

## NATIONAL DOSE ASSESSMENT WORKING GROUP

### PAPER 13-05: SUMMARY OF THE IAEA EMRAS PROGRAMME

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#### Background

The Environmental Modelling for Radiation Safety (EMRAS) is the latest in a series of initiatives from the IAEA (International Atomic Energy Agency) to support development of mathematical modelling techniques to assess the affect of radioactivity on the environment and the food chain. Predecessors to EMRAS include VAMP (Validation of Model Parameters), Biomovs (Biosphere Modelling Validation Studies) I & II, and Biomass (Biosphere Modelling and Assessment).

#### EMRAS

The current programme started in September 2003 and has run until the final plenary meeting in November 2007.

The programme covered three themes,

- 1 - Radioactive Release Assessment
- 2 - Remediation of Sites with Radioactive Residues
- 3 - Protection of the Environment.

The Radioactive Release Assessment theme produced 4 working groups covering

- Revision of TRS-364 (the assessment handbook from 1994) which reviewed the literature since 1992 and developed data sets for parameters for modelling and the models themselves.
- The Modelling of tritium and C -14 transfers to biota and man group; which considered the suitability of current models and carried out intercomparison exercises using new and developed data sets.
- The Chernobyl I-131 release model validation and effectiveness of counter measures group, which considered the countermeasures used immediately after a release and used models to consider other countermeasure scenarios.
- The Model validation of radionuclide transport in a river-watershed system, which looked at modelling in large river system which have been contaminated.

Outputs from the "Tritium" and "Aquatic" groups fed back into the "TRS-364" group's work.

The Remediation of Sites theme produced 2 working groups covering

- Sites contaminated with technologically enhance naturally occurring radioactive material (Tech NORM) which considered a lignite plant and a phosphogypsum plant and modelling remediation of such sites.
- Urban Remediation Group which considered Pripjat and a radiological dispersion device, the models available, the countermeasures possible and their effects.

The Protection of the Environment theme only produced one working group on

- Model validation for biota dose assessment which compared dosimetry and transfer coefficients for a number of models and validated these models against an aquatic and a terrestrial (Chernobyl) data set.

This group also supplied data for "TRS-364" Group's work.

### **Outputs**

Each will produce a TECDOC as the usual output from IAEA initiative. In addition the Revision of TRS-364 group will produce a revised version of the handbook. TECDOCs will be produced as CDs, whilst the handbook will be in hard copy. All documents will be published on the IAEA/EMRAS website.

TECDOCs will be submitted for publication in June 2008 and the handbook in mid/late 2008.

### **Future**

Most Groups have already started to consider what further work is needed in their areas of interest, if a future IAEA initiative is proposed.