

Environmental **Radon** Newsletter

AUTUMN 2006

ISSUE 48

World Health Organisation International Radon Project

Jon Miles, Health Protection Agency, jon.miles@hpa-rp.org.uk

The World Health Organisation (WHO) has set up a project to reduce the lung cancer risk from radon around the world. Participants from many countries including the UK met in 2005 and 2006 to work on the project. The final report of the project will include detailed recommendations on radon risk reduction. The information below is taken from the WHO website, www.who.int/ionizing_radiation/env/radon

Exposure to radon in the home and workplace is one of the main risks of ionizing radiation, causing tens of thousands of deaths from lung cancer each year. In order to reduce this burden, it is important that national authorities have methods and tools based on solid scientific evidence and sound public health policy.

WHO has had the foresight to have been working towards development of guidelines. In 1996 it published a report containing several conclusions and recommendations covering the scientific understanding of radon risk and the need for countries to take action in the areas of risk management and risk communication.

Recent findings from case-control studies on lung cancer and exposure to radon in homes completed in many countries allow for substantial improvement in risk estimates and for further consolidation of knowledge by pooling the data from these studies. The consistency of the findings of case-control studies and of latest pooled studies coming from Europe and North America, clearly point to a need for global action.

To fulfil these goals, WHO has developed a programme on public health aspects of radon exposure and is identifying resources for its implementation. This project is one of the highest priority activities.

To achieve these aims, WHO has formed a network of key partner agencies from some 40 Member States to collect and analyse information on radon risk and build up a global database. In January 2005, WHO launched an international project for developing guidelines to limit exposure to radon and provide effective mitigating measures where the risks are greatest.

The key objectives of the Project are to:

- Identify effective strategies for reducing the health impact of radon
- Promote sound policy options, prevention and mitigation programmes to national authorities
- Raise public and political awareness about the consequences of exposure to radon
- Raise the awareness of financial institutions supplying home mortgages to the potential impact of elevated radon levels on property values
- Monitor and periodically review mitigation measures to ensure their effectiveness
- Estimate the global health impact of exposure to residential radon and so allow resources to be allocated effectively to mitigate the health impact of radon
- Create a global database (including maps) of residential radon exposure.

The International Radon Project will be issuing detailed recommendations on radon risk reduction that will target:

- The installation of mitigation devices at the time of construction versus retrofitting
- The incorporation of radon prevention and control measures in national building codes
- Radon testing, mitigation and inspection of existing passive/active systems at the time of sale for existing homes
- Control measures designed for medium and low radon exposure levels, which contribute most to the overall radon lung cancer burden
- The role of tobacco smoking in radon risk reduction programmes with a view to the overall goal of healthy indoor air
- The use of both voluntary guidelines and enforceable regulations
- Financial support mechanisms to assist radon mitigation actions in cases where such support is necessary to allow implementation of effective protection from radon health hazards.

This newsletter and previous editions can be seen at www.hpa.org.uk/radiation/radon

POINTS OF CONTACT

Building Research Establishment (BRE)
Garston, Watford, WD2 7JR
BRE Radon Hot Line:
Tel: 01923 664707 Fax: 01923 664010
www.bre.co.uk

Radon Survey
Radiation Protection Division, Health
Protection Agency
Chilton, Didcot, OX11 0RQ
Radon Freephone: 0800 614529
Fax: 01235 833891
www.hpa-rp.org.uk/radiation

Department for Environment,
Food and Rural Affairs
Zone 4-F7, Ashdown House
123 Victoria Street, London SW1 6DE
Tel: 020 7082 8497/8498 Fax: 020 7082 8474
www.defra.gov.uk

National Assembly for Wales
Housing Division
Cathays Park, Cardiff, CF1 3NQ
Tel: 01222 825219 Fax: 01222 825391

Environment and Heritage Service
Department of the Environment for
Northern Ireland
Calvert House, 23 Castle Place
Belfast, BT1 1FY
Tel: 01232 254754 Fax: 01232 254700

Scottish Executive Development Department
Housing Division 1
First Floor East, Victoria Quay
Edinburgh, EH6 6QQ
Tel: 0131 244 5575 Fax: 0131 244 5596

Health and Safety Executive
Health Directorate B6
Rose Court, 2 Southwark Bridge
London, SE1 9HF
Tel: 020 7717 6854 Fax: 020 7717 6717

Northern Radon Liaison Group
c/o Environmental Health Department
South Lakeland District Council
South Lakeland House, Lowther Street
Kendal, Cumbria, LA9 4UD

Radon South West Committee
Secretary: Gerald Hudd
46 Parkfield Drive, Taunton
Somerset TA1 5BU
Tel: 01823 355194
email: GAHudd@Somerset.gov.uk

Steering Group on Radon
(Northamptonshire and elsewhere)
Environmental Health Department,
Daventry District Council
Lodge Road, Daventry
Northamptonshire, NN11 5AF.

Derbyshire Radon Steering Group
c/o Environmental Health Department
Derbyshire Dales District Council
Town Hall, Matlock
Derbyshire, DE4 3NN

The Radon Council Limited
PO Box 39, Shepperton
Middlesex, TW17 8AD
Tel: 01932 221212 Fax: 01932 229779

Irish employers convicted for failure to measure radon levels

The Radiological Protection Institute of Ireland (RPII) issued the following press release in June 2006:

The RPII has today welcomed the decision of the District court in Ennis to convict three employers for failing to comply with a RPII direction to measure radon in their workplace. Two of the defendants were fined €500 each. A third defendant, whom the judge noted had pleaded guilty at the first opportunity, was fined €300. All three were ordered to pay legal costs of €600 each. A fourth case was dismissed by the judge.

Commenting on today's events, Dr. Ann McGarry, Chief Executive of the RPII, said: "We hope that all employers, particularly in high radon areas such as Ennis, will take note of today's decision and will recognise the need to measure radon to ensure

their employees are not at unnecessary risk. Long term exposure to radon increases the risk of lung cancer and we estimate that up to 200 people die from lung cancer as a result of radon in Ireland every year. Therefore, we will not hesitate to prosecute employers who fail to measure their radon levels after being directed to do so by the RPII".

The Radiological Protection Act 1991, (Ionising Radiation) Order, 2000. S.I. No. 125 of 2000 empowers the RPII to direct employers to carry out radon measurements in their workplace. Once directed an employer has six months to comply and complete the measurement and inform the RPII of the result.

Finding answers to radon questions

Radon prevention methods for new buildings

There are descriptions and diagrams of radon preventive measures on the Building Research Establishment's website, www.bre.co.uk/radon

To discuss radon protection in new buildings contact the Building Control Department of your local council or the independent building control body (Approved Inspectors). Failing this telephone Mr Richard Shipman at the Department for Communities and Local Government on 0207 9444 4000.

Radon reduction methods for existing buildings

There are descriptions and diagrams of radon remedies on the Building Research Establishment's website, www.bre.co.uk/radon

Other radon questions

There are answers to most radon questions on the Health Protection Agency's website, www.hpa.org.uk/radiation/radon, or call the radon line - 01235 822622.

Promoting radon dose reduction in workplaces

Daryl Dixon, Health Protection Agency, daryl.dixon@hpa-rp.org.uk

Health and Safety legislation requires employers to evaluate the hazards to their staff, and control risks. Any employer with staff in a radon Affected Area needs to consider the exposure of staff to radon (see the HSE Action Plan for radon in Environmental Radon Newsletter 47).

The Radiation Protection Division (RPD) of HPA provides a commercial radon measurement service which is used by many employers. In the majority of cases, these results show radon levels to be low and reassure employers and their staff that no action is required. In around 15% of cases, however, radon levels are above the threshold of 400 Bq m⁻³ at which the Ionising Radiation Regulations (1999) require employers to implement a range of formal protection measures. Detailed interpretation of these requirements falls to Inspectors of the Health and Safety Executive, or for most service employers, enforcement officers in District or Unitary Councils.

In practice, much of the practical advice is provided by an adviser whom the employer is obliged to consult, as provided by RPD and some other consultants. These advisers play a very important part in enabling employers to provide appropriate protection, because application of the Regulations to radon is not straightforward, and few employers know much about radon and its management. In recent years, therefore, staff at RPD have been developing procedures and guidance that are intended to assist employers to understand and meet their obligations more easily.

Various strands of advice and procedure have been under development, and a recent innovation has been to draw these into a single approach that covers all aspects of finding and reducing high radon concentrations. This approach is being presented by RPD at meetings and training events under the heading 'The Five Point Plan for Radon'

The Five Point Plan

The essence of a protection strategy for an employer can be summarised in five steps, and the HPA plan provides practical and detailed advice to the employer on the actions and decisions that are required at each step.

This scheme has been developed to make practical protection more accessible to employers, and to increase the uptake and effectiveness of such programmes. It is expected to be directly relevant and helpful to virtually any type of workplace building, and can be developed further for those with more complex protection issues.

RPD is continuing to develop and enhance individual elements of the plan based on experience gained from working with and advising many commercial companies. The plan is being presented in routine meetings between RPD and Councils and other interested parties, and is supported by a bound set of notes with more detail of the requirements and issues.

More information is available from Daryl Dixon on 01235 822792 or by email daryl.dixon@hpa-rp.org.uk.



Step	Explanation
Measurement	Required wherever employees may be exposed to a significant hazard, i.e. in a radon Affected Area. Guidance on how many monitors to use is on the RPD website and in RPD literature.
Surveillance	Where a high result is found, RPD advise further and continuous measurements until effective mitigation is complete. Surveillance monitors and advice are available under an RPD commercial service.
Risk assessment	The priority for reduction of a high radon levels depends on working conditions. A simple assessment is provided by RPD to employers on surveillance.
Mitigation	This is the most important goal and should normally be completed within six months. Guidance on the types of mitigation are provided in RPD literature.
Maintenance	This is essential to determine when a mitigation system fails or deteriorates. Protocols and advice are provided by RPD to employers on surveillance.

Parliamentary questions on radon

Taken from Hansard for Wednesday 21 June, 2006

Mr. Bone:

To ask the Secretary of State for Health what measurement of radon gas has been recorded in each county in each of the last five years; and how this information is made available to the public.

Caroline Flint:

The radiation division of the Health Protection Agency (HPA) manages the radon measurement programme in England and Wales. Buildings are monitored using two detectors supplied by HPA to measure levels of radon over a three-month period. The HPA uses various campaign methods to encourage householders to have their dwellings measured but a number of householders choose to ignore this support. In the future, house holder-sales packs will include a section about radon levels in the house which will significantly help to raise awareness of radon gas.

The readings are fed into a national database to produce the radon atlas of England and Wales, publication NRPB-W26 from the HPA and available as a free download on www.hpa.org.uk/radiation, provides detailed data by administrative and postcode divisions as well as the definitive radon probability maps. This publication is due to be updated within the next 12 months.

Mr. Bone:

To ask the Secretary of State for Health what measures are in place to protect citizens from the effects of radon gas.

Caroline Flint:

The National Radiological Protection Board (NRPB) first offered advice to the Government on the exposure to radon in dwellings in early 1987. (In 2005 the NRPB merged with the Health Protection Agency, becoming its radiation protection division.)

This advice was updated and expanded in 1990 in a statement and supporting document on the limitation of human exposure to radon in homes (reference NRPB. Human exposure to radon in homes. Doc. NRPB. 1, No. 1, 17-32 (1990)). Central to the control strategy is a recommendation that radon concentrations at or above an action level should be reduced to as low as reasonably practicable. In areas with a high risk of elevated radon concentrations, the radon concentration in existing homes

should be measured and reduced as appropriate and new homes built with protective measures against radon.

Legislation under the Health and Safety at Work Act 1974 means that in places of work the Ionising Radiations Regulations 1999 come into effect if radon is present above a defined level and then employers are required to take action to restrict resulting exposures.

Mr. Bone:

To ask the Secretary of State for Health whether the Government have determined a maximum safe level of radon gas.

Caroline Flint:

Radiation protection principles are based on the level of risk and this approach is applied when dealing with radon gas levels in buildings. The risks from the presence of radon gas have to be balanced against other factors. From a public health perspective, priority has to be given to areas and houses that are more likely to suffer from the problem and this is tackled in many ways.

The Government accepted advice in a statement from the National Radiological Protection Board (NRPB), published in 1990, on the limitation of human exposure to radon in homes and implemented the recommendations contained in the supporting document (reference NRPB. Human exposure to radon in homes. Doc. NRPB. 1, No. 1, 17-32 (1990)). (In 2005, the NRPB merged with the Health Protection Agency (HPA), becoming its Radiation Protection Division.)

The results of 13 European studies of indoor radon and lung cancer, taken together, provide overwhelming evidence that radon can cause lung cancer. There is no evidence of a threshold below which radon exposure is safe, and there is substantial evidence of a risk for individuals who live in homes with moderate radon concentrations as well as those with homes above 200 becquerels per metre cubed, the current United Kingdom (UK) action level. Homeowners are currently advised to apply radon reduction measures if tests show levels above the action level.

Significant efforts are being made by World Health Organisation, developed countries, UK Government and the HPA to determine how to raise awareness of the issue and to how to better tackle the whole problem.