

NATIONAL DOSE ASSESSMENT WORKING GROUP

PAPER 12-08: REPORT BACK FROM THE HABITS SUB-GROUP

1. Introduction

After a substantial interval, the Habits Subgroup met on 19th October 2007 to discuss its Terms of Reference (ToR) and to reconsider the structure and content of its second paper on prospective dose assessments. A record of that meeting has been produced and is appended to this report as Appendix A. The proposed outline of the second paper is provided as Appendix B and the proposed revised ToR are provided as Appendix C.

2. Revised Terms of Reference

Proposed revised ToR were previously submitted to the 9th meeting of the NDAWG. At that time, members of the NDAWG discussed the proposed ToR and felt that the last two bullet points were the most vital and that the first 9 bullet points were essentially outlining what work would be done to meet them. It was considered that the important thing was for the group to characterise habits data applicable to the five year period of an authorisation. Following this discussion, the NDAWG placed an action on Habits Subgroup to draw up new terms of reference and a revised structure for the paper on habits data for prospective assessments and issue to NDAWG members for comment. At its meeting on 19th October 2007, the Habits Subgroup revised its proposed ToR, taking note of the comments of the NDAWG on the previously proposed ToR. The updated proposed ToR are provided as Appendix C. It should be noted that these ToR are restricted to prospective assessments, as the Subgroup considers that its work on retrospective assessments is complete. It is also considered that the work to be undertaken under the updated proposed ToR will be completed when the second paper from the Subgroup is finalised (see Section 3). **The NDAWG is requested to review and endorse these updated proposed ToR.**

3. Second Paper from the Habits Subgroup

An outline of the second paper from the Habits Subgroup was submitted to the 9th meeting of the NDAWG for discussion. Only limited comments on the structure were provided by members of the NDAWG at that time. However, when the Subgroup revisited the report outline at its meeting on 19th November 2007, it was recognised that the proposed structure did not adequately address all the issues that need to be considered and gave more weight to examples of assessments than was justified, since the paper needs to be focused primarily on issues of principle. For this reason, a new outline structure was drawn up (see Appendix B).

It was also recognized that development of this second paper had been unduly delayed, largely because of other demands on the time of the chair of the Subgroup. Therefore, the Subgroup devoted some time to partitioning work on writing the paper amongst its

members, to ensure that it can be written rapidly and relying on material that is readily available to the members assigned to write the individual sections. The Subgroup has established a realistic timescale for writing the paper, with individual contributions to be provided by the end of January/beginning February 2008. This will permit the paper to be compiled by the chair and distributed to members of the Subgroup in February 2008 and for a completed version to be submitted to the NDAWG for review at its 13th meeting.

The NDAWG is invited to review and comment upon the revised outline of the paper provided in Appendix B.

4. Future of the Subgroup

It is anticipated that the current programme of work of the Subgroup should be largely complete by the 13th meeting of the NDAWG. However, it is recognised that there may be some ongoing work required to finalise the second paper for publication. Dr M C Thorne will be able to continue to chair the Subgroup through to the 13th meeting of the NDAWG, but, beyond that time, overseas commitments mean that he will not be in a position to continue as chair. The NDAWG Steering Committee will need to give consideration to whether it sees a need for the Habits Subgroup to continue after the 13th meeting of the NDAWG and, if so, what arrangements need to be made for appointment of a new chair.

M C Thorne
9 November 2007

APPENDIX A: RECORD OF THE MEETING OF THE HABITS SUBGROUP HELD ON 19 OCTOBER 2007

Minute of NDAWG Habits Subgroup Meeting, 19th October 2007, Room 601, Aviation House
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Chair:	Mike Thorne (MCT)	Consultant
Minutes:	Paul Kennedy (PK)	FSA
Present:	Mike Gaunt (MG)	Rolls-Royce
	Rachel Smith (RS)	HPA-RPD
	Fiona Clyne (FJC)	Cefas
	John Tittley (JGT)	The Environment Agency
	David Webbe-Wood (DWW)	The Food Standards Agency
Apologies:	Robert Larmour	Department of Environment, NI
	John Hunt	Cefas

1. Introductions and Outstanding Actions

Dr Thorne opened the meeting and introduced the members of the group to the new secretary. Fiona Clyne, the Lead Habits Survey Manager for England and Wales at Cefas, replaced John Hunt as Cefas representative at this series of meetings.

There were three outstanding actions from the last meeting:

- **Action 9.4 – The Habits Sub-Group to give advice on specification of consumption rates and zero or low occupancy rates.** This was discussed at the meeting and, as the chair understands, relates to scenarios where consumption rates or occupancy rates are low, but may be the largest contributor to a calculated dose.
- **Action 9.6 – The Habits Group to draw-up new terms of reference and a revised structure for the paper on habits data for prospective assessments and issue to NDAWG Members for Comment.** This formed much of the Discussion and these documents were circulated to Sub-Group members immediately after the meeting.
- **Actions 9.7 – Mike Thorne to contact Peter Roche of Greenpeace to see if he would like to remain a member of the Sub-Group or to suggest another NGO Representative.** From the understanding of the Sub-Group, the lack of an NGO Representative is common to all of NDAWG and not specific to this group. The Chair felt it would be expedient to discuss other options, such as the possibility of Local Authority members in lieu of Mr Roche. Another option was to include Peter Roche or NGO Representative as a corresponding member. The Group agreed that this is maybe something to be fed back to the wider NDAWG community for comments and advice. On a separate point, it was noted that Nirex representation on the NDAWG will no longer exist. If this is replaced by NDA corporate involvement, the NDA may wish to be represented on the Habits Sub-Group.

A side issue was the possibility of a “small users” representative at the meetings – again this is a wider problem with NDAWG. PK said that he was attempting to ameliorate this situation in discussion with the Thames RPA Area representative on SULG for Recruitment of a replacement for Mandy Moreton for the main NDAWG Meeting. As with the NGO issue, it was felt that this would be best to feed this back to the wider NDAWG community for comments and advice.

Action DWW – To take the problem of a NGO Member to the steering group.

Action MCT – To Write to Pete Roche to ask him if he would be happy to remain a member of this subgroup, as either a full or a corresponding member.

2. Progress with Habits Paper to Date

This is largely contained in the NDAWG Paper 09-09. However, there has not been any progress since this Sub-Group last met in 2006.

As the group has largely dealt with retrospective assessments, it was felt that the thrust of this and further meetings would be on prospective assessments; specifically the scope of this meeting was development of a revised outline for the prospective assessment paper and revised terms of reference.

As well as the Issues for consideration as Agenda Item 3, the subject of New Build was also discussed, but it was agreed that the scope of the paper will deal with current sites, with the habits data being used for a maximum of ten years. As the potential importance of sites in a new build framework is likely to be beyond the time-frame of this round of work by the Sub-Group, it was felt that this ought not to be included in the prospective assessments paper, although this topic may be something to be reviewed at a later date.

As a result of this meeting, a revised Outline of the Prospective Assessments Paper (PAP) was drawn up (see Appendix B), with tasks and sections delegated to each member and a revised “terms of reference” (see Appendix C) was drawn up and will be reported back to the main NDAWG meeting. The Deadline for the contributions to the PAP will be end January/beginning February 2008 in advance of meeting of the Sub-Group before the April main NDAWG Meeting.

Action on All - to have drafts of their sections of the paper ready by end January 2008/beginning February 2008.

3. Issues for Consideration

- **Methods for obtaining integrated habits data around particular sites:** we have information from the regulators as to how they obtain their data and the methods used to evaluate critical groups, but one thing pointed out is that there has been nothing mentioned on how the nuclear industry gets its habit data that the industry uses in its assessments. For assessments involving small users, the small users themselves tend to make assessments using the method in NRPB-W-63. Generic habit data are drawn from NRPB-W41. The EA also have an the “Initial Assessments Method” developed by Lambers and Thorne which also makes use of generic habit data from NRPB W-41
- **The use of national survey and site specific data:** With a couple of exceptions, there are habits data for every licensed site in the UK. For prospective assessments, habit data are drawn from these surveys using the profiling method currently used in retrospective dose assessments. The profiling method provides habits that make up a series of reference individuals who represent groups of people. One of the reference individuals is most exposed and is the critical group. There are some shortcomings to the profile method. Other methods have been employed in the characterisation of critical groups in the past by the different organisations represented. The paper will take into account the various strengths and weaknesses of each method. Alternative approaches will be taken into account in the paper. It is noted that from the point of view of public exposure to direct radiation, the onus is usually on the operator to provide an assessment of dose.

In the case of non-nuclear sites (small users), due to the effort required, the costs and the number of locations, full local habits surveys would be impractical. Even where some local information was available, there would be a need to use national survey data to plug certain knowledge gaps. Generic and national survey data are particularly useful when undertaking a screening assessment.

There was a certain amount of uncertainty in the Sub-Group about how the data are used in Scotland.

Action on JGT – to liaise with SEPA to find out relevant information about the use of habits data in Scotland.

- **Data for Different Age Groups**
This was not discussed in any great depth, but it will be dealt with in the paper. However, there was discussion on how the data for adults is currently scaled for use for different age groups. It can be the case that there can be data gaps for infants and children under 15.
- **Adequacy of Data on Occupancy**
One of the issues raised was on the question of whether the data used are conservative enough from the regulatory point of view.
- **“Locally Produced Food”**
This was not explicitly discussed at the meeting.
- **Assumptions About Where People Live and Obtain Food in Dose Assessments Together with Combination of Pathways**
This was partly covered when discussing the reporting of the data and the receptor.
- **Data Analysis**
As with the issue of locally produced food, this was not discussed explicitly at the meeting.
- **Criteria**
It was agreed that the criteria against which to make recommendations for best practice were: compliance against time, robustness, transparency, scientific basis, compatibility with ICRP recommendations. The final criterion discussed was that of “plausibility”. However, the problem with this word is that, with the best intentions, the word can mean the opposite of “truthfulness” which was the intended meaning in this context.

4. AoB and Date of Next Meeting

There was no other business and it was agreed that the next meeting would take place in early March 2008.

Action on PK – to trawl for suitable date in March 2008.

**Paul Kennedy
Emergency Planning, Radiation
and Incidents
Division**

APPENDIX B: OUTLINE OF THE HABITS SUBGROUP PAPER ON PROSPECTIVE ASSESSMENTS

The following revised structure of the second paper from the Habits Subgroup was defined at the meeting of the Subgroup held on 19 October 2007. Authors assigned to each Section or Subsection are shown. Where an author is responsible for all Subsections in a Section, their name is only shown against the Section as a whole. Initials of authors are as defined in Appendix A.

1 Introduction (MCT)

- 1.1 Terms of Reference
- 1.2 Scope of Prospective Assessment
- 1.3 Issues addressed in this report
- 1.4 Audience of this report
- 1.5 Structure of the report

2 Context

- 2.1 International Guidance (RS)
- 2.2 UK legislation and regulations (JGT)
- 2.3 Purpose of prospective assessment (JGT)
- 2.4 Organisations involved in preparing and reviewing prospective assessments (JGT)
- 2.5 Reporting of prospective assessments and habits data (JGT)

3 Types of Habits Data

- 3.1 Non-site-specific data (DWW/RS)
- 3.2 Site-specific data (DWW)

4 Current UK Agencies' Approach to Dose Assessment

- 4.1 Overall approach (JGT)
- 4.2 Assessments where integrated site habits data are available (JGT)
 - 4.2.1 Identification of receptors (includes different age groups)
 - 4.2.2 Characterisation of receptors (including location of groups and food production)
- 4.3 Approach where integrated site habits data are not available
 - 4.3.1 Approach where some site-specific data are available (DWW)
 - 4.3.2 Approach where no site-specific data are available (RS)

5 Other Approaches

- 5.1 Approaches used overseas (MCT/All)
- 5.2 Approaches used by industry (MCT)
- 5.3 Approaches used in solid waste assessments (MCT)
- 5.3 Approaches previously used or considered in the UK (DWW)

6 Critical Review of Approaches (MCT)

- 6.1 Criteria to be judged against {to include time-proofing, degree of robustness, transparency, scientific basis, compatibility with ICRP recommendations, plausibility (but see also Appendix A)}.

6.2 Illustrative calculations including comparison with screening approach

6.3 Evaluation of approaches

6.4 Possible modified approaches

7 Recommended approaches and implementation (MCT)

7.1 Recommended approach and reasons for recommendation

7.2 Implementation of recommended approach

7.3 Data requirements and implications for future habits surveys

APPENDIX C: PROPOSED REVISED TERMS OF REFERENCE

The aim of this subgroup is to consider the use of habits data in assessing individual doses and in defining critical groups for prospective assessments. Overall, the sub-group will consider and identify:

- Good practice for the use of habits data in prospective assessments;
- Approaches that should be used, including any core/common parts that should be adopted in all assessments;
- The need for acquisition and analysis of additional data, or the processing of data collected for other purposes.

To do this the group will consider:

- The contexts in which prospective assessments are undertaken;
- The current use of local, national and other habits data in such assessments;
- The types and amounts of data available;
- Locations of groups and food production;
- Approaches taken in other countries and in the context of solid waste disposal;
- The implications of the various approaches.