Issues for small users

The seventh meeting of NDAWG discussed issues for non-nuclear industry users of radioactive materials (often referred to as small users). Such users include hospitals, universities and research establishments. The following are the main points to emerge from the discussions.

1. Some small users are only able to carry out a simple, generic dose assessment and would have difficulty if required to carry out a realistic assessment of their radioactive impact on the environment. They do not consider uncertainty and variability.

2. More realistic assessments require using site specific data. However, some users are reluctant to press sewage companies and others for anything other than basic data to help them assess doses as this may raise concerns that may develop into considerable public relations issues.

3. There is a need for some of the more sophisticated assessment modelling methodologies to be made more accessible to non-expert users. One way of doing this would be to have sets of generic results that could be scaled for specific situations. In particular:
   - It would be useful if the rivers discharge report (Hilton et al 2003) could be extrapolated to lower flow rates since many users may need to model smaller brooks perhaps down to 1 m^3 per second.
   - A scaleable set of results for a generic estuary and coastal marine release analogous to the rivers discharge report using a realistic assessment would be useful for small users.
   - Generic scaleable results for irrigation and sludge to land assessments, using the best modelling available, that are readily accessible to users and include all the relevant isotopes, would be useful to those users who have to submit assessments of this type.

4. For small users in hospitals the use of generic percentage discharge levels which have been agreed with the regulators can lead to gross over-estimates of the impact at the site for most diagnostic administrations. For example, 100% of administered activity is recorded as excreted as being discharged to the hospital sewage system at the time of administration, however 90% of patients attend as out-patients and do not actually excrete the activity at the hospital but from their home (this may of course lead to activity being discharged to the same sewage works as the hospital).

5. The issue of how to treat generic discharges, e.g. ‘other beta/gamma’ can lead to significant difficulties in dose assessment.

6. The high fish concentration factor for phosphorus-32 may cause concerns with future assessments. There is a large degree of uncertainty in the choice of concentration factor, and measurements of this particular pollutant may go some way to resolve this uncertainty. Recent HPA (NRPB) advice on protection of the fetus could have implications for assessment of phosphorus-32 discharges in future. At the meeting NDAWG recommended that there is the need for national research on the transfer of phosphorus radioisotopes to fish. This should include monitoring of fish and water in areas where such isotopes are known to be discharged.

Possible input from NDAWG to the above points.

Issue	NDAWG input
1	Advice is given in the second report of the sub-group on uncertainty and variability in dose assessments on how to take account of uncertainty in dose assessments.
2	It is hard for NDAWG to address this except perhaps by obtaining a range of data for different situations e.g. sewage throughputs for different size sewage works perhaps linked to the size of the population served by the works.
3	NDAWG could ask EA/FSA to sponsor work to produce such generic results?
4	This is not an issue for NDAWG?
5	This is not an issue for NDAWG?
6	NDAWG need to keep this under review to try and ensure that the necessary research/ monitoring is carried out.