

# Environmental **Radon** Newsletter

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## Radon in *The Health of the Nation* Strategy

In a consultative document issued late last year\*, the government proposed that the environment should be a new Key Area in the Health of the Nation strategy. Targets were proposed for indoor radon, along with outdoor air quality, air quality in homes, noise pollution and lead in drinking water. The Departments of Health and Environment arranged two consultation workshops with the help of the Chartered Institute of Environmental Health. The interest in the meetings was so great that a third workshop was arranged.

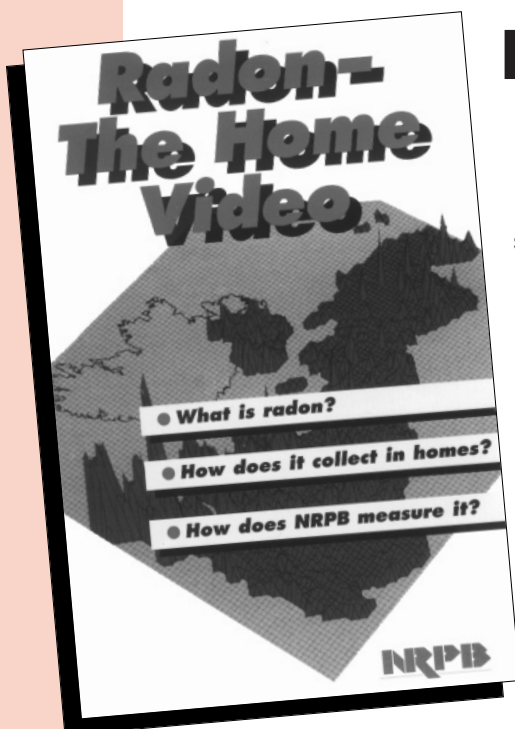
### The targets proposed for radon were:

- Identify at least a further 30,000 homes that are above the radon Action Level by the year 2000.

- Encourage an additional 10,000 owners of homes above the Action Level to take remedial action by 2000.

The workshops generally endorsed the idea of the environment as a Key Area, with wide divergences of view between delegates and speakers on priorities within the overall strategy. As far as radon is concerned, participants agreed on its place within the strategy and on the proposed targets.

*\*Consultative Document on the Environment and Health, Department of Health H85/003 1139 1P 20k (1996).*



## Radon - the Home Video

A ten-minute video on radon has been produced by the National Radiological Protection Board. It gives straightforward answers to the questions:

- What is radon?
- How does it collect in homes?
- How does NRPB measure it?
- How can high levels be reduced?

The aim is to encourage householders in high radon areas to have their homes monitored and those found with high levels to remedy. The video includes interviews with representatives of central and local government as well as a householder who has reduced the radon level in his home.

### THE VIDEO IS ON SALE FROM

Press and Public Relations Office  
NRPB  
Chilton  
Didcot  
Oxon  
OX11 0RQ.

It costs £3 including VAT, postage and packing. Please send cheque with order.

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Scottish Office Development Department  
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# The Radon Manual

The Radon Council has published the second edition of *The Radon Manual*. This was produced in collaboration with the academic staff of Nene College, Northampton, with editorial assistance from staff members of BRE, HSE, NRPB and The Radon Council Limited. The manual, in four parts, is produced in A4 loose-leaf format with a sturdy four-ring binder so that additions or amendments can be easily incorporated.

Part one, comprising 45 pages, provides an overview of the indoor radon problem suitable for use in short courses for those in the radon industry: builders; estate agents; mitigators; solicitors; surveyors.

The 87 pages of Part two, in 11 chapters, deal with all aspects of radon in considerable detail, including, among other topics, health effects, measurement techniques, legislation and remedial actions. Part 2 is intended for undergraduate or graduate study, but also contains much of interest to the more general reader.

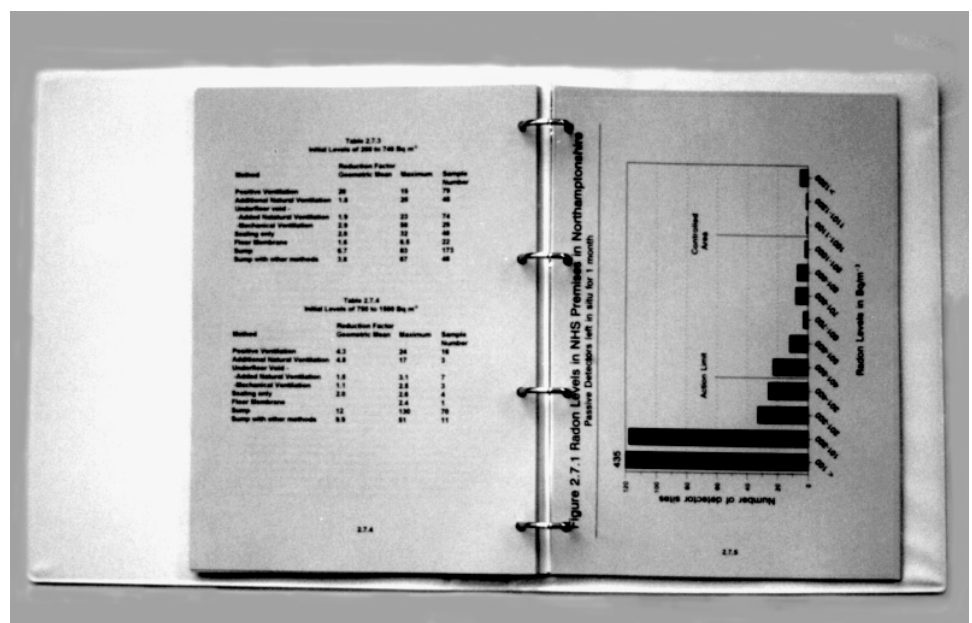
Part 3 of the manual details the Radon Council Code of Practice for those members of the Council engaged in the detection of radon or in remedial work to reduce radon in indoor air in both domestic and workplace environments.

Finally, Part 4 provides a short bibliography, lists of member organisations and observer members of The Radon Council (the industry's independent regulatory body), and names and addresses of relevant organisations with an interest in indoor radon.

*The Radon Manual*  
(ISBN 0 9519431 1 1)  
is available from:

The Radon Council Limited,  
PO Box 39,  
Shepperton,  
Middlesex, TW17 8AD.

Price £25 plus £5.80 for postage and packing,



*The Radon Manual*

# Radon Campaigns: A Local Authority Perspective

Martin Crocker - Mendip District Council

Local authorities need to be able to provide information to members of the public and to plan and implement radon policies which take account of local conditions. This article offers some practical experience. The author is the Chairman of Somerset Radon Affected Area Steering Group.

Local authorities are critically placed to optimise the effectiveness of any health promotion campaign that aims to persuade members of the public to take action to safeguard themselves. This is particularly true of recent Government-initiated radon Affected Area measurement campaigns where the causative agent, radon, and its health effects lack the tangibility and immediacy that stimulate self-help. A precarious line must be tiptoed between sparking off public alarm and conveying a message serious enough to produce action. A local authority's primary role, in this context, must be to provide advice, tailored to the individual, that encourages informed decisions to be made. The following is an outline of the process that a District Council might undertake in a radon campaign.

## Council Commitment

Secure Council commitment: the support of elected Members will prove essential in what may become perceived as a protracted and, at times, esoteric campaign. Brief Councillors, allow debate, review developments as well as contrary academic opinion, but make full use of the range of willing experts from other agencies (NRPB, BRE, the Radon Council, HSE). Keep your Committee appraised; keep radon high on the agenda.

## Policy

Develop a proactive strategy with aims and objectives for the following:

- private stock: measurement and remediation (advice)
- public stock: measurement and remediation (works)
- radon in the workplace: survey and enforcement action

## Coordination and Liaison

Promotional radon work demands multidisciplinary inputs in a dynamic open forum: coordination and liaison are vital enabling elements. Set up an Affected Area or regional Campaign Steering Group or join a neighbouring Group. A Steering Group with members from District, County and Health Authority (public health doctor and health promotion unit) will be able to pool resources, ideas and contacts, and acquire status, impact and effectiveness.

Invite observers from NRPB, DoE, BRE, the Radon Council, HSE and academic or professional institutions; they expect to help and will provide much expertise and authority.

## Education and Promotion

The Steering Group will become the mouthpiece of the Campaign and it will operate all of the promotional tools required to market its objectives to the public: for Somerset, those used are summarised below.

- Leaflet/poster distribution
- School information packs
- Parish Council information
- Builders/architects briefings
- Regular press releases and TV/newspaper articles
- Radon trade (the Radon Council)
- Corporate approach (building control, planning policy, environmental initiatives, discretionary renovation grants)
- Video produced
- 'Give-up smoking' integrated
- GPs/nurses briefings
- Conveyancing profession briefing
- Radiation advisory service at District Council level
- Leading by example - Council stock remediation (Mendip)

It is important to get the timing right, to meet the needs for assistance as they arise - especially the encouragement of remediation when householders have just received their results.

## Campaign Evaluation

Radon measurement campaigns are working. Substantial numbers of people are choosing to monitor their homes for radon. But why bother to monitor if remediation action is not taken when needed?

The outstanding challenge is that only 10% to 20% of householders who have bothered to discover that they occupy homes above the Action Level appear to take action to help themselves. On the domestic radon front, it is the low remediation uptake that must become the focus of attention for future campaigns. The remediation rate is the prime measure of effectiveness of the entire national radon programme and neither the Government, nor the Local Authority, nor the radon trade can make progress alone.

# The Risk of Lung Cancer

Colin Muirhead and Gerry Kendall, NRPB

There is abundant evidence from occupational exposure of miners and from animal experiments that radon causes lung cancer. The link between radon exposure in the home and lung cancer has also been studied directly in a number of 'case-control' epidemiological studies, but their statistical power has been limited. This is because radon levels in homes are generally lower than those in mines and because it is difficult to assess the exposure that people have received over the past 30 years or so when they may have moved house.

In order to overcome the problem of the low power of individual studies, published results from the eight largest studies (involving over 4,000 lung cancer cases and 6,000 matched controls without the disease) have recently been reanalysed together\*. This showed a significantly increasing trend in lung cancer risk with increasing levels of indoor exposure. The central risk estimate is compatible with the miner studies and the data do not indicate any departure from linearity. The trend is not dominated by any single study.

The analysis gives a relative risk of 1.13 for 25 years' exposure at the US action level of 150 Bq m<sup>-3</sup>. The corresponding relative risk for lifetime exposure at the UK action level of 200 Bq m<sup>-3</sup> would approach 1.5, implying that the chance of developing lung cancer would increase by about half. For the UK population, with smokers and non-smokers, about 6% of deaths are due to lung cancer. The foregoing risk factors would imply that exposure at 200 Bq m<sup>-3</sup> would lead to a 3% increased risk of lung cancer. Most of this risk would manifest itself in smokers, whose prevailing cancer risks are far higher than non-smokers.

The authors draw attention to the incompatibility between the results from geographical correlation

studies and those from either the miner studies or this analysis of domestic case-control studies. These inconsistencies and the known methodological deficiencies of the correlation studies imply strongly that the latter should be given little weight.

This American paper is important in that it supports the consensus on the risks of radon exposure and the value of radon programmes in many countries around the world. But this type of analysis, by its nature, makes use of summarised data about the populations being studied, whereas pooled studies, which combine information about all the individual cases and controls, would allow more refined analyses. Such pooled studies are planned both in North America and in Europe\*\*.

A number of other case-control studies are being carried out on both sides of the Atlantic, including one in southwest England. The outcomes will be of interest but as an editorial in the same issue of the *Journal of the National Cancer Institute* warns, restraint is needed in interpreting the results of individual studies. The expression 'epidemiological ping-pong' has been applied to the process in which a succession of studies, some statistically non-significant and others significant, are held to break and then re-establish the link between domestic radon exposure and lung cancer. More stable information will come from the pooled studies.

\* Lung cancer risk from residential radon: meta-analysis of eight epidemiological studies. JH Lubin and JD Boice, *Journal of the National Cancer Institute*, Volume 89, 49-57, 1997.

\*\* Indoor radon in North America. CR Muirhead, *Radiological Protection Bulletin*, Number 176, 25-26, 1996.