

Environmental **Radon** Newsletter

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Radon Roll-Out Programme

Andy Macpherson, Department of the Environment, Transport and the Regions

The completion in 1998 of the Government programme to offer a "free" measurement to every home in England with a greater than 5% probability of being above the Action Level marked the end of the large, centrally-organised measurement campaigns and the beginning of a new, locally-directed approach.

To facilitate the new approach, with its emphasis on encouraging remediation, Pilot Studies were set up in partnership with Derbyshire Dales, Cherwell and Mendip District Councils. The local authority provided the public face of the initiative, and was supported by resources supplied by central Government Departments. The resources provided were chiefly through Department of the Environment, Transport and the Regions (DETR) contracts with National Radiological Protection Board (NRPB) and Building Research Establishment (BRE), as well as publicity materials provided centrally by the Department, and the services of consultants contracted to facilitate the Pilot Studies approach.

As has been reported in previous editions of Environmental Radon Newsletter, the Pilot Studies have been very successful. A lot of lessons have been learned about what works well, and what does not. This has been brought together in a Good Practice Guide, which will be helpful to local authorities planning radon campaigns in the future. In the words of the consultants who facilitated and monitored the Pilot Study Approach, and who drafted the Good Practice Guide, "The local authority effect is real, and it is large."

By the summer of last year it was clear that the interim results coming out of the Pilot Studies were impressive both in terms of the numbers of people who sought advice from the local authority and the numbers that were apparently committed to carrying out remedial action. It was agreed that the new approach should be "rolled out" to other local authorities in England that wished to tackle radon in their areas, and where the resources could be most effectively used to encourage remediation. A seminar was held in June 1999 to which the 78 local authorities in England with some part of their district having a greater than 5% probability of being above the Action Level were invited. The Pilot Study Authorities and the Department's consultants made presentations about the experience to date.

Following the seminar, all 78 authorities were invited to work with DETR to "roll-out" the lessons learned in the Pilot Studies to other areas of the country. The 31 authorities listed in the table have expressed an interest in doing so; most have indicated that they wish to work in partnership with at least one other authority, and in some cases, with several others. This represents a large programme in total, which we envisage will take place over a three year period.

Over the past few months, meetings have been held between the 31 authorities, DETR,

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This newsletter and previous editions can be seen at: <http://www.nrp.org.uk/env-rn.htm>

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Radon Roll-Out Programme

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Department of Health, NRPB, and BRE in order to establish the types of campaigns that would best meet local needs. Action Plans, which are at the heart of the new approach, have been drawn up, or are being drawn up, to establish the objectives

of each individual project, its timescale, and to identify the resources that will underpin it. The first publicity programmes under the roll-out programme are likely to be seen in autumn of this year.

Local Authorities Participating In The Radon Roll-Out Programme

Devon

- West Devon Borough Council
- South Hams District Council
- Torbay District Council

Somerset

- Bath and North East Somerset District Unitary Authority
- South Somerset District Council

Dorset

- North Dorset District Council

Gloucestershire

- South Gloucestershire Unitary Authority
- Stroud District Council

Northamptonshire

- Kettering Borough Council
- Daventry District Council
- East Northamptonshire District Council
- Corby Borough Council
- Northampton Borough Council
- South Northamptonshire District Council

Leicestershire

- Harborough District Council
- Melton Borough Council
- Rutland Unitary Authority

Cambridgeshire

- Huntingdonshire District Council

Lincolnshire

- South Kesteven District Council
- North Kesteven District Council

Shropshire

- South Shropshire District Council
- Oswestry Borough Council

Derbyshire

- High Peak Borough Council

Nottinghamshire

- Ashfield District Council

Staffordshire

- Staffordshire Moorlands District Council

Cumbria

- South Lakeland District Council

Lancashire

- Lancaster City Council

North Yorkshire

- Craven District Council
- Richmondshire District Council

Northumberland

- Alnwick District Council
- Berwick upon Tweed Borough Council

Good Practice Guide

Andy Macpherson, Department of the Environment, Transport and the Regions

In order to smooth the change in the DETR radon programme from one based on measurements and provision of information to one where the greatest emphasis would be on encouraging remediation, it was decided to set up 3 Pilot Studies in partnership with Derbyshire Dales, Cherwell and Mendip District Councils.

From the outset, it had always been the plan to include the experience gained in the Pilot Studies in a Good Practice Guide that could be used by other local authorities that were to embark upon similar exercises in the future. The consultants contracted by the DETR to facilitate the Pilot Studies process, Community Economic Development Associates, were also asked to develop the guide.

A draft version of the Good Practice Guide was distributed to the local authorities that had expressed an interest in being part of the radon "roll-out" programme, to aid their planning. It was then published in finalised form in July along with a "toolkit" of publicity materials that had been used successfully in the Pilot Studies and which could be used in the roll-out.

By its nature, the Guide is necessarily a detailed document, some 37 pages long. In order to facilitate its use, a cross-referenced Summary Guide has been produced, so that basic principles may be identified easily, and the more detailed text in the main document identified quickly.

There are a number of key areas covered by the Guide:

Developing local programme ideas

The Guide points out that before considering how to develop a future programme, it is first necessary to review the characteristics of the local area and the nature of its radon problem. It then goes on to suggest the types of activity that a local authority may wish to pursue and ways to make these activities more effective. It sets out the type of resources and support that will be available through the roll-out programme.

Reviewing what has been done before

The importance of reviewing what has been done before is emphasised, in order to establish a baseline from which to move forward, but also to learn lessons from the work that has already been carried out. The Guide leads the local authority through the approach that it might take.

Drawing up an Action Plan

The "Action Plan" is the key document in any project carried out under the aegis of the roll-out programme. It is a description of what is to be done and it is formally agreed by both the local authority and DETR. It sets out the activities to be pursued, the roles of the participants,

the target groups of householders to be approached, the resources to be utilized, the timing of the various parts of the project, and the exit strategy how the project period will draw to a close after the agreed period of action. The Guide provides advice on how to draw up an Action Plan.

Encouraging partnership

Working in partnership, both internally and externally to the local authority, can greatly enhance the effectiveness of the programme, and the Guide gives advice on the partners that might be encouraged to become involved and how co-operative working could then be developed.

Contacting householders

The main objective of the roll-out programme is to encourage householders with homes above the radon Action Level to carry out remedial action. Contacting householders at the right time, in the right way, with the right information is therefore very important. Guidance is offered which reflects the experience gained in the Pilot Studies.

Publicity and persuasion

If householders are to be persuaded to carry out remedial action then the messages used need to be carefully constructed, delivered through the appropriate medium, and consistent in what they are saying. Advice is given on how to achieve this.

Assisting the remediation process

In addition to raising awareness, disseminating information and delivering advice about radon remediation, a local project can actively assist householders by being supportive throughout the remediation process, which will greatly increase the likelihood of the householder seeing the remediation work through to completion.

Managing information

Based on the experience of the Pilot Studies, a lot of information will be generated during the roll-out programme which will be of lasting value to each local authority. This information can be best managed if a system is established at the outset to manage it. Advice is given on how to set about doing this.

Flow charts are provided throughout the text of the Guide where they help to establish the relationship between various steps in the process.

Copies of the Good Practice Guide have been made available, free of charge, to those authorities involved in the roll-out programme. Copies have also been made available to the 5 local authority Radon Steering Groups in England, for the use of their members.

Control of Radon in Mines

Jim Arthur, Her Majesty's Inspectorate of Mines

During the late 1980s the Health and Safety Executive's Mines Inspectorate measured radon in all UK mines (coal and miscellaneous) using passive dosimeters. Inspectors placed the dosimeters in the mines and then retrieved them after a period of one month. The dosimeters were sent to NRPB for analysis and the doses received by the mineworkers were calculated.

The results showed that all of the large coal mines were found to be virtually radon free, but many small coal mines and miscellaneous mines had potential radon problems. Numerous mines attracted supervised area status and several contained controlled areas. Reductions in the radon levels were achieved by maintaining positive ventilation systems in the working areas, sealing off old workings and controlling mine water.

A research project 'Evaluation of the effects of measures to Reduce Radon Daughter Concentrations' was carried out in the 1990s at three different types of mine: miscellaneous, tourist and a small private coal mine. The effectiveness of measures to reduce radon concentrations in these mines was evaluated from measurements with passive dosimeters and short term air sampling.

Under this project, concentrations were reduced by a factor of 10 in one mine by improvements to the ventilation system. Strong and rapid fluctuations in levels coinciding with operating times of fans were observed in two mines. The potential for radon concentrations to increase during working hours at some locations showed the importance of optimising fan operating cycles.

During the summers of 1994 and 1995, passive dosimeters were installed in 134 mines for one month periods. When the results were analysed it was shown that 64 mines had radon levels high enough to require measures to be taken under the Ionising Radiation Regulations 1985, with 30 mines at controlled area level.



The advent of the Ionising Radiation Regulations 1999 will not change the situation in most mines. Those that were previously affected by the Regulations will still be affected, and there will be some new entrants that exceed the new lower threshold. Risk assessments will be required for these new entrants.

In summary improvements can be made to reduce radon exposure levels quickly if:

- positive ventilation systems are installed and the residence time of the air underground reduced wherever possible
- working cycles are reviewed to coincide with fan operating times
- turbulent water is prevented, contained within pipes, covered up or re-routed out of intake airways. If it can't be prevented then turbulence should be prevented from occurring on the intake side of the working place
- old workings are sealed and leakage of air into the working place prevented

Using these principles, radon exposure levels were reduced by a factor of 3 in a tourist mine, and by a factor of 80 in a private coal mine.

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