

Environmental **Radon** Newsletter

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New radon survey of Scotland

Ian Hall, Scottish Executive Environment and Rural Affairs Department

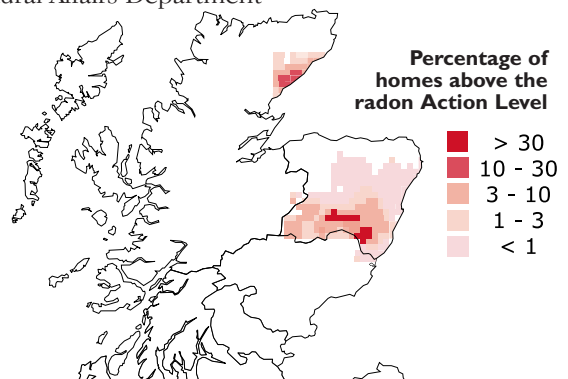
In the early 1980s a National Survey of radon in houses in the whole of the UK was carried out. The results showed that radon levels in Scotland were, on average, similar to those in the rest of UK. However, the percentage of homes above the UK radon Action Level varied considerably from one area of Scotland to another, as it does in the rest of the UK.

At the same time as the National Survey was being carried out, extra radon measurements were made in parts of Scotland where it was expected on geological grounds that radon levels might be high. In two of these areas (parts of the Highlands and Grampians) the surveys confirmed that there were some high levels in houses. More detailed surveys of these areas allowed the proportions of houses above the UK Action Level for radon to be mapped (see figure)*.

Some further measurements have been made in Scotland since that time, predominantly in the Affected Areas, but also elsewhere. A report summarising all of the results to 1996 by local authority and by subdivisions of the postcode system has been published**. Since then, further measurements of radon in homes have been funded by the government and by individuals.

However, it is clear that such measurements are insufficient to allow a radon map of Scotland to be developed to the same degree of detail as had been done for England, Wales and Northern Ireland. The Scottish Executive (SE) has therefore asked NRPB to provide them with radiological advice and research into levels of radon in homes across Scotland, including the production of a map of radon Affected Areas.

To provide this, NRPB will undertake a further substantial radon survey in Scotland. As well as producing a map, NRPB will report on the significance of the levels found. A small steering group drawn from SE Environment Group and Health Department and from NRPB will oversee



the research and ensure that requirements remain focussed. It is expected that the mapping exercise will take place over a period of about a year.

The resulting map and report will be useful for several purposes:

- Identifying areas where people should be advised to carry out radon measurements, and where house buyers should make enquiries about radon levels before purchase.
- Allowing radon preventive measures to be mandated in new houses built in areas where there is a significant risk of high radon levels.
- Identifying areas where there may be high radon levels in workplaces such as schools and offices, which may be in contravention of the health and safety regulations.

* *Radon Affected Areas: Scotland. Documents of the NRPB, Volume 4, Number 6, 1-8, 1993.*

** *Radon in dwellings in Scotland: 1996 review. NRPB-M569.*

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This newsletter and previous editions can be seen at www.nrpb.org - search for radon newsletter

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Evacuate the workplace?

Daryl Dixon, National Radiological Protection Board

The level of awareness about radon exposures at work is extremely variable, some large employers having sophisticated programmes of measurement and assessment, whilst others, particularly smaller companies, are far less well informed. The knowledge gap in the latter group can lead to protection standards being compromised.

If high radon levels are found in a workplace, the employers need to be particularly well advised. Employees will have been shown to be receiving significant radiation exposure and the employer is obliged to take action.

Planning and implementation of radon mitigation can take some time and continuing exposure of employees to radon during this process should not be taken lightly. Surveillance of exposure during this time will usually be necessary; without this, particularly if mitigation takes more than a few weeks, the employer will have insufficient data

to show that employees' exposures have been properly managed.

In principle, an employer is required to consult a Radiation Protection Adviser if any result exceeds 400 Bq m⁻³. Normally, however, when the intention is to reduce the level, there is little to be gained from an individual RPA consultation. An adequate level of protection for employees can be achieved provided:

- mitigation work is prompt
- there is a continuous record of radon measurements for the period in which the work is planned and carried out

This means that providers of radon measurements will need to advise customers with high results carefully so that they can decide on the scope of interim measurements until mitigation is shown to be effective.

The importance of having good advice about radon is illustrated by a recent case in which the occupants of a workplace were advised at one point to vacate it because of their radon exposure.

In this workplace, remedial measures to reduce a high radon level took many months to achieve success. Detailed data on radon levels during this period were not available, and it seemed that the occupants might have been exposed to the legal limit of annual exposure. When the matter was referred to the Health and

Safety Executive (HSE), the advice given was to vacate the building.

But consultation with a Radiological Protection Adviser and the results of specialist measurements showed that the risks from an additional few weeks exposure did not justify the considerable upheaval associated with relocation. The matter was resolved with the close involvement of the RPA and the HSE, and the radon level was reduced with little further exposure of the occupants.

Website ordering of radon monitors for householders

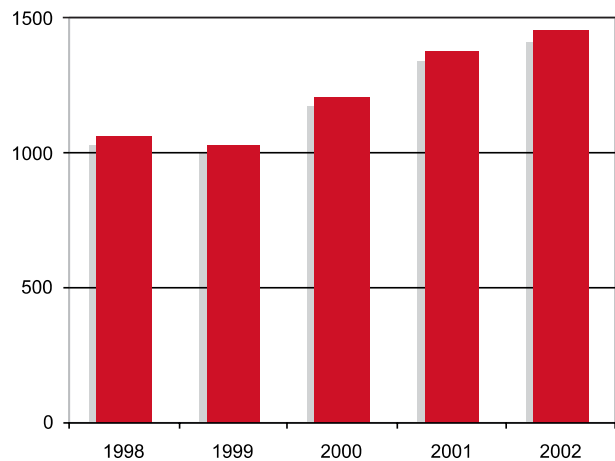
Daryl Dixon, National Radiological Protection Board

To make radon measurements more easily available, the National Radiological Protection Board (NRPB) has introduced a new facility on its website to allow householders to order and pay for a standard radon measurement pack (including two detectors) by credit card. The site also provides full information about conditions of use and return of monitors.

The NRPB radon programme aims to enable all those with concerns about radon to be able to obtain appropriate information or advice. The objective is the reduction of radon exposure, through various avenues, including a programme with central government, direct contact with householders and indirect contact through professional groups such as chartered surveyors.

Although the government programme can involve large numbers of measurements, their campaigns are directed specifically to the most affected areas and where local councils are particularly well engaged. This leaves large areas of the country where there is relatively little awareness or support for people concerned about radon, even though there may be appreciable areas locally that are affected by radon.

There is considerable interest in radon services from householders who wish to proceed independently of official programmes. The number of measurements supplied by NRPB to the public has grown steadily in recent years as shown in the figure. This shows that many people actively seek and are prepared to pay for information about radon to decide for themselves how to manage or reduce their radon exposure. Because



Number of householders paying for NRPB radon measurements

many people are still unaware of such services there may, in fact, be considerable unfulfilled demand for measurements.

It is important, therefore, that once enquirers find an information source about radon, they are then easily able to obtain measurements. The new website ordering facility achieves this, with secure financial procedures, automatic email confirmation of order and payment, rapid delivery of detectors and the right to cancellation and refund. The site may be developed to offer other services and products provided by NRPB.

The detector ordering service is linked from the radon services page of the website,

www.nrpb.org/services/radon

England programme continues

The Department for Environment, Food and Rural Affairs (DEFRA) has re-affirmed its commitment to completion of the originally planned work under its radon programme by announcing an extension of the initiative for a further two years until 31 March 2005.

The Department will continue to provide the same 'in kind' support to the 32 local authorities in England who joined the programme in 2000. This includes:

- access to free radon measurements (and retests following remediation) for householders being targeted by the local authorities
- expert advice on health issues and remedial measures
- publicity support and the services of consultants engaged to facilitate the programme

Validation of radon measurement laboratories

Jon Miles, National Radiological Protection Board

Because radon levels in houses can vary from day to day and month to month, a decision about whether a house requires radon remedial measures should be based on the results of long-term measurements. These are normally made using passive radon detectors left in place for three months, and the results corrected to allow for typical seasonal variations. The same method is used to determine whether remedies have been successful.

To ensure an appropriate quality of measurement, NRPB operates a validation scheme for laboratories offering long term radon measurements*. Local authorities and the Northern Ireland Housing Executive have been requested by the government departments with responsibility for radon in dwellings to give

favourable consideration only to grant applications supported by measurement results from laboratories successfully participating in the scheme.

In order for a laboratory to be validated, it must demonstrate that it is using reliable and appropriate procedures, it must pass a performance test every six months, and it must report the results of measurements in an appropriate way.

The table lists those laboratories that are currently validated. An up-to-date list is maintained on the NRPB website, at:

www.nrpb.org/services/radon/validation.htm

* Miles, JCH and Howarth, CB. 2000. Validation scheme for laboratories making measurements of radon in dwellings: 2000 revision. NRPB-M1140

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sent to Jon Miles at NRPB (see address on page 2). The views expressed in the contributions here are not necessarily those of the Chartered Institute of Environmental Health, the Royal Environmental Health Institute for Scotland or the National Radiological Protection Board.