



EAN Working Group on the Application of ALARA for Radon At Work (Working Group A-RAW)

TERMS OF REFERENCE

| | |
|----------|---|
| Meeting: | 5 March 2021 (Microsoft Teams) |
| Members: | <ul style="list-style-type: none">– Sylvain Andresz (CEPN, France),– Sebastian Feige (BfS, Germany),– Ulrike Kulka (BfS, Germany)– Julie Morgan (PHE, United-Kingdom),– Cristina Nuccetelli (ISS, Italy),– Caroline Schieber (CEPN, France),– Nicolas Stritt (OFPH)– Hugh Synnott (RPII, Ireland),– Fernand Vermeersch (SCK•CEN, Belgium) |

Why a Working Group?

National regulations for the protection against radon at the workplace have recently evolved in Europe. In general, the number of workplaces affected by the regulations has increased; including many workplaces not previously aware of the radiation protection system. Furthermore, the practical application of a graded approach to the regulation of radon, using reference level/exposure values, is expected to be challenging in practice and raise questions from employers and other affected parties.

As a consequence, the European ALARA Network has set up, in 2021, a working group to investigate the practical implementation of the ALARA principle in relation to exposure from Radon At the Workplace (A-RAW).

The objective

The objective of the working group is to collate a sample of practical experiences (case studies), from several countries in Europe, detailing the controls and measures implemented to protect against radon exposure in the workplace. A set of questions to assist the production of suitable case studies is proposed (cf. below) and focuses on the steps taken to identify, monitor and manage workplaces with high radon concentrations, with particular emphasis given to the application of the ALARA principle at each stage.

Feedback from workplaces with extensive previous experience in radon management (dam tunnel, legacy sites, caves etc.) will be of interest for comparing approaches between countries, but it is expected that this work will primarily target new entrants to regulation.

The Working Group is aware that other organizations and projects are investigating the topic of radon in the workplace: HERCA¹, RadoNORM, EU-DG Project² and ERA for example. Contacts will be made to avoid replicating work and to assist with elucidating further specific areas for investigation and survey.

The Working Group aims to synthesize the experiences collected from the field for: commonalities, lessons-learned, good practices and difficulties in application etc. This information can be useful to discuss the application of ALARA principle in these situations, address potential gaps and identify if actions (ex. guidance) are needed in the future and by who.

¹ Ex. HERCA is planning a [pre-workshop](#) on national radon action plans in March 2021 and a workshop in September.

² [Hugh](#), would you like to put info about this project?



The Working Group aims to share these results to the concerned radiation protection community and will work on identifying opportunities to do so.

| Actions list (March~June period). | | In charge |
|--|--|---------------------|
| 1 | Report from HERCA Workshop (23/03) to the Working Group | Caroline Schieber |
| 2 | Contact RadoNORM WP5 Leaders | BfS |
| 3 | Contact F. Bochicchio (ISS) who Chair of HERCA pre-workshop | Cristina Nuccetelli |
| 4 | Identify a basic list of cases in each country | All |
| 5 | Lay out a series of questions to be addressed by survey | All, by emails |
| 6 | Plan a (remote) meeting at the occasion of the next EAN Meeting (8~9 June) | Sylvain Andresz |



Tentative set of questions.

This will be adapted following contact with other organizations to avoid replicating efforts

TESTING.

Radon concentration measurement: who is responsible for ensuring measurements are undertaken? What type of measurements are undertaken and is preference given to passive or direct-reading measurement devices?

Accreditation of radon measurement services: Are accredited services for radon concentration measurements mandatory? (in case : definition of a level of radon concentration under which no accredited services are needed.

What if < reference level? Any (mandatory) requirements to reduce exposure ALARA?

MITIGATE

If > reference level: Techniques of diagnosis and mitigation: What data/guidance is available to establish a diagnosis of the building and inform the type of mitigation required? For example: guidance on best practices, definition of standards for corrective measures (technical, organizational) and their long-term follow-up.

Determination of annual radon concentration and "theoretical" estimate of effective dose to workers: calculation techniques for estimating the radon concentration average and effective dose: respiratory/breathing rate, time in contact with radon, conversion factors between radon concentration, equilibrium factor etc.

Criteria for the determination of workplaces at risk of high concentrations of radon (e.g radon prone areas) and the transition from an existing to a planned exposure situation: Identification of radon prone areas and the provision of information to employers/landlords affected by a requirement to undertake radon measurements.

MANAGE

Practical implementation of licencing requirements for the workplace: Protective measures to assist with ALARA (zoning and signage, organization, warning system, designation of controlled, supervised areas, ventilation/airflow requirements? checks on continued operation of radon countermeasures (fans/sumps)? etc.).

Practical implementation of licencing requirements for the workers: dosimetry system (calculation hypothesis, EAP, personal dosimeter (incl. market analysis) against ambient measurement, etc.) and follow-up of exposure (dose register), restriction on dwell time in areas of high radon concentration.

Other issues in the practical implementation of licencing requirements: how do employers access/obtain advice from a radiation protection expert and training and education in radon.