Radon in Workplaces: New legislation and Guidelines

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In 2014 National Radon Control Strategy for Ireland (NRCS) was launched

NRCS identified a need to improve regulations around radon in workplaces (R41)

It recommended that account to be taken of
  - Experience gained enforcing the 1996 EU BSSD and
  - The requirements of the 2013 EU BSSD
The Mission took place in September 2015

IRRS noted the need to review and revise the specific regulations addressing radon in workplaces especially underground workplaces to enhance their effectiveness.

Ireland’s NRCS was noted as a good practice by the IRRS team.
Context – European Council

- Council Directive 2013/59/Euratom (EU BSSD) provided the opportunity for improvement
  - Environmental Protection Agency (EPA) is the Competent Authority
Regulation 66 deals with radon in workplaces

- It sets out
  - Who must measure
  - The Reference Level
  - The actions the need to be taken
  - Timeframe
Radon map of Ireland

National Radon Map

An interactive radon map is on EPA’s radon website www.radon.ie

High Radon Areas:

10 km grid squares in which 10% or greater of houses are predicted to exceed the national Reference Level
Who must measure

- There is now a general duty on employers in High Radon Areas to measure radon.

- This applies to:
  - underground workplaces
  - aboveground workplaces in High Radon Areas in ground-floor or basement
  - Other workplaces identified by the EPA as being at risk
Underground workplaces

- These are new requirements

- Underground workplaces are mines and show-caves. Note: basements are not underground workplaces

- Radon in underground workplaces is a risk that has to be managed as remedial measures are normally not possible

- Underground workplaces will be subject to inspection
What are we proposing?

- Radon in underground workplaces – develop a regulatory regime
  - during 2019 we will visit each cave operator to advise them of the new regulations
  - The aim is to develop a risk assessment to determine the controls to be put in place in that cave to minimise staff exposure
  - Any future inspections will be against those controls
Underground workplaces

- Radon in underground workplaces - UK
  - Last year we accompanied an UK HSE inspection of a show cave in UK
    - Impressed by the regime in place there a combination of area monitoring and strict attention to staff rostering
  - A UK based cave specialist helped devise this system. EPA is collaborating with this expert - in consultation with the show caves in Ireland
Aboveground workplaces
Reference Levels and Measurement

- Reference Level is reduced
  - Now 300 Bq/m$^3$ reduced from the previous value of 400 Bq/m$^3$

- The radon measurements must be carried out in accordance with guidelines issued by the EPA
  - the guidelines include:
    - the testing period should be at least three months (seasonally adjusted)
    - the number of detectors needed and their placement
    - Communicating the results to the customer
    - What to do when the result is > 300 Bq/m$^3$

The EPA holds a list of registered radon measurement services
What if radon levels are greater than 300 Bq/m$^3$ in a workplace?

- There’s a requirement either to reduce the radon levels or introduce a system of radiological protection. (Such a system would be very onerous for the employer).

- Remedial work is therefore strongly recommended and the preferred choice. EPA holds a list of registered Remediation contractors.

- Follow up measurements are then required.

- Remedial work and follow up measurement must take place within 12 months.

- If remediation is unsuccessful then notification is required.
What if radon levels in a workplace are still above 300 Bq/m³ following remedial work?

- Notification to competent Authority is required, but when?
  - Remediation may be unsuccessful at the first attempt but may after a second or third attempt be successful. (Above ground workplaces)
  - In Ireland, we are unaware of an above ground workplace where radon levels (or radon exposure) could not be reduced
  - We propose that notification is made if the first remediation attempt is unsuccessful
S.I. No. 30 of 2019 (Ionising Radiation) Regulations 2019

1 - NO immediate action unless there are substantial changes to the building or if periodic verification measurements are indicated.

2 - Exposure of workers to be kept under review.

3 - The situation shall be managed as a planned exposure situation.

* or a corresponding time-integrated radon exposure value.

Diagram:
- Radon priority area → Measurement
- Specific workplaces → Measurement
- Other sources → Identification

Measurement:
- > National Reference Level
  - NO → Remediation
  - YES → Verification measurement

Remediation:
- 12 months

Verification measurement:
- NO
- YES → Notification

Notification:
- Exposure assessment

Exposure assessment:
- > 6 mSv/y
  - NO
  - YES → Remediation

Remediation:
- 12 months
Summary

- The new regulations are positive. They implement a recommendation of the NRCS and IRRS mission.

- EPA and HSA are working in partnership to support employers implement this legislation.

- EPA is advising its licensees and registrants of the new requirements. (Similar for HSA)

- Further engagements, for example, with employer networks are also planned.
Thank you