, 9. 5. 1994, p. 209. OJ No C 108, 19. 4. 1993, p. 48.

December 1990 on the operational protection of outside workers exposed to the risk of ionizing radiation during their activities in controlled areas (1); Council Directive 92/3/Euratom of 3 February 1992 on the supervision and control of shipments of radioactive waste between Member States and into and out of the Community (2); and Council Regulation (Euratom) No 1493/93 of 8 June 1993 on shipments of radioactive substances between Member States (³);

Whereas the development of scientific knowledge concerning radiation protection, as expressed in particular in Recommendation No 60 of the International Commission on Radiological Protection, makes it convenient to revise the basic standards and to lay them down in a new legal instrument;

Whereas the basic standards are of special significance as to ionizing radiation risks with regard to other Directives concerned with other types of risks and it is important to make progress in applying them in a uniform manner within the Community;

Whereas it is desirable to take into account in the scope of the basic standards the practices or work activities which may result in a significant increase in exposure for workers and members of the public, which cannot be disregarded from the radiation protection point of view, due to ionizing radiation from artificial radiation sources or natural radiation sources, as well as appropriate protection in cases of intervention;

Whereas the Member States, in order to ensure compliance with the basic standards, are required to submit certain practices involving a hazard from ionizing radiation to a system of reporting and prior authorization or to prohibit certain practices;

Whereas a system of radiation protection for practices should continue to be based on the principles of justification of exposure, optimization of protection and dose limitation; whereas, limitations of doses must be fixed taking into account the particular situation of the different groups of persons exposed such as workers, apprentices, students and members of the public;

Whereas the operational protection of exposed workers, apprentices and students requires the implementation of measures at the workplace; whereas these measures must include prior evaluation of the hazard involved, classification of workplaces and workers, monitoring of areas and working conditions and medical surveillance;

Whereas the Member States should be required to identify work activities involving significantly increased levels of exposure for workers or members of the public to natural radiation sources which cannot be disregarded from a radiation protection point of view; whereas the Member States should take appropriate protective measures in respect of the work activities declared to be of concern;

Whereas the operational protection of the population in normal circumstances requires the establishment by Member States of a system of inspection to keep under review the radiation protection of the population and to check compliance with the basic standards;

Whereas the Member States should be prepared for the likelihood of potential radiological emergencies on their territory and should cooperate with other Member States and with third countries in order to facilitate the preparedness and management of those situations;

Whereas the basic standards directives as last revised by Directive 84/467/Euratom should be repealed with effect from the date that this Directive becomes applicable,

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⁽¹⁾ OJ No L 349, 13. 12. 1990, p. 21. Directive as amended by the 1994 Act of

Accession. OJ No L 35, 12. 2. 1992, p. 24.

OJ No L 148, 19. 6. 1993, p. 1.

HAS ADOPTED THIS DIRECTIVE:

TITLE I

DEFINITIONS

Article 1

For the purpose of this Directive, the following terms have the meaning hereby assigned to them.

Absorbed dose (D): the energy absorbed per unit mass

$$D = \frac{d\overline{\in}}{dm}$$

Where

- $d\overline{\in}$ is the mean energy imparted by ionizing radiation to the matter in a volume element,
- dm is the mass of the matter in this volume element.

In this Directive absorbed dose denotes the dose averaged over a tissue or an organ. The unit for absorbed dose is the gray.

Accelerator: apparatus or installation, in which particles are accelerated, emitting ionizing radiation with an energy higher than 1 mega-electron volt (MeV).

Accidental exposure: an exposure of individuals as a result of an accident. It does not include emergency exposure.

Activation: process through which a stable nuclide is transformed into a radionuclide by irradiating with particles or high-energy gamma rays the material in which it is contained.

Activity (A): the activity, A, of an amount of a radionuclide in a particular energy state at a given time is the quotient of dN by dt, where dN is the expectation value of the number of spontaneous nuclear transitions from that energy state in the time interval dt:

$$A = \frac{dN}{dt}$$

The unit of activity is the becquerel.

Apprentice: a person receiving training or instruction within an undertaking with a view to exercising a specific skill.

Approved dosimetric service: a body responsible for the calibration, reading or interpretation of individual monitoring devices, or for the measurement of radioactivity in the human body or in biological samples, or for assessment of doses, whose capacity to act in this respect is recognized by the competent authorities.

Approved medical practioner: a medical practitioner responsible for the medical surveillance of category A workers, as defined in Article 21, whose capacity to act in that respect is recognized by the competent authorities.

Approved occupational health services: a body or bodies to which may be assigned responsibility for the radiation protection of exposed workers and/or medical surveillance of category A workers. Its capacity to act in that respect is recognized by the competent authorities.

Artificial sources: radiation sources other than natural radiation sources.

Authorization: a permission granted in a document by the competent authority, on application, or granted by national legislation, to carry out a practice or any other action within the scope of this Directive.

Becquerel (Bq): the special name of the unit of activity. One becquerel is equivalent to one transition per second:

 $1 \ Bq \ = \ 1 \ s^{-1}$

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Clearance levels: values, established by national competent authorities, and expressed in terms of activity concentrations and/or total activity, at or below which radioactive substances or materials containing radioactive substances arising from any practice subject to the requirement of reporting or authorization may be released from the requirements of this Directive.

Committed effective dose: $(E(\tau))$: the sum of the committed organ or tissue equivalent $\blacktriangleright C1$ doses \blacktriangleleft $(H_T(\tau))$ resulting from an intake, each multiplied by the appropriate tissue weighting factor w_T . It is defined by:

$$E(\tau) = \sum_{T} w_{T}H_{T}(\tau)$$

In specifying $E(\tau)$, τ is given in the number of years over which the integration is made. The unit for committed effective dose is the sievert.

Committed equivalent dose $(H_T(\tau))$: the integral over time (t) of the equivalent dose rate in tissue or organ T that will be received by an individual as a result of an intake. It is given by:

$$H_T(\tau) = \int_{t_0}^{t_0 + \tau} \dot{H}_T(t) dt$$

for an intake at time t_0 where

- $\dot{H}_{T}(t)$ is the relevant equivalent dose rate in organ or tissue T at time t,
- $-\tau$ is the time over which the integration is performed.

In specifying $H_T(\tau)$, τ is given in years. When τ is not given, a period of 50 years is assumed for adults and up to age 70 for children. The unit for committed equivalent dose is the sievert.

Competent authorities: any authority designated by a Member State.

Controlled area: an area subject to special rules for the purpose of protection against ionizing radiation or of preventing the spread of radioactive contamination and to which access is controlled.

Disposal: the emplacement of waste in a repository, or a given location, without the intention of retrieval. Disposal also covers the approved direct discharge of wastes into the environment, with subsequent dispersion.

Dose constraint: a restriction on the prospective doses to individuals which may result from a defined source, for use at the planning stage in radiation protection whenever optimization is involved.

Dose limits: maximum references laid down in Title IV for the doses resulting from the exposure of workers, apprentices and students and members of the public to ionizing radiation covered by this Directive that apply to the sum of the relevant doses from external exposures in the specified period and the 50-year committed doses (up to age 70 for children) from intakes in the same period.

Effective dose (E): the sum of the weighted equivalent doses in all the tissues and organs of the body specified in Annex II from internal and external irradiation. It is defined by the expression:

$$E ~=~ \sum_T ~w_T H_T ~=~ \sum_T ~w_T \sum_R ~w_R ~D_{T,R}$$

where

- $D_{T,R}$ is the absorbed dose averaged over tissue or organ T, due to radiation R,
- w_R is the radiation weighting factor and
- w_T is the tissue weighting factor for tissue or organ T.

The appropriate w_T and w_R values are specified in Annex II. The unit for effective dose is the sievert.

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