

## NATIONAL DOSE ASSESSMENT WORKING GROUP

### SUMMARY OF AGREEMENTS AND ACTIONS FROM 5<sup>TH</sup> MEETING

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5<sup>th</sup> Meeting held on 27<sup>th</sup> April 2004, Aviation House London.

#### 1. Present

Chair	John Cooper	NRPB
Members	Rob Allott	EA
	John Asquith	Worcester County Council
	Laurence Austin	BNFL Magnox
	Jim Cochrane	SEPA
	Stuart Conney	FSA
	Darren Cutts	FSA
	Cathy Griffiths	RWMAC
	Ian Hall	Scottish Executive
	John Hunt	CEFAS
	Steve Jones	Westlakes Scientific Consulting
	Ray Kowe	NRPB
	Paul Marks	GE healthcare
	Jane Simmonds	NRPB
	Patrick Stephen	NII
	John Titley	EA
	David Webbe-Wood	FSA
Speakers	Bill Camplin	CEFAS
	David Collier	Consultant
	Joscelyne Shaw	Greenstreet Berman

#### Apologies:

Philip Day	University of Manchester
Michael Gaunt	Rolls-Royce
George Hunter	SEPA
Barrie Lambert	Consultant
Robert Larmour	Dept Environment (NI)
Ken Ledgerwood	Dept Environment (NI)
Nancy Lawton	DTI
Andrew Macpherson	DEFRA
Will Munro	FSA Scotland
Tim Parker	BNFL
Havard Prosser	National Assembly for Wales

Pete Roche

Greenpeace

Mike Thorne

Mike Thorne and Associates

## 2. Actions from the fourth meeting and matters arising (Paper 5-01)

Action 4.1 The secretariat has issued the draft letter for members to send to third parties to seek information on the research they are sponsoring.

Action 4.2 Rob Allott has received comments from several members on the unusual pathways paper and the paper is near completion.

Action 4.3 A dedicated e-mail address will be available for people to comment once the paper on unusual pathways has been put on the website.

Action 4.4 The sub group on uncertainty and variability in dose assessments met on 18<sup>th</sup> March 2004. Report back from the meeting will be discussed under a later agenda item.

Action 4.5 Rob Allott and Patrick Stephen have reworded the appropriate paragraph of principle 2 to cover different classification of workers. The reworded paragraph will go back to the solicitors for opinion.

**Action 5.1** Rob Allott and Patrick Stephen will circulate the rewording of principle 2 and the associated text to NDAWG after they have sought advice from the HSE.

Action 4.6 Rob Allott has received comments from several members on the principles paper.

Action 4.7 The principles report will be delayed whilst legal advice is being sought about the rewording of principle 2.

Action 4.8 The secretariat invited Pete Roche to be in the sub-group on habits data and critical groups, however he could not attend the meeting.

Action 4.9 The sub group on habits data and critical groups met on 19<sup>th</sup> March 2004. Report back from the meeting will be discussed under a later agenda item.

Action 4.10 The Steering Group response to the action on how to take forward the work on prospective dose assessments was appended to paper 5-01. NDAWG members agreed with the Steering Groups suggestions on how to take forward the work on prospective dose assessments

Action 4.11 Steve Jones received additional comments from several members on the use of measurements paper and also the comments from the meeting which had been collated by the secretariat.

Action 4.12 Steve Jones has produced a final version of the use of measurements paper. This will be placed on the NDAWG website as paper NDAWG/1/2004. Rob Allott's unusual pathways paper will also go on the website once completed, and the principle's paper at some later date.

Action 4.13 The authors of the RIFE report have given NDAWG permission to publish their summary table on the NDAWG web site.

**Action 5.2** The Secretariat will publish the RIFE summary table in the next update of the NDAWG web site.

### 3. FSA dose assessment methodology (Paper 5-02).

David Webbe-Wood presented his paper on the FSA approach to estimating doses. This is a revised version of the FSA paper on probable and possible dose (Paper 3-04) given by Zitouni Ould-Dada.

The Chairman asked if the FSA was formally asking NDAWG if the methodology met FSA's requirements to ensure that the foodchain was safe. David said that they were looking for an external review of the FSA methodology and that they had to estimate doses from all exposure pathways as there were no criteria for food alone.

There were a number of points raised on the paper. Rob Allott queried how the FSA ensured safety for other contaminants. David informed him that this was done via measurements and the use of national UK data rather than prospective assessments. Steve Jones asked about dioxins in food and whether the food was uniformly contaminated or from point sources. Cathy Griffiths wondered if the FSA methodology of calculating doses at points of maximum deposition was over cautious and could lead to doses that are several orders of magnitude more than doses calculated from retrospective sampling and how this might be worrying to the general public. Jane Simmonds had some concern on the validity of using the 97.5 percentile for a partial distribution and that the FSA were not presenting the true range of doses. Stuart Conney said the FSA use of single percentile values was an interim step and that they hope to present a full range of potential doses in future.

Steve Jones stated that the FSA need to clarify the numbers they are presenting as there is some confusion in 'possible' and 'probable' dose. Some thought must be given as to the presentation of a range of doses to the public and the use of statistics on habit data to give the range of doses. Rob Allott also suggested that the FSA should consider separating out doses from different exposure pathways. Jane informed the members that an approach to calculating total dose had been discussed at a recent Steering Group meeting (see next agenda item) and suggested that the FSA should consider using the same approach. Bill Camplin asked if the subgroup on habit data and critical groups were doing any work on distributions and statistical simulations that could be used to see how skewed the distributions they are using actually are.

Rob Allott informed David that the EA use a top down approach to selection of habit data which has more chance of representing critical group values. He was concerned that the FSA approach was not following ICRP recommendations. David said that the FSA was following basic ICRP principles but with a different

statistical method. Steve Jones expressed the opinion that the ICRP definition of homogeneity in terms of habits that effect dose are fine for one pathway but may need to be reworded for multiple pathways. John Hunt added that the ICRP definition of homogeneity needs to be in terms of effective dose rather than other factors such as age etc. He has written a note to the Journal of Radiological Protection on this subject. Ian Hall wondered if habit data were only a secondary factor in dose assessments in comparison to differences in concentration in the environment. Calculations often use concentrations which may be two orders of magnitude greater than measurements.

The chairman concluded that there was some disquiet amongst members about aspects of the FSA methodology, in particular: calculating doses at points of maximum deposition and how the 97.5 percentile doses relate to what we understand as the critical group. He stated that ICRP recognised the need for further guidance on critical groups and was developing this.

**Action 5.3** Members to submit written comments to the FSA on the paper 5-02 by the end of June.

**Action 5.4** The FSA will address members comments at the next (6<sup>th</sup>) NDAWG meeting

#### 4. Total dose methodology for RIFE (Paper 5-03).

Rob Allott gave a short introduction to the paper and reported on a meeting held on 23 April which had discussed the paper in detail. He informed members that of the 5 options suggested for integrating doses across pathways, option E is the favoured with option A second. If NDAWG members have no objections to the use of option E then an appendix will be added to the next RIFE report showing doses calculated using option E for a few sites. Bill Camplin then presented the paper explaining the methodology and application to 3 trial sites, and how the options were selected.

Steve Jones suggested the use of the 25x25 matrix as in option E for assessments and the occasional use of the full 25x300 matrix (option A) to keep a check on the results. He also suggested that the data for the full matrix should be published for transparency. Cathy Griffiths asked if the 25x25 matrix would be robust enough for use by small users. Rob Allott said the 25x25 matrix would flag which groups are likely to receive the highest dose. Members agreed that it would be useful to publish the full matrix of data on a cd rom with a user document.

**Action 5.5** Members to send any objections on the adoption of option E to Rob Allott/Bill Camplin by Friday 7<sup>th</sup> May, and general comments on the paper by the end of June.

**Action 5.6** The FSA and CEFAS to submit an amended paper to take account of members comments to be published as an NDAWG paper.

## **5. FSA project on presenting doses to the public (Paper 5-04), Provision of information on low level radiation issues (Paper 5-05).**

Joscelyne Shaw gave a talk on a project on how information on radiation doses could be presented to the public in a way that they could apply it to their lives.

David Collier then gave an overview of the issues involved in providing the general public with information on low level radiation issues.

There then followed a detailed discussion amongst members on some of the points raised by papers 5-04 and 5-05. The Chairman recommended that the key points of the discussion should be recorded including information on total doses and the presentation of variability.

**Action 5.7** The Secretariat will produce a one page list of bullet points of key issues of the discussion on presenting dose to the public which will be circulated to members for comment.

**Action 5.8** The Steering group should consider how estimates of total dose, including natural background could be made.

## **6. Report back from Subgroup on uncertainty and variability in dose assessments, and work plan (Paper 5-06)**

David Webbe-Wood informed members of the progress of the Subgroup. He said that the Subgroup was seeking their endorsement of the work plan for the production of a short document describing the issues relating to the uncertainty and variability in dose assessments and the subsequent paper on giving advice on when to carry out probabilistic assessments.

Members agreed to the work plan and proposals from the Subgroup.

## **7. Report back from Subgroup on habit data and critical groups (paper 5-07)**

John Hunt gave details of the first meeting of the Subgroup in the absence of Mike Thorne, the sub-group Chair. Members were invited to comment on the revised terms of reference of the Subgroup, the technical issues which were raised at the meeting, and the forward work programme which is structured to produce a position paper for consideration by NDAWG at the next meeting.

Members agreed on the revised terms of reference with the following amendment: the term of reference 'use of habits survey and dosimetric data for infant, child and adult' should be reworded so that it is clear that the adult dose covers the mother/fetus as well as the male dose.

**Action 5.9** The Subgroup on habit data and critical groups to amend the term of reference 'use of habits survey and dosimetric data for infant, child and adult' to include dose to mother/fetus.

Members agreed on the forward work programme and the timescales with the following amendment to the content of the position paper: sub-paragraphs 4.1 and 4.2 should include more detail on definition of 'locally produce foodstuffs' in the context of prospective assessments.

**Action 5.10** The Subgroup on habit data and critical groups to modify sub-paragraphs 4.1 and 4.2 of the position paper to include more detail on definition of 'locally produced foodstuffs' in the context of prospective assessments.

The wording of the last but one technical issue will be changed to 'however, evidence that this has occurred is in practice rare, and where it has been observed it has been said to be due to the presence of non-radioactive contaminants and from other sources than the site under survey'.

## 8. Report back from members

### *8.1 ICRP*

The main commission had met recently and there will be a presentation at the IRPA conference in May outlining the new recommendations. There will then be a 6 month period in which to comment on the recommendations via the ICRP website. It is proposed to discuss the draft recommendations at the next meeting of NDAWG with the aim of providing comments to ICRP. It would be helpful if members could raise points in advance for discussion at the meeting.

**Action 5.11** NDAWG members to pass comments on the ICRP recommendations to the Secretariat by the beginning of October.

**Action 5.12** The secretariat will prepare a synopsis of comments for the 6<sup>th</sup> NDAWG meeting so that NDAWG can comment on new ICRP recommendations as a group.

### *8.2 BRITISH ENERGY*

Laurence Austin reported that British Energy is undergoing a reorganisation. Four Magnox sites may undergo a change of ownership which will require a new set of authorisations.

### *8.3 AMERSHAM*

Paul Marks informed members that Amersham has now become part of GE Healthcare.

#### *8.4 FASSET*

Steve Jones reported that the project was now complete and that 6 deliverables are available on the FASSET web site. A 3 year follow-up project, ERICA (Environmental Risk from Ionizing Contaminants: Assessment and Management), will focus on applying the FASSET framework to a number of sites including one in the UK. A special edition of the Journal of Radiological Protection based on FASSET will be published in December 2004.

#### *8.5 FSA*

David Webbe-Wood reported that the FSA were consulting on a new 5 year plan. The link to the Agency's consultation on its draft strategic plan is:

<http://www.food.gov.uk/news/newsarchive/agencynewstrategicplan020404>

and the link to the review of the radiological research programme is:

<http://www.food.gov.uk/science/research/researchinfo/radiologicalresearch/radioactivityenvironment/r01programme/radioprogsreview>

#### *8.6 RWMAC*

Cathy Griffiths informed members that Ministers had now put RWMAC into abeyance for the two to three year period during which CoRWM is compiling its recommendations on future policy for the long-term management of the UK's higher activity radioactive wastes. However, there will be a full RWMAC committee meeting in June. RWMAC members have funding for one more year and are still active on other groups. The website is still running.

### **9. NDAWG review (paper 5-09)**

#### *9.1 TERMS OF REFERENCE*

Members reviewed the terms of reference to see whether they were being carried out. The following specific points were raised:

Reference 5 - Work had progressed in this area with the preparation of Rob Allott's Principles paper and a paper for the IRPA conference.

#### *9.2 FUTURE WORK PROGRAMME*

The outline agendas for meetings 6 and 7 were discussed.

Speakers are required on the topic of protection of biota for meeting 6 and a number of possibilities were discussed. Rob Allott agreed to co-ordinate this part of the meeting and to arrange for appropriate speakers.

**Action 5.13** Rob Allott to co-ordinate discussion on the protection of biota for meeting 6 and to invite speakers.

Ian Hall informed members that the term 'small users' was misleading and in Scotland had been replaced by 'Scottish non-nuclear liaison group'.

### *9.3 POSSIBLE SUBGROUP ON MODELLING*

The Steering group has identified a need for a future subgroup on modelling to look at where modelling is adequate and where more work is needed. Lawrence Austin identified direct radiation as an area which may require further modelling work. Members concluded that this subgroup will be set up when the Retrospective Assessments subgroup had finished.

**Action 5.14** The Steering group and Secretariat to identify a potential list of members and draft terms of reference for the Modelling subgroup. This will be drawn up as a paper and presented at the 6<sup>th</sup> NDAWG meeting.

### *9.4 COLLATING ONGOING RESEARCH*

The Secretariat has now received contributions from several NDAWG members. These will be available in the next update of the website. Members were encouraged to keep contributing.

### *9.5 WEBSITE*

The website is still receiving a favourable amount of interest with 1702 files accessed since September 2003.

### *9.6 NDAWG MEMBERSHIP*

Pete Roche has left Greenpeace. The Chairman asked members for suggested replacements for Pete if he can no longer continue to attend. David Webbe-Wood said that FSA would continue to provide funds for travel and subsistence for Pete's possible NDAWG successor.

## **10. A.O.B**

Members agreed that the presentation of papers at the beginning followed by feedback from subgroups was the preferred agenda format.

## 11. Date of next meeting

The next meeting will take place on 16<sup>th</sup> November 2004 at FSA, Aviation House, London.

## 12. Summary of Actions

Action 5.1 Rob Allott and Patrick Stephen will circulate the rewording of principle 2 to NDAWG after they have sought advice from the HSE.

Action 5.2 The Secretariat will publish the RIFE summary table in the next update of the NDAWG web site.

Action 5.3 Members to submit written comments to the FSA on the paper 5-02 by the end of June.

Action 5.4 The FSA will address members comments at the next (6<sup>th</sup>) NDAWG meeting

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Action 5.6 The FSA and CEFAS to submit an amended paper (cut down with members comments) to be published as an NDAWG paper.

Action 5.7 The Secretariat will produce a one page list of bullet points of key issues of the discussion on presenting dose to the public which will be circulated to members for comment.

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NDAWG Secretariat 7 May 2004

## Issues arising from presentation of dose to the public

- People want concise information and transparency on (health) risks. They want to hear all sides of an argument, and then form their own opinion, which is currently judged to be difficult to achieve.
- The general public are aware of risks, but there is some debate over the circumstances under which the distinction between imposed and voluntary risks becomes significant.
- In part people want information to try and change involuntary risk to something they have some degree of control over. People/bodies which help them do this often gain their confidence.
- People are more likely to trust information from local sources e.g. GP's, local councillors, local environmental health officers, health authorities. They have greater understanding of the local environment and therefore are more likely to provide information in context i.e. what is a significant risk in relation to the scale and potential of all local hazards.
- Local sources may not have the ability to provide information on radiological incidents or ongoing issues. Such sources can be better supported by organisations such as the FSA.
- Consistency in communication is important.
- Recent focus groups suggest strong support for a single starting point for the public which then directs them to more detailed information on environmental hazards, perhaps analogous to the NHS Direct helpline.
- It was suggested in the focus groups that people want information on exposure from all sources of radiation (and even all health risks) not just from discharges.
- Access to routine information becomes more helpful as people become more familiar with a subject.
- Public perception of radiation is very different depending on the situation and whether the cause was (for instance) a medical intervention or an accident involving a fuel rod.
- People generally have little feel for the objective level of risk from radioactive substances and there is a difficulty communicating dose and risk; people want information on dose as long as it is put into context.
- Nevertheless the public response should not be seen as 'irrational'. It is often a reasonable response, given the level of apparent disagreement about low level radiation issues reported in the media.
- If comparative dose information is provided, people may erroneously perceive there to be a hazard and act on it inappropriately. Equally, where there is a hazard that they should act upon, people sometimes choose not to act due to other factors (social, economic, practical) e.g. people living in areas of high radon exposure.

- There are a number of issues in presenting safety limits versus discharge limits.