

## Challenges in applying the radiation protection system in the management of NORM and radon 8 December 2022/ 09:30-12:00 CET

### WHY THIS TOPIC? —

The International Commission on Radiological Protection system of protection is based on three fundamental principles: justification, optimisation and dose limitation; they apply to three types of situations of exposure to ionising radiations: (those that can be) planned, (in case of) emergency and existing (from sources that already exist when decisions to control them are made) along with three categories of exposures: occupational (i.e. workers), medical patients and the public (ICRP, 2007, ICRPedia).

Radon and NORM (naturally occurring radioactive materials) exposures have been categorized by ICRP as existing exposure situations (ICRP 2014; 2016; Lecomte, 2016; ICRP, 2019). However, both types of sources present specificities, making the choices about the type of exposure situation and the categories of exposure somewhat challenging and areas of confusion [Cool, 2013]. In some circumstances (for example in [Euratom, 2013]), radon and NORM are considered as planned exposure situations and exposure controlled as such. ICRP has recognized that further clarity is needed on the interpretation of exposure situations [Clément, 2021].



ICRP has insisted that the optimisation principle is a systematic process that apply irrespectively of the exposure situation: fundamentally, the exposure of the individuals should always be kept ALARA below certain dose criteria, be it called "reference level" or "dose constraint" depending on the case. Nonetheless, the protection strategy should be designed based on the characteristics of the situation and the circumstances of the exposure and a graded approach might be appropriate.

The application of the optimisation principle is the cornerstone of the activities of the European ALARA Network. Furthermore, the EAN also aims to assist ICRP in the practical implementation of its recommendations and to monitor the development of the new general recommendations [EAN, 2021], as a Special Liaison Organisation.

**The EAN would like to examine how the optimisation principle has been applied in the case of NORM and radon (at workplace or in other circumstances) and whether the choices of exposure type and exposure categories affect the practical implementation of ALARA.**

A webinar will be organised to present an overview of experiences and discussed if the elements of the optimisation process could be influenced by the type of exposure situation/categories of exposure:

- Selection of the appropriate dose criteria (dose constraint, reference level);
- Dose assessment;
- Identification of the protective options and selection of the best option;
- Implementation, monitoring of exposure and iteration.

## PROGRAMME. —

The programme of the webinar is the following:

15-20 min	The philosophy of the ICRP system applied to radon and NORM	<b>Mr. Jean-François Lecomte</b> Co-author of [ICRP, 2014, 2019], ICRP Emeritus, France
15-20 min	Practical experiences from Norway in NORM remediation	<b>Mrs. Marte Holmstrand,</b> DSA, Norway
15-20 min	Feedback on radiation protection for NORM facilities and underground workplaces	<b>Mrs. Katerina Navratilova Rovenska</b> SURO, Czech Republic & RadoNorm Partner
10 min	☕ ... mini break ... ☕	
15-20 min	Radon potential map of the UK – updating and implementation	<b>Mrs. Tracy Gooding</b> UKHSA, United Kingdom
15-20 min	Optimisation in protection from radon: problems and proposals	<b>Mr. Francesco Bochicchio</b> ISS, Italy
(~ 30 min/)	<b>Round Table</b>	

## IN PRACTICE. —

- The participation to the webinar is free of charge and will be held on Zoom.
- The webinar will not be recorded.
- **Interested individuals needs to register:**  
[https://akademie.ages.at/european\\_alara\\_network\\_webinar\\_-\\_challenges\\_in\\_applying\\_the\\_radiation\\_protection\\_system\\_in\\_the\\_management\\_of\\_norm\\_and\\_radon](https://akademie.ages.at/european_alara_network_webinar_-_challenges_in_applying_the_radiation_protection_system_in_the_management_of_norm_and_radon)
- Registration is the opportunity to send questions/topics you would like to see discussed during the round table
- Participant might use the chat to ask question for the Round table.
- A synthesis of the presentation and discussion will be produced and published on the EAN website. ■

## REFERENCES. —

- C. Clement, 2021.** Keeping the ICRP recommendations fit for purpose, C. Clement *et al.* 2021 *Journal of Radiological Protection* 41 1390.
- Cool, 2013.** Review of the ICRP system of protection: the approach to existing exposure situations, D. A. Cool, March 2015, *Annals of the ICRP* 44(1 Suppl).
- EAN, 2021.** European ALARA Network Strategic Agenda 2021-2026.
- Euratom, 2013.** Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation, Official Journal of the European Union, L 013, 17 January 2014.
- ICRP, 2007.** The 2007 Recommendations of the International Commission on Radiological Protection. ICRP Publication 103. Ann. ICRP 37(2–4).
- ICRP, 2014.** Radiological Protection against Radon Exposure. ICRP Publication 126. Ann. ICRP 43(3).
- ICRP, 2019.** Radiological protection from naturally occurring radioactive material (NORM) in industrial processes. ICRP Publication 142. Ann. ICRP 48(4).
- ICRPedia,** [http://icrpaedia.org/Exposure\\_Categories\\_and\\_Situations](http://icrpaedia.org/Exposure_Categories_and_Situations), June 2019.
- Lecomte, 2016.** J. F. Lecomte, Understanding existing exposure situations. *Annals of the ICRP* 2016 45:1\_suppl, 54-63.