

NATIONAL DOSE ASSESSMENT WORKING GROUP

SUMMARY OF AGREEMENTS AND ACTIONS FROM 11TH MEETING

11th Meeting held on 25th April 2007, Aviation House London.

1. Present

Chair	John Cooper	HPA			
Members	Rob Allott	EA			
	Kwabena Andam-Guggisberg	FSA			
	Stuart Conney	FSA			
	Andrew Craze	NDA			
	Ian Fairlie	Consultant			
	Ian Hall	Scottish Executive			
	Steve Jones	Westlakes Scientific Consulting			
	Gerald Hudd	Somerset County Council			
	Paul Kennedy	FSA			
	Ray Kowe	HPA			
	Barrie Lambert	Consultant			
	Mike Poole	NDA	Radioactive	Waste	Management
			Directorate		
		Catherine Retberg	Springfield Fuels		
		Ian Robertson	SEPA		
		Jane Simmonds	HPA		
	Patrick Stephen	NII			
	John Titley	EA			
Speakers	Bill Camplin	CEFAS			
	Rachael Smith	HPA			

Apologies:

Laurence Austin	British Energy
Andrew Corns	GE Healthcare
Paul Dale	SEPA
Philip Day	University of Manchester
Michael Gaunt	Rolls-Royce
John Hunt	CEFAS
Robert Larmour	Dept Environment (NI)
Will Munro	FSA Scotland
Tim Parker	BNFL
Havard Prosser	National Assembly for Wales
Pete Roche	Consultant representing Greenpeace
Mike Thorne	Consultant

David Webbe Wood FSA
Chris Wilson DEFRA

The Chairman welcomed the new members:

Kwabena Andam-Guggisberg of the FSA

Ian Fairlie an additional NGO/independent

Gerald Hudd from Somerset County Council

Catherine Retberg Springfield Fuels

Mike Poole on behalf of Lucy Bailey and Simon Morgan as representative of NDA Radioactive Waste Management Directorate

Ian Robertson on behalf of Paul Dale from SEPA

He also noted that Amanda Moreton has gone on a career break but is hoping that the IPEM Radiation Protection Special Interest Group (RP SIG) will recommend a replacement for her as non-nuclear user representative. Also, Jill Sutcliffe (Natural England) is joining NDAWG as a new member

2. Minutes of last meeting and matters arising (Paper 11-01)

Ongoing actions from 8th meeting

Action 8.1 The Secretariat to liaise with the Steering Group over including a small users section on the NDAWG website. *This was done and launched at the Open Meeting. Completed.*

Action 8.2 The NDAWG Secretariat to produce a first draft of the assessment protocol and to send to members for comments before it is brought back to the 9th NDAWG meeting. *This has been overtaken by events and there was an additional action from the Open meeting. A note has been produced and circulated - see matters arising for the Open meeting. Superseded.*

Action 8.3 Steve Jones to draft a definition for the term 'transparency' for authorisation dose assessments. *See 8.2 Superseded.*

Actions from 9th meeting

Action 9.1 Jane to further develop ideas on presentation of dose to the public and to present the work to NDAWG at the Open meeting. *Completed.*

Action 9.2 The Secretariat and Steering committee to ensure NDAWG's position on the protection of biota is discussed at the Open meeting. *Completed.*

Action 9.3 Rob Allott to ask Bill Camplin of CEFAS to ensure that the habits data profiles are given to 2 significant figures. *Completed.*

Action 9.4 The habits subgroup to give advice on specification of consumption rates and zero or low occupancy rates. *The Habits subgroup has not met. Ongoing.*

Action 9.5 Steering committee to draw up with terms of reference for the short-term releases subgroup and to consider membership of the subgroup. *Completed.*

Action 9.6 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. *The Habits subgroup has not met. Ongoing.*

Action 9.7 Mike Thorne to contact Pete Roche to see if he would like to remain as a member of the habits subgroup or to suggest another NGO representative. *The Habits subgroup has not met. Ongoing.*

Action 9.8 NDAWG members to send comments on revised 2005 ICRP recommendations to Jane who will compile them. *Completed.*

Action 9.9 Rob Allot to email Amanda Moreton the link on the EA methodology for assessments for small users. *Completed.*

Action 9.10 HPA and FSA to identify a speaker on EMRAS for a future NDAWG meeting. *EMRAS will be added to the list of future meetings for 2008 as work will finish November 2007, a speaker will be identified then. Ongoing.*

Action 9.11 Steering committee to consider having a Local Authority representative to talk at the Open meeting. *Gerald Hudd of Somerset County Council has joined NDAWG. Completed.*

Matters arising from 9th meeting

Initial monitoring studies have indicated there is some uptake of phosphorus by certain fish species in the River Cam, East Anglia. The EA has secured funding for further research with David Copplestone as the project manager. John Titley is writing the project proposal which will be passed to the FSA for agreement of the specification.

The short-term releases subgroup has held its 2nd meeting. Rob will report on progress in paper 11-07.

Minutes of the Open meeting and matters arising

The Chairman stated that he thought that the Open meeting had been a success and should be repeated on a five yearly basis, members concurred. He felt that attendees gave the overall view that NDAWG was producing useful output and should continue, but that the group needs to publicise itself more.

Rob Allott suggested that longer breakout sessions would be useful for discussion but noted that the posters were not popular and did not in general help discussion. Bill Camplin suggested that before the next Open meeting people should be canvassed on issues they wished to be discussed. Barrie

Lambert emphasised the importance of carrying out a new dose assessment comparison exercise.

A series of recommendations came out of the Open meeting:

NDAWG should still continue and make recommendations on good practice. *Members felt that NDAWG had made progress in resolving issues in dose assessments but there was still the need to carry out comparison exercises.*

Where necessary NDAWG should seek views from other people on its recommendations. *Members should consult within their own organisations on NDAWG recommendations. NDAWG now has an email list which will be used to give people from outside the group the opportunity to comment*

SEPA will be invited to be on the Steering Group. *Paul Dale is now a member.*

Additional independents, NGOs and Local Authority people should be invited to be on NDAWG plus industry, perhaps by being corresponding members. *Ian Fairlie, Gerald Hudd, Catherine Retberg and Jill Sutcliffe are now members. There will also be a representative of MOD sites but the discussions of who this should be are still on-going.*

The Steering group should consider establishing links with other countries especially Ireland. *This has been agreed and the Secretariat has written to Ireland the EC and the IAEA to inform them of NDAWG's work. Ian Hall mentioned that there is an UK Irish Group and they could be offered a short presentation on NDAWG.*

Action 11.1 Ian Hall to put forward the work of NDAWG at the UK Irish group meeting in early summer.

NDAWG to consider publishing in scientific journals. *The Chairman stated that NDAWG would encourage individual members to publish in refereed journals with the caveat that they should mention that the work has been done on behalf of NDAWG.*

NDAWG should keep a watching brief on contaminated land issues and if necessary in a few years time consider further involvement. *The Steering group suggested that there is a presentation on RCLEA at a future meeting and this was agreed.*

NDAWG should consider further its role in relation to solid waste disposals (different types and possible need to expand membership). *The Steering Group felt that NDAWG should not consider solid waste at present and Rob Allott commented that he did not know of any solid waste issues that NDAWG could help resolve. However, there was some interest from members about solid waste disposals and it was suggested that Mike Thorne could be asked to give a presentation at a future meeting. John Cooper thought that NDAWG should first concentrate on producing consolidated advice on dose assessment for routine releases but that a paper in a year or so would be a good idea to see if there was anything that NDAWG should take forward. It was noted that this was a*

concern for Local Authorities and that EA were developing guidance relating to the authorisation of solid waste disposal.

Action 11.2 John Titley to report back on the EA's Guidance on Requirements for Authorisation (GRA).

Accidents should not generally be considered by NDAWG. *Members agreed upon this.*

NDAWG should continue to keep a watching brief on doses to wildlife and consider further if necessary. *Members agreed upon this.*

Future work

- Further authorisation dose assessment comparison. *Members agreed that this should be done when there is an opportunity. Rob Allott informed members that the EA are changing the way they are doing revisions for authorisations as they are moving towards annual reviews instead of every four or five years. This means they will not be doing a detailed dose assessment each time but have to find a way of doing assessments on an annual basis. The importance of EA and FSA agreeing on basic parameters was also emphasised. It was agreed that it would be useful to have presentation at the next meeting on the changes to the authorisation process and the implications for dose assessment.*

Action 11.3 EA, FSA and SEPA to give presentations at the next NDAWG meeting on the authorisation process.

- A consolidated guidance document on best practice. *This was considered by the Steering Group and a brief note outlining the hierarchy of documents that NDAWG could produce, including a series of guidance notes was circulated for discussion. Members agreed this was a sensible way forward with priority being given to the general overview. There will be consultation on the guidance notes. The overview guidance note and two others will be drafted for discussion at the next NDAWG meeting to see if this approach will work. It is hoped that the guidance notes will act as a framework for consultation within individual organisations and will give NDAWG recommendations more weight.*

Action 11.4 NDAWG Secretariat to produce a draft of the general overview document for the consolidated guidance to bring to the 12th meeting.

Action 11.5 Rob Allot to produce drafts of the initial assessment tools and exposure pathways documents for the consolidated guidance to bring to the 12th meeting.

NDAWG should identify issues that other groups/regulators should take forward. *The work on the uptake of phosphorus in fish is an example that NDAWG is acting on this recommendation.*

Priorities for future work:

Validation of sewer dose methodologies especially external doses. *Agreed by members.*

Source terms where source is not monitored. The *Steering group considered that this is outside NDAWG's remit and that it would be dealt with as part of the authorisation system. If there was a need to ensure consistency on this then it was better dealt with by the Radiological Standards Working Group.*

NDAWG needs to consider other ways of informing people on its work. *The Secretariat is setting up an e-mail distribution list to inform people about new developments. Ray has given a presentation to COGER about the work of NDAWG and Jane gave a presentation on NDAWG to a FSA meeting. **Members should inform the Secretariat if there are any meetings coming up at which a presentation of NDAWG could be given.***

Matters arising from Open meeting

Presenting doses to the public - the Open meeting gave people the opportunity to comment on different ways of presenting doses to the public and HPA received some useful feedback. However, the polonium incident in London took precedent so little progress has been made.

Action 11.6 Jane to report on progress of work on presentation of doses to the public at the 12th meeting.

3. The use of monitoring data in retrospective dose assessment (Paper 11-03)

Bill Camplin presented a short summary of the method used in RIFE for calculating total retrospective dose (TRD) and then described the match between RIFE and the Principles for retrospective assessments document. There was detailed discussion amongst members on aspects of the performance against the principles. In particular, over whether doses to sewer workers should be included in RIFE. Currently RIFE does not consider non-nuclear sources of radioactivity and it is hard to see how these could be included, as they are so extensive and are not routinely monitored. For these sources doses to sewer workers are considered in site specific studies. For example, Ian Robertson informed members that SEPA were currently looking at sewage workers exposed to a number of discharges for 3 sites. Some members felt there was a need to include in RIFE doses to sewage workers working near nuclear sites. RIFE is reviewing its methodology for doses for age groups other than adults. It currently multiplies adult consumption rates by a reduction factor to calculate those for other age groups. This may be a subject for the NDAWG habits subgroup to look at. RIFE is also investigating its approach to calculation of total dose. Ian Fairlie commented that RIFE should also include collective dose in

future issues of the report but it was noted that this could only be done by calculation as there were insufficient measurements to estimate collective doses. These issues will be discussed at future NDAWG meetings.

Bill informed members that all of the data used in RIFE was available on CD but they had not had much feedback on whether people were using it yet. There will be a RIFE wash-up meeting in September. Members felt that the RIFE report is extremely useful as there is nothing like it in other countries.

Action 11.7 NDAWG members to email Bill Camplin their comments on paper 11-03 by the end of June.

4. The use and calculation of collective dose (Paper 11-04)

Rachel Smith from HPA-RPD presented a summary of the work carried out for the EC on collective doses which looked at the possibility of producing some sort of dose matrix.

There was some discussion amongst members as to the validity and usefulness of collective dose. Some members believed that collective dose was a consequence of the linear dose relationship but it is hard to interpret the results of collective dose studies as there is no associated limit. Others thought it was a useful for optimisation, but it is not a key factor in BPM studies. Collective doses are estimated as part of the authorisation process but do not have a significant impact on the process. The use of a 500 y cut off for collective doses may need to be reviewed when the Principles for prospective dose assessment are revisited by the relevant organisations.

The Chairman stated that it is not immediately apparent what NDAWG could contribute on collective dose, but it is a subject that NDAWG should come back to in the future.

5. A Report back from Subgroup on communications and draft paper for discussion (Papers 11-05 and 11-06)

This item was presented by Barrie Lambert the Chair of the subgroup. Paper 11-05 is the record of the last meeting of the subgroup. Paper 11-06 is a draft leaflet that the group has prepared for nuclear site local stakeholder groups.

Members agreed that the leaflet was a good draft document as there is little information in this area. The Chairman informed Barrie that there is the possibility that the leaflet could be produced by HPA perhaps as an At a glance leaflet. He had asked for a broad costing to produce it as such and was intending to pursue the matter with Roger Cox the director of the HPA-RPD. One member commented that the leaflet needed a title. Some members believed that the leaflet is fine for LCLC's but may not be right for the public, it would help if it

contained figures/pictures. Another member felt it perhaps contained too much text for an At a glance leaflet but could be an information booklet.

Action 11.8 NDAWG members to send their comments on the communications subgroup leaflet to Barrie Lambert.

Members agreed that after a second draft from the subgroup, the leaflet could be circulated amongst different outside groups for comment. Steve Jones offered to circulate it amongst the Sellafeld local group, Ian Fairlie amongst several environmental groups and Ian Hall offered to circulate it to relevant organisations for youth and young people in Scotland. Members gave the opinion that the leaflet would benefit from professional editing. Stuart Conney offered the services of the FSA communications group to help with the editing of the leaflet. There is also the possibility of the communications subgroup working with the AFCWG if a meeting can be arranged.

6. Report back from the subgroup on habits data (no paper)

The subgroup secretary Paul Kennedy read out a brief statement from the Chair of the subgroup Mike Thorne who could not be present. Mike intends to produce the outline of the paper on the collection and use of habits data for prospective assessments in the next two months. He will then distribute it to members of the subgroup by the end of June for comment and expansion. NDAWG members were happy with Mike's planned arrangements but emphasised the importance of progress being made in this area.

7. Report back from the subgroup on short duration releases (Paper 11-07)

Rob Allott presented the review of the second meeting of this subgroup. He obtained agreement from the main group on the terms of reference for the subgroup. Members queried the definition of short term release, which covers scenarios such as carrying out radioiodine oblations on one day of the week, reactor shutdown etc. Rob informed members that it was part of the work of the subgroup to define such short term releases but its remit also covered temporal variability in discharge, habit and environmental data.

The group had so far looked at two case studies, one for rivers and one for atmosphere. Rob outlined the forward work plan for the subgroup which included producing a draft of its findings for the autumn main NDAWG meeting. He envisaged two more meetings of the subgroup (till November 2008) before it makes its recommendations.

8. Report back from members

ICRP - The Chairman informed members that the ICRP had agreed its recommendations in March at a meeting in Essen and it will be published in Autumn. He said there will be little change to current practices, with the most impact in the area of emergency planning response. The HPA has a statutory duty to comment on the applicability of the recommendations to the UK and were just starting this process. There will be 4 one day presentations on the new ICRP recommendations by the HPA in November at Chilton, London, Cardiff and Glasgow.

Action 11.9 John Cooper to present an overview of the latest ICRP recommendations at the 12th NDAWG meeting.

Ian Hall asked John Cooper to consider during his presentation whether the ICRP recommendations will have any affect on the risk based approach for contaminated land.

Environment Agency - John Titley informed members that EA were currently developing leaflets on radiation issues for LCLC's in collaboration with the EA Communications section. The chairman was concerned that there may be a duplication of the work the communications subgroup were producing and recommended some liaison between the two groups.

Action 11.10 The communications subgroup secretary to let John Titley know the date of the next subgroup meeting.

HSE - Patrick Stephen informed members that the HSE had published the latest version of the NII Safety Assessment Principles. This will appear on the HSE website in due course. There were two areas that would be of interest to NDAWG: radiological protection and numerical targets/legal limits. The NII has now acquired the Office of Civil Nuclear Security (OCNS) and UK Safeguards.

CEFAS - Bill Camplin informed members that CEFAS had now collected urine samples for volunteers eating fish from the Cardiff bay area as part of a study on gut uptake factors of organically bound tritium. The results of the study should be available around September/October. Gut uptake factors for polonium found in seafood caught off Cumbria are also being investigated.

Ian Fairlie said there was an HPA Advisory Group on Ionising Radiation (AGIR) report about to be published on tritium that may be relevant to this work.

Scottish Executive - Ian Hall informed members that the contaminated land regime became law through the Scottish Parliament at the end of March, but that it will not come into force until 30th October, to allow time for preparation of the required statutory guidance. Because nuclear liability issues are mainly reserved, it was decided that the Scottish regulations would not apply to nuclear licensed and MOD sites that are covered by the Paris/Brussels convention on nuclear liabilities. It is the intention, however, that those sites will be brought

into the regime in Scotland by UK Regulations made under the appropriate provision of the Scotland Act.

HPA - Jane said the HPA are carrying out a big study for the European Union on individual and Collective dose due to discharges from nuclear sites in the EU, which is due for completion by the end of the year. The Chairman informed members that a HPA document will be published summarising the way standards are set for ionising, non-ionising, UV and chemicals hazards.

NDA - Mike Poole informed members that the role of Nirex has been integrated into the NDA and Nirex was effectively wound up at the end of March, with the loss of 11 staff, mainly in roles duplicated within the NDA. The majority of the technical staff transferred into the new Radioactive Waste Management Directorate (RWMD) in NDA, led by Richard Waite. The NDA plans that the RWMD will itself form the basis of the implementing organisation, perhaps by developing into an NDA subsidiary company in 2008.

Andrew Craze informed members that as a result Laurence Williams has taken over Richard's previous engineering responsibilities and is now Chief Engineer and Director of Nuclear safety Security and Environment. Laurence's Directorate consists of 6 teams:

- Technical and skills (from engineering),
- Engineering Validation (from engineering),
- Nuclear Materials and Spent Fuel (from engineering),
- Safety and Environment,
- Security and Safeguards and
- Repository Safety and Environment (from Nirex).

Simon Morgan remains Regulatory Liaison Manager within the Repository Safety and Environment Team and Andrew Craze continues as NDA Environment Manager within the safety and environment team. NDA will in due course consider its representation at NDAWG in light of these changes.

AGIR - Barrie Lambert informed members of the work done by the AGIR subgroup on tritium dosimetry. They found that levels of OBT in fish were higher than expected for the Sellafield area as well as in Cardiff bay. This is not a problem from a dose point of view but if the fish are exposed to tritiated water (HTO), where is the OBT coming from?

This uncertainty had been recognised by the NDAWG subgroup on modelling and there was discussion of whether future work should be recommended. From a regulatory point of view it is hard to give this priority as the radiation doses are low. The chairman said that NDAWG accepted that this was not a problem in terms of risk, but if it is a genuine phenomenon cropping up at more than one site it should be investigated.

Action 11.11 Barrie Lambert to summarise the findings of the AGIR subgroup on tritium at the 12th NDAWG meeting.

Westlakes Research Institute - Steve Jones informed members that the ERICA project finished in February and several reports would be available on the website shortly. These include an overview of the ERICA tool for assessing doses for biota and several case studies based around the Sellafield area.

Other - Ian Fairlie informed members that he had submitted an article to JRP which suggested that the radiation weighting factor for tritium and other low energy beta emitters should be higher than the value of 1 recommended by ICRP.

9. NDAWG review (paper 11-08)

9.1 TERMS OF REFERENCE

At the Open meeting in November 2006 it was agreed that an additional term of reference was required to reflect the role of NDAWG in promoting 'best practice' in dose assessment methodologies. The following addition to the first term of reference above was therefore proposed:

'To facilitate the exchange of data and views between all parties on assessment methodologies and to promote the use of best practice and consistent methodologies'

Members agreed with the proposed change. Ian Hall suggested that the term 'publicise' or 'disseminate' should be added after the word 'promote' to reflect that NDAWG will be doing more to tell people of its work. Ian Fairlie expressed the opinion that the terms of reference should consider risk.

Action 11.12 The Secretariat to consider amending the first term of reference to reflect that NDAWG will be doing more to tell people of its work.

Action 11.13 The Steering committee to consider the inclusion of risks in the terms of reference.

9.2 FUTURE WORK

The following work programme was agreed.

Meeting 12 Impact of radioactive particles in dose assessments, findings of the AGIR subgroup on tritium, an overview of the latest ICRP recommendations, update on the authorisation process from EA, FSA and SEPA, draft guidance documents, report back from the habits subgroup.

Meeting 13 Outcome of research into phosphorus in freshwater, doses to non-human biota, contaminated land issues including RCLEA.

Action 11.14 The Steering committee to finalise the agenda for the 12th NDAWG meeting and to consider the future work programme including when to consider solid waste issues.

Rob Allott suggested that to publicise the work of NDAWG a short summary of each meeting could be sent to JRP section for their news section.

9.3 RESEARCH LIST

The research database is one of the most accessed pages on the website but it is sadly out of date and incomplete, no contributions have been received for over two years. We would, therefore welcome further contributions from members, which can include relevant research from member's organisations, and third parties.

9.4 WEBSITE

There were a total of 6671 visits between May 2006 and March 2007 (over 600 visits on average a month) with people accessing over 55,000 files.

10. Date of next meeting

The Secretariat will email people as to availability for the 12th NDAWG meeting on Wednesday 21st November.

11. Summary of Actions

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Action 11.3 EA, FSA and SEPA to give presentations at the next NDAWG meeting on the authorisation process.

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NDAWG Secretariat 30 April, 2007