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

SWEDEN

1 The implementation of European Directives

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

Since 2000 with some exemptions. Title VII on naturally occurring radioactivity has yet not been implemented.

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

A policy on naturally occurring radioactivity based on the BSS-directive will be presented in 2006. Work activities of interest have been identified but further investigations will be made in 2006. Regulations concerning aircraft crew will be in force during 2006.

2 Justification principle

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

The wording does not exist in the Law. Justification is a demand in a regulation from SSI.

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

To add intentionally radioactive substances to food, toys, jewellery or cosmetics.

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

Swedish Radiation Protection Authority (Besides, of course, political decisions on nuclear power and the decisions taken by medical practitioners for patients.)

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?*

In SSI FS 1998:4 is written:

§ 3 Anyone who conducts a practice with ionising radiation shall ensure that

1. the practice is justified by which is meant that the use of radiation gives a benefit that exceeds the estimated health detriment caused by the radiation,

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)?*

SSI FS 2000:1-5, SSI FS 2000:7-10 and SSI FS 2005:6

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

SSI FS 2000:5 and SSI FS 2005:6

4 Dose limits

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

We follow The Council Directive 96/29/EURATOM with a limit of effective dose of 50 mSv annual and in addition for 5 consecutive years an effective dose of 100 mSv. (SSI FS 1998:4 and SSI FS 1998:3)

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

We have the same limits for doses to parts of the body as the BSS directive.

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?*

SSI FS 1998:4

§ 6 In the process of planning a practice or in a single case, the Radiation Protection Institute has the right to establish a dose constraint, by which is meant an exposure restriction to individuals from a given source.

SSI FS 2000:3

Dose constraints

§ **16** An assessment of the radiation doses which relatives and members of the general public can be exposed to shall provide guidance for when a patient can be discharged from hospital after treatment. When discharging the patient it shall be unlikely that the effective dose

1. to any member of the general public will exceed 0.3 millisievert (mSv),
2. to children related to the patient will exceed 1 mSv and
3. to adults related to the patient will exceed 3 mSv or, for relatives aged 60 or more, will exceed 15 mSv.

Some values indicating when a patient can be discharged from hospital are provided in the general advice, clause 2.

§ **17** Before a patient is discharged from hospital, the physician who has conducted the treatment shall ensure that the patient or the person accompanying the patient, receives the information as stipulated in section 15 and expressed in the general advice, clause 2 and 3 as appropriate. The information shall be provided in writing and formulated so that it can be understood by a layman.

SSI FS 2000:4

§ **24** The radiation shielding of a therapy room shall be such that it is not likely that any member of the general public will receive an effective radiation dose exceeding 0.1 millisievert per year.

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?*

Public and occupational dose and by the regulatory body.

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

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

Dose constraint doesn't exist in the Law but is mandatory in SSI FS 2000:12 concerning release from Nuclear Certain Facilities.

5 § The effective dose to an individual in the critical group of one year of releases of radioactive substances to air and water from all facilities located in the same geographically delimited area shall not exceed 0.1 millisievert (mSv). The effective dose, which concerns the dose from external irradiation and the committed effective dose from internal irradiation, shall be integrated over a period of 50 years.

When calculating the dose to individuals in the critical group, both children and adults shall be taken into consideration. Dose coefficients that are to be used for intake and inhalation are specified in Appendix III in European Council directive 96/29/Euratom.

When the calculated dose is 0.01 mSv or more per calendar year, realistic calculations of radiation doses shall be conducted for the most affected area. The calculations shall be based on measured dispersion data and knowledge of the conditions within the most affected area for the period concerned.

The basis for the dose calculations and the methodology used to calculate the relationship between released activity and effective dose shall be presented to the Swedish Radiation Protection Authority for examination.

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

The operator should investigate the circumstances and take appropriate actions