Oral 3.2

TRANSPORT OF NATURALLY OCCURRING RADIOACTIVE MATERIALS (NORM) IN FRANCE AND INVOLVED DOSES

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Transporting materials, products or wastes which contain naturally occurring radionuclides can lead to a significant exposure of workers. Exposure due to handling and storage of NORM is taken into account by French authorities through a specific regulation, the Ministerial order of May 25, 2005. This imposes on operators to assess the effective doses received by workers. Based on data presented by operators in ninety studies received by IRSN and French authorities, the aim of this presentation is to produce a synthesis of effective doses in excess of the natural background due to transport of NORM. IRSN selected among those ninety studies data on likely transported materials, products and wastes. IRSN constructed standard scenarii of exposure defining the characteristics of the transport (transported quantities, shielding) and the characteristics of the exposure (ambient dust concentration, distance from the NORM, transporting time, number of transports per year…).
Based on these data and, by taking into account external exposure and internal exposure by dust inhalation, IRSN assessed effective doses due to transport of NORM in France.
The following conclusions can be drawn:
- wastes are the materials which generally contain the highest activities of natural radionuclides;
- among all the radionuclides, the radium 226 seems to need a specific control;
- transport of NORM can lead to significant effective doses.
This study was presented during the IAEA Coordinated Research Program on the Appropriate Level of Regulatory Control for the Safe Transport of Naturally Occurring Radioactive Material (CRP NORM), and will be used to prepare French proposals for possible evolutions of the regulatory requirements applicable to the transport of NORM.