NATIONAL DOSE ASSESSMENT WORKING GROUP

PAPER 9-06: REPORT BACK FROM SUB-GROUP ON MODELLING

3rd meeting held on 25 January 2006, Aviation House London.

Present

Chair	Rob Allott	EA
Regulators/agencies	John Titley	EA
	Marcus Grzechnik	CEFAS
	Ellis Evans	FSA
	Britta Gadeberg	FSA
	Paul Kennedy	FSA
	Ray Kowe	HPA
	Jane Simmonds	HPA
Scientific Consulting	Mike Thorne	Mike Thorne and Associates

The Chairman welcomed Mike Thorne, Britta Gadeburg and Paul Kennedy to the sub-group and explained its terms of reference and summarised the work to-date.

1. Apologies

Mike Poole. Ciara Walsh has withdrawn from the subgroup as she has moved to Nirex.

2. Minutes of previous meeting 21 September 2005

Action 2.1 Rob to tidy up the document by the end of the first week in October and issue it to the subgroup. Completed.

Action 2.2 Members to get comments back to Rob by the end of October. Completed.

3. Comments raised at 8th NDAWG meeting

The draft paper entitled "Overview of radiological assessment models – key gaps and uncertainties" was favourably received at the eighth main NDAWG meeting. There had been one comment by Tim Parker who was concerned that real doses from actual discharges, e.g. of radioactive iodine, were small but that predicted doses were not small and that this might mean a higher priority for research than was warranted. Rob said that a note about this would be made in the paper and that the subgroup would go back and review low ranking risks. These will revisited again in the future when there are more data available. Mike added that a footnote on the tables may be useful for where we have measurements on a specific radionuclide.

The subgroup then addressed Mike Thorne's comments on the paper, this resulted in some minor changes to the paper including:

In paragraph 21 'transfer factors' would be changed to 'transfer rates'.

The uncertainty score for Am241 in table 5 'transfer to sediments' would be changed to a 3.

Mike said that he would take forward any points raised on habits in today's meeting and anything concerning habits in paper 8-07 to the meeting of the subgroup on habit and critical groups, which was being held the following day.

4. Disposal to sewer

Members decided the best way to proceed was to draw up a list of relevant issues concerning sewers and then carry out the scoring based on the same criteria for significance and uncertainty which was used previously. Members drew up a list of issues to be considered, including:

1. Dispersion/behaviour in sewer
2. Dispersion/behaviour at sewage treatment works (STW) including liquid, gaseous and solid phases
3. External dose in sewer and STW and transport
4. Internal dose at STW
5. Application to land including frequency, treatment standard, form, food type, soil standards and regulation
6. Transfer to soil
7. External dose
8. Transfer to food
9. Food dose
10. Internal non foods
11. Incinerator partitioning

Issues not covered were:

Groundwater, runoff from leaching of sludge

Landfill

Special form and tertiary treatment at STW

Members then went through each issue and scored against the dose and uncertainty criteria for a list of radionuclides important for sewers. Where possible

the score for dose was based on the EA database of permits for discharges to sewer and dose per unit release data from the initial radiological assessment methodology.

The high scoring areas were then drawn up into draft recommendations for targeting future work, including:

- Treatment at STW – continue research on partitioning including degassing. Understand partitioning at key process steps especially where recycling is important.
- External dose at STW – occupancy, proximity, geometry and shielding.
- Better overview of application of sewage sludge to land in relation to sewage works size including amount of land conditioned and food types produced.
- Continue and broaden work on transfer of radionuclides to soil and then into foodchain, particularly for H3 and C14.
- Scope realistic doses from incineration of sludge and, if doses are potentially high review partitioning and abatement factors.

Action 3.1 Rob to consider pathways not in the list of sewer issues in the unusual pathways paper.

Action 3.2 Rob to add sewers to paper "Overview of radiological assessment models – key gaps and uncertainties" and to circulate to members of the subgroup by 17th February.

Action 3.3 Subgroup members to send Rob comments on the paper by 17th March.

Action 3.4 Rob to add members' comments to paper by the 24th March and to circulate to main NDAWG group by 7th April.

5. Progress on recommendations

Ellis informed members that Stuart Conney, David Webbe-Wood and he were considering ways of including some of the subgroup's findings as areas for future FSA work.

Rob informed members that the EA had identified 3 rivers for a scoping study of phosphorus-32 in fish.

6. AOB

Depending on the views of the main NDAWG group the subgroup on modelling may disband and a new subgroup on short term releases may be formed.

7. Summary of Actions

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Ray Kowe, 30 January 2006