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International Approach to Legal Control on NORM and of Radioactivity in

Building Materials

A. Janssens

European Commission

Abstract

Natural radiation sources are within the scope of both the international standards (IAEA Safety Standards series 115) and of the Euratom Basic Safety Standards Directive (96/29). The international standards address radon at work (both "incidental" and "directly related to" the work), but consider NORM industries only as "any other practice specified by the regulatory authority", and put more emphasis on discharges of effluents and disposal of radioactive waste than on exposure at work e.g. from external exposure or inhalation of dust.

The European Directive introduced more specific radiation protection requirements with regard to natural radiation sources, for "work activities" involving naturally occurring radioactive materials, for radon at work, and for the exposure of aircrew to cosmic radiation. This was the basis for EU Member States to regulate industries processing materials with naturally occurring radionuclides (NORM). The Directive did not prescribe however how the protection of workers and members of the public should be regulated, and it was left to Member States to identify which industries were cause of concern. Radon in dwellings was excluded from the scope of the Directive (but addressed in Commission Recommendation 90/43/EURATOM). Both the international and the European standards reflected ICRP publication 60 (1990) and hence regarded in principle the exposure to natural radiation sources as an "intervention" situation, even though the concept of "work activities" in the European Standards is somehow in-between practices and interventions.

Publication 103 of ICRP (2007) has now introduced a distinction between three exposure situations (existing, planned and emergency exposure situations). Publication 104 has shed new light on the concepts of exclusion, exemption and clearance. These new recommendations have prompted a revision of the international standards and a revision of the Euratom BSS together with a recast with other radiation protection Directives.

Building materials were not explicitly addressed in the 1996 Directive, but the Group of Experts established under Article 31 Euratom established guidance for the control of radioactivity in building materials, and defined a radioactivity index for this purpose (Radiation Protection 112). The Experts also defined exemption and clearance levels for materials processed in NORM industries and for residues from these industries (Radiation Protection 122 part II). Building materials will now explicitly be included in the scope of the Euratom Basic Safety Standards. Also the international standards are being revised, along similar lines as the Euratom Directive, but these will not explicitly address building materials. While the new Euratom Basic Safety Standards are now close to a final draft, an outline of the resulting approach will be presented.