NDAWG
National Dose Assessment Working Group

NDAWG OPEN MEETING
15th-16th November, 2006

Paper 10.07: Presenting Information to the Public

David Collier and Jane Simmonds

1 Introduction

From the beginning NDAWG included the presentation of information to the public in its planned work programme and it was specifically considered at its 5th meeting in April 2004. This came out of the Food Standards Agency, CEDA exercise (and also from the Radioactive Waste Management Advisory Group, RWMAC) which identified that there was the need for information on radiation doses to be provided to the public that they could apply to their own lives. This is a complex issue and many factors are involved. The attached paper (Collier, 2004) contains personal experience of the provision of information on low level radiation issues through public consultations, which explores some of these issues.

Work on presenting radiation exposures to the public had been carried out by the National Radiological Protection Board (NRPB, now part of the Health Protection Agency) and Greenstreet Berman for the Food Standards Agency. This study found that people thought information should be available but that all sources of exposure should be considered. It was also concluded that it was important to carry out trials with the public to make sure that any information was clear, understood and was what was wanted. Producing detailed personalised assessments of individual exposures from all sources of radiation (radiation doses) would be very time consuming and require significant resources. It was not felt in the FSA study and by NDAWG that this was worthwhile.

However, members of NDAWG did comment that they found the work done by NRPB to review the radiation exposure for the UK population very useful, especially the pie chart showing the relative proportions of different sources of exposure. NRPB were therefore asked to produce similar charts on a more localised, county, basis. As a trial pie and bar charts were produced for NDAWG for two counties, Cornwall and Cumbria. Cornwall was chosen as the highest natural background doses in the country occur here, while Cumbria was selected as this is where doses from artificial sources would be highest due to the location there of the Sellafield nuclear site. Although NDAWG thought that these charts were potentially useful the group felt strongly that there should be a trial involving members of the public to determine whether they were what was required and were easy to understand. This should happen before further work was carried out to extend the work to other counties in the UK. The results of this trial are summarised here.

2 Focus groups on the presentation of radiation dose information to the public

David Collier of Faulkland Associates and Jane Simmonds of the HPA jointly facilitated three focus groups at HPA Chilton and the Kingswell Hotel, Didcot in March 2006. Each lasted approximately 1.5 hours. The first group was predominantly made up of non-technical HPA staff members, the second comprised 8 ‘broadsheet reading’ members of the public, the third comprised 8 tabloid readers.

The main messages emerging were as follows.

Access to environmental information

- Ideally, people would like to access information on all the main environmental hazards through common 'gateway' websites and/or contact points. They would find high level information at the gateway level but would be routed elsewhere for the detail. People might be looking for information on a particular hazard, eg, Radon or for an overview of potential hazards in their locality. Some people would expect to find this on a Government website, others would ask at the local council first.
- There was support for the idea of having different levels of information for different people. This should start with very basic information but allow those who were interested to 'drill down' to get more detail.

Radiation and risk

- Participants did not seem to have any particular concerns about radiation in the Didcot area; they were more concerned about phone masts, for instance. Previous work has however shown there are differences between attitudes around Harwell and operating nuclear sites.
- They felt that information on radiation doses should be made available to people who were interested but it was important to avoid alarming people unnecessarily.
- Some suggested that the HPA was disseminating dose information because it thought that it should, rather than to meet any genuine demand. On the other hand, they could all see the need to be able to get reassurance that levels were 'safe' following a newspaper article (for example).
- There is no point in just presenting numbers that people do not understand (eg, 2.2 mSv) or in just comparing one place with another. It is important to also tell people what the 'safe' level is. Showing that the dose from radon in Cornwall is much higher than the UK average just causes concern so you also need to put this into context.
- The fact that there was no 'safe' level or threshold was understood but again caused some concern. If safety levels were not available, the level of risk had to be conveyed some other way. One possibility is to give the information in terms of risk and then compare this with other risks, though we already know that this requires considerable care.
- It is not intuitively true that all ionising radiation is equivalent. Also, when talking about ionising radiation it is necessary to explain that this is different from non-ionising radiation. This may be a difficult concept to communicate. Electric power lines and mobile phone masts are much more visible to people and so may come to mind when you mention 'radiation'.
- Some participants felt that including different types of natural radiation initially was too much information. It might be better to just give total natural and total man-made to start with.
- There was some support for the idea that natural and man-made radiation are basically the same, and maybe even carried equivalent risk. However, a majority felt that additional man-made radiation was still not acceptable without good justification, even if it were small in comparison to natural background. Opinions varied as to what types of application might be justified.

Presentation techniques

- Different people like different ways of presenting information, some preferred words and others different types of charts. It is therefore important to present information in different ways. Some people were interested in knowing how things were changing with time – were doses going up or down?
- Everyone is familiar with different types of charts, especially pie charts. However, charts can be misleading. For example, if the contribution from radon goes up from one pie chart to another, and hence the contributions from other sources go down, then the tendency is to assume that the absolute levels of the other sources have also gone down. '3-d' and 'exploded' pie charts might be more interesting (and useful for picking out small contributors) but could easily give false impressions.

- The focus groups provided useful detailed comment on different sorts of presentation, but the main objective in most people's view remained the need for charts that put the levels in some kind of context, eg, with respect to 'safe' levels.

Medical exposure

- People were not sure about including medical exposures in the total dose from all sources. There was the possibility that this would cause concern but also it was felt that such information should not be hidden. If it was included then it was important to make it clear what it meant (ie, includes diagnostic radiation but not cancer treatment).
- The question was raised, are we presenting data on medical-related dose because there is a message we are trying to convey, or are we answering specific questions people might have? What question might it be that requires the inclusion of medical data? The nature of the question would dictate if and to what extent medical data should be included.

On-line calculators

- A map is felt to be a good starting point for looking for information; other possibilities are postcodes and the county name.
- On-line dose 'calculators' seemed to interest some, others were put off by apparent complexity, especially given that there was no need to act and little that could be done with the results, at least as currently presented.

Conclusions

- Valuable information was gathered on the use of different presentation techniques, but the fundamental question posed by all the focus groups was, why are you doing it in the first place?
- The general view seemed to be that the HPA should not be disseminating information just for the sake of it, but that it should be 'consumer-led' and focus on the questions the public needed answers to.
- The main questions were not to do with the contribution of various sources, etc. They were to do with level of risk. Should we worry about this or not? If you do not answer this question alongside the data, you risk causing great and unnecessary concern.
- The HPA therefore needs to think about not just its use of presentation techniques, but also at ways of providing doses/risk information.
- It will be important to try proposed solutions out on different groups of the public to ensure that they are clear and are felt to be appropriate.

3 Further developments

Following the focus groups HPA-RPD has looked again at ways of presenting the doses from all sources to the public. One of the main concerns was that people would like something to compare the doses too. This is problematic as the dose limit for members of the public does not apply to natural background radiation and you can not say 'below this level you are safe'. However, the International Commission on Radiological Protection (ICRP) has given advice on protection of the public in situations of prolonged radiation exposure (ICRP, 1999). This advice includes recommended generic reference levels for intervention. It is stated that: '*An existing annual dose approaching about 10 mSv may be used as a generic reference level below which intervention is not likely to be justifiable for some prolonged exposure situations'.* We, therefore, felt that it would be helpful if 10 mSv was used in the context of presenting doses from all sources to the public as a level below which intervention may not be required to reduce those exposures which are due to naturally occurring radiation. Various ways of presenting the information have been considered and the main ones are given on the poster, which will be displayed at the Open Meeting and in an accompanying note. We would be very grateful for any feedback on the various options and will also be consulting through the focus groups.

4 Sub-group on communications

NDAWG has recently established a sub-group on communications. Its remit is to consider the presentation of information on radiation doses to the public. In particular it will address:

- Who is the audience for such information, eg, people being consulted on a proposed authorisation, local residents around a nuclear site, pressure groups.
- What kind of information people want
- How such information should be presented

Consideration should be given to retrospective and prospective dose assessments as well as to single dose estimates and probabilistic results. The group will need to review the research carried out for FSA [and others] and will need to develop their work programme with frequent reviews by the full NDAWG.

The sub-group has met three times and has been considering the type of people who might want information, the reasons they might want information and what they might want. Initially the Sub-group is focussing on two main tasks. Firstly, they are investigating the possibility of a joint meeting on communication with the Agricultural and Food Countermeasures Working Group to discuss the issues with a range of stakeholders. Secondly, they are planning to draft material for the Site Stakeholder Groups for nuclear sites. This will consider the licensing of nuclear site, the roles of all of the regulatory and advisory bodies, and address a series of questions on monitoring and compliance that are felt to be of interest. There will also be interaction with HPA regarding any relevant leaflets that may be produced to replace the NRPB 'At a glance' leaflets.

5 The way forward for NDAWG

The work on presenting doses from all sources on a county basis will continue. The aim will be to put such information on the HPA and the NDAWG websites having made sure that it is clear and is helpful to the public. The question then is what else should NDAWG do and what priority should be given to this work. In particular:

- Is it useful for NDAWG to produce the proposed leaflet for local Stakeholder groups located near nuclear sites?
- Should NDAWG concentrate on looking at methods for presenting information on radiation exposures to the public or on producing useful information (leaflets, etc) themselves?
- How should NDAWG interact with the other Agencies (HPA, EA, FSA, HSE) who also produce such material?
- How important is it for NDAWG to consider the presentation of uncertainties and the results of probabilistic studies to the public?

6 References

David Collier (2004). Provision of information on low level radiation issues. Experience of public consultations in the UK and Central/Eastern Europe. Paper presented at the fifth NDAWG meeting, April 2004.

International Commission on Radiological Protection (1999). Protection of the Public in situations of prolonged radiation exposure. *Ann ICRP*, **29**, 1-2, Pergamon Press.