Survey on the implementation of the "justification", "optimisation" and "limitation of doses" radiological principles in national regulations in Europe

SLOVAKIA

1 The implementation of European Directives

1. *Since when have the European Directives 96/29 and 97/43 been implemented in your country?*

Both of the directives have been partially implemented into the Act on Protection of the Human Health (Act N0 470/2000) and the Regulation of the Ministry of Health N_0 12/2001 on the Requirements for Securing of the Radiation Protection, in the year 2000.

2. *If they are not implemented, is it expected and when?*

The full implementation of both Directives is expected in June 2006.

2 Justification principle

1. *What is the exact wording of the justification principle in the Law?*

Activities resulting in irradiation mean any human activity that may increase irradiation of persons from pre-existing sources of ionizing radiation, except of the process of irradiation in case of a radiation incident or radiation accident; they must be justified, and the risk of irradiation must be balanced by the expected benefits for individual persons or the society.

2. *Which practices are explicitly named as unjustified or forbidden?*

It shall be prohibited to add radioactive substances in producing toys and articles of personal use, as well as to import or export such goods.

3. *Which regulatory body(ies) is (are) responsible to determine if a practice is justified or not?*

The Public Health Authority of Slovak Republic

3 Optimisation principle

1. *Could you give is the exact wording (citation) of the optimisation principle (ALARA) as defined in the Law or national regulation?*

Anybody who performs activities resulting in irradiation shall be liable to secure that the number of irradiated persons, the level and the probability of their irradiation be permanently kept at a level as low as may be reasonably achieved upon accounting for economic and social aspects. The technical and organizational requirements, limit values and procedures to provide evidence for reasonably achievable levels of radiation protection shall be provided by the generally binding legal regulation to be issued based on Section 17y(b).

2. *Does the national regulation give a description on the practical way to implement the optimisation principle (e.g. need to perform dose prediction and to establish dose objectives, need to perform real-time dose follow-up, need to write feedback experience report, etc)?*

Yes, the national regulation does give a description

Paragraph 4

Technical and organisational requirements, basic values and procedures used for the demonstration of a rationally accessible level of radiation protection.

(1) The technical and organisational requirements for the demonstration of a rationally accessible level of radiation protection includes:

a) before the commencement of activity leading to irradiation [9)]; the evaluation and comparison of variant solutions of radiation protection that come into consideration upon the intended activity, the distribution of personal doses, collective doses and doses in relevant critical groups of the population with costs for protective measures, usually according to the procedures specified in subparagraph 4;
b) upon the execution of activity leading to irradiation [9)]; regular analysis of the doses received in relation to the acts performed, the consideration of further potential measures for the provision of radiation protection and comparison with analogical, already executed and, at the same time, socially acceptable activities;
c) before the commencement and upon the performance of an intervention [15)], the evaluation of variant solutions and the selection of a measure that, with its means of execution, range and duration, brings the highest net contribution, with the use of the procedures specified in subparagraph 4.

(2) Reference level of irradiation intended for the demonstration of a rationally accessible level of radiation protection in activities leading to irradiation [9], are as follows:

a) the collective effective dose for staff working with sources of ionising radiation is 20 man mSv for an individual working activity or 100 man mSv in a calendar year and the collective effective dose of the population is 1 manSv in a calendar year with respect to the release of radioactive substances into the environment, [8]
b) the effective dose of a person working with sources of ionising radiation is 1 mSv in a calendar year,
c) the effective dose of a person different from those specified in letter b), is 10 □Sv in a calendar year.

(3) The rationally accessible level of radiation protection is considered as sufficiently demonstrated if, even under expectable variations from the current operation [paragraph 2 letter h)], any of the basic values specified in subparagraph 2 cannot be exceeded, not even for one person.

(4) The rationally accessible level of radiation protection, is demonstrated through a procedure, upon which the costs for alternative measures intended for the enhancement of radiation protection are compared with the costs for the expected reduction of irradiation (hereinafter referred to as "contribution of a measure").
The rationally accessible level of radiation protection is considered to be demonstrated and the measure does not have to be executed, if the costs would be higher than the contribution of the measure. In regard to this procedure, the contribution of a measure is quantified in such a way that the reduction of the collective effective dose for staff working with sources of ionising radiation, or the population, is multiplied with a coefficient that is not lower than

a) SKK 2 million x man Sv^{-1}, for activities leading to irradiation, [9] where the effective dose of a person working with sources of ionising radiation does not exceed an average of 2 mSv in a calendar year,
b) SKK 5 million x man Sv^{-1}, for activities leading to irradiation, [9] where the effective dose of a person working with sources of ionising radiation is, on average, 2 to 5 mSv in a calendar year,
c) SKK 15 million x man Sv^{-1}, for activities leading to irradiation, [9] where the effective dose of a person working with sources of ionising radiation is, on average, 5 to 15 mSv in a calendar year,

d) SKK 20 million x man Sv^{-1}, for activities leading to irradiation, [9] where the effective dose of a person working with sources of ionising radiation is, on average, 15 to 30 mSv in a calendar year,

e) SKK 25 million x man Sv^{-1}, for activities leading to irradiation, [9] where the effective dose of a person working with sources of ionising radiation is, on average, 30 to 50 mSv in a calendar year,

f) SKK 20 million x man Sv^{-1}, for activities leading to irradiation, [9] where the effective dose of a critical group of the population for a particular activity is, on average, 0.02 to 0.1 mSv in a calendar year,

g) SKK 25 million x man Sv^{-1}, for activities leading to irradiation, [9] where the effective dose of a critical group of the population for a particular activity is, on average, 0.1 to 0.3 mSv in a calendar year,

h) SKK 30 million x man Sv^{-1}, for activities leading to irradiation, [9] where the effective dose of a critical group of population for a particular activity is, on average, 0.3 to 1 mSv in a calendar year,

i) SKK 2 million x man Sv^{-1}, for medical irradiation,

j) SKK 2 million x man Sv^{-1}, for irradiation by natural ionising radiation, [16]

k) SKK 10 million x man Sv^{-1}, for irradiation due to radiation accidents. [17]

(5) In 2001, the coefficients specified in subparagraph 4 will be used;
in further calendar years, they are multiplied by the consumer prices index expressing the general inflation rate. The Statistical Office of the Slovak Republic publishes the consumer price indexes in the Consumer Price Index of the Slovak Republic.

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[8] Paragraph 17s of Act of the National Council of the Slovak Republic No.272/1994 (Coll.), as amended by Act No. 470/2000 (Coll.)

[9] Paragraph 17f subparagraphs 2 and 4 of Act of the National Council of the Slovak Republic No. 272/1994 (Coll.), as amended by Act No. 470/2000 (Coll.)

[15] Paragraph 2 subparagraph 10 of Act of the National Council of the Slovak Republic No. 272/1994 (Coll.), as amended by Act No. 470/2000 (Coll.)

[16] Paragraphs 17d and 17e of Act of the National Council of the Slovak Republic No. 272/1994 (Coll.), as amended by Act No. 470/2000 (Coll.)

[17] Paragraph 2 subparagraph 23 of Act of the National Council of the Slovak Republic No. 272/1994 (Coll.), as amended by Act No. 470/2000 (Coll.)

3. *Does it exist a specific guidance to help operators / end-users in implementing the optimisation principle?*

No, it does not exist.

4 Dose limits

1. *Can you provide us with present regulatory dose limits established to reduce the probability of occurrence of stochastic effects?*

The dose limits are in accordance with the European Directive 96/29

2. *What are the legal dose limits to prevent public and workers from deterministic health effects?*

The system of radiation protection (dose limits) is in an accordance with the Directive mentioned above.

5. Dose constraints

1. *Here again, could you give is the exact wording (citation) of the Law or regulations where the concept of dose constraint is mentioned.*

Limit value means a parameter or a criterion for assessment of radiation protection that, when exceeded or not met, usually signals suspicion of the radiation protection being not optimized. (Act N_0 470/2000)

2. *In which domain (e.g. public dose, occupational dose, patient dose, etc) and by whom (regulatory body, operators, etc) are dose constraints implemented in your country?*

They are implemented in a public dose, a in a patience, as well as occupational dose by the Public Health Authority of Slovak Republic

3. *What are the corresponding values and rationales behind these values?*

See chapter 3 par.2

They could be both, source and job related. Yes, they are. It is not a fixed percentage of the dose limit.

4. *What is(are) the status(es) of dose constraint(s)?*

It is mandatory to use dose constraint, as stated by the Regulation of the Ministry of Health N_0 12/2001 on the Requirements for Securing of the Radiation_Protection

5. *What is effectively done if a constraint is exceeded?*

The Regulatory Body revaluates the optimisation of the activity and consecutevily takes appropriate measures.