

x	Location/Medium	Cont. Nr.	Rev.
YYYY/MM/DD	AAA	NNN	NN
2017/10/03	Teddington, UK	001	00
Results working group 'NORM in industry'			Page: 1

During the EU-NORM III symposium the working group 'NORM in industry' identified points that should be discussed on Wednesday 4th October 2017 in more detail. As basic topic the clarification of BSS implementation in EU MS / European countries was seen as a necessary discussion point.

Preliminary statements

1. The implementation of BSS in national law will result in different interpretations and formulations of the BSS in different countries. This has to be accepted as a part of cultural variety of Europe. Nevertheless, it results in inconsistencies in application of regulations and causes difficulties for industries.

Proposal: ENA should collect and publish a compilation of regulatory differences.

2. Clearance levels for discharge of naturally occurring radionuclides (NOR) into the environment do exist in only some countries.
 Quest: What specific clearance levels for discharge of NOR are established up to now? Can discharge values established in the regulatory framework for all (artificial) RN (as in Germany) applied for assessment of NOR-discharges?

Statements given yesterday:

- Scotland: exemption values for liquids and gases exist, but no reasonable scenario for K-40
- Czech: Clearance levels for NOR in liquids, no clearance levels for NOR in gases, no values for K-40
- Spain: No values for release of liquids and gases, K-40; new legislation is not clear yet. Case by case basis on basis of 0.3 mSv per year.
- [Germany: exemption values for liquids and gases exist, but they are originally intended for discharges from licensed practices (not for work activities)]

A clear approach to the regulation of liquids and gases that contain low levels of radionuclides is necessary for all stakeholders (industry, regulators and the public). This is currently not the case in many countries. A compilation of national approaches would be a helpful first step in producing best practice guidance and moving towards a harmonized approach.

Proposal: EC should establish discharge limits for NOR.

3. The role of potassium (K-40) in the system of RP has to be clarified.

Comment: ICRP stated that K-40 has not to be considered for internal exposure → K-40 should not a part of exemption values for discharge via air or water / K-40 has to be considered as a part of RP only in case of solid materials.

The following questions need clarification:

- Is waste with more than 10 Bq/g K-40 (Belgium 5 Bq/g) to be considered as NORM-waste? (Consequence: disposal of waste with radioactive contamination from foreign counties can be restricted / forbidden by EU MS)
- Has K-40 to be included in any determination of exemption levels if the summation rule is applied?
- Several potassium salts exceed the activity of 10 Bq/g K-40. Do these products need a declaration of radioactivity? (Or is the specification of the K-content sufficient?)

x	Location/Medium	Cont. Nr.	Rev.
YYYY/MM/DD	AAA	NNN	NN
2017/10/03	Teddington, UK	001	00
Results working group 'NORM in industry'			Page: 2

Potassium (K-40) is discussed as a radioactive material in some European countries. From a radiation protection point of view there is no relevant risk for members of the general public that constitutes a reason for regulation. We need more clarity.

Proposal: a working group of ENA should collect information from European countries and prepare a statement to be submitted to EC / IAEA / (others too?)

4. Steel industry Pb-210/Po-210: Clearance values or dose approach?
 - The blast furnace process results in release of Pb-210 and Po-210 to the atmosphere. Opinion from Germany: Release of particles is reduced by filter with high qualities.
 - Question: Because all planned exposure situations that are registered have to be taken into account for calculating the dose of the public, the dose limit of 1 mSv/a from release of a single plant seems not to be sufficient.
 - Former modellings (from C. Tanzi) gave Pb-210 long-reaching Pb-210 plumes from facilities in NL.
 - To what an extend a harmonization is reasonable?

5. Operational measurements:
 - The Netherlands: Measurements with handheld devices are used to determine whether the clearance level is met.
 - The level of assurance is 1 Bq/g?? which is hardly measurable by handheld devices for Pb-210/Po-210.
 - Higher clearance levels for Pb-210/Po-210
 - Surface contamination is a difficult approach for determination of NORM contamination

The inability of current handheld monitors to detect thin surface contaminations of Pb-210, Po-210 with activity concentrations in the order of a few 1 Bq/g of Pb-210/Po-210 causes problems with clearance of surfaces that cannot be sampled for analysis. Specific clearance levels for Pb-210/Po-210 contaminated surfaces should be set at a level that reflects risk.

6. Product declaration
 - Several materials with enhanced radioactivity (Abrasives, refractories) are not listed for the declaration of NORM in products; the manufacturers should be taken into responsibility

7. Information policies
 - The information policies in companies and from competent authorities to the public should be discussed
 - Statement for open information policies?
 - NORM awareness of important groups e.g. workers

Information of workers as an important group of concerned persons is required. The information about radiation and radiation protection should for at least integrated in the occupational work safety system.

The following items were not discussed in detail:

8. Radon levels

x	Location/Medium	Cont. Nr.	Rev.
YYYY/MM/DD	AAA	NNN	NN
2017/10/03	Teddington, UK	001	00
Results working group 'NORM in industry'			Page: 3

- Question: How to deal with radon levels, that can be clearly attributed to NORM?
- Should radon generally be considered as a particular part of the RP system (by applying 300 Bq/m³ reference value) or has such part, that can be attributed to NORM be considered as a part of dose estimation?

9. Graded approach

- Should the 'graded approach', be based only on dose estimations or would it be a more practical way to use activity concentrations?
- If dose estimations are done for external workers, should the dose restricted on the work that is done in industries mentioned on the "positive list(s)" or should other workplaces with similar exposure situations be included, too?