EUROPEAN RADIOECOLOGY ALLIANCE

September 30th, 2022 on-line event

Alliance webinar "NORM in aquatic systems" keynote.

Although the majority of already known NORM have been identified as solid waste, NORM also may occur in the liquid form as formation or process water. Investigations on continually operating industries demonstrate that liquid NORM may be easily dispersed and affect a larger area than solids, including a potential to cause impacts at great distances from discharge points. Therefore, environmental impact assessment (EIA) of liquid NORM is complex and often must be accomplished from the perspective of subsequent processes, leading to either radionuclide accumulation, or dilution, and any kind of related slurry, silt, sludge etc., and derived sediments including submerged riverine or marine tailings. Often NORM again is released in a liquid form from previously created solids as leakages, seepages etc. and the loop is closed. In addition, comparing with the terrestrial environment, aquatic ecosystems create more conducive chemical as well as physical environment for radionuclides mobilisation and migration, hence overall situation evaluation is additionally complicated by usually observed lack of equilibrium in natural decay series. Furthermore, a wide range of natural radionuclides activity concentrations have been observed in aquatic biota under normal conditions which makes it difficult to identify direct NORM impact and extrapolate information beyond specific sites.

Contrary to solid NORM where quantitative management criteria and limits are set, and only necessary interpretation must be done, NORM in liquid forms are not well regulated. In the most recent relevant European regulation, there were only qualitative requirements that oblige industry operators to apply some radiation protection measures when liquid NORMs are expected to occur, at least at the level of appropriate monitoring. EU Council Directive 2013/59/Euratom of 5th December 2013 (Laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation), addresses liquid NORM issues in a few instances, mainly in the context of authority control enforcement at the level of notification (art.25), as well as at the level of licensing (art. 28). There are neither reference limits nor any other quantitative criteria for the management and release to the environment of these liquids. Quantitative limits and final decision are left to the decision of a relevant regulatory body, following the vaguely defined criterion: "*take into account, where appropriate, the results of a generic screening assessment based on internationally recognised scientific guidance, where such an assessment has been required by the Member State, to demonstrate that environmental criteria for long-term human health protection are met*".

Undeniably, all the above factors justify a problem and a need for the appropriate evaluation of NORM behaviour in aquatic systems as extremely important. The main objective of this webinar is just to inspire Alliance members in searching a new research priorities as well as to identify of potential research topics to be included in frame of open call organised by "Pianoforte" - *Partnership for European research in radiation protection and detection of ionising radiation: towards a safer use and improved protection of the environment and human health, the project just started in frame of EURATOM research and training programme.*

The webinar is organised in panel discussion mode where selected group of panellists shares facts, offers opinions, and responds to audience questions. The interaction with on-going RadoNorm project is planned. The panel discussion will be preceded by introductory presentations providing description of sources and exposure scenarios, research examples, case studies and suggestions concerning research topics formulation. See attached workshop final agenda.

If you like to give your opinion on the topics planned to be discussed, please let us know in advance, then we try to provide you with the opportunity to do it!

On behalf of Alliance BoD

Boguslaw Michalik