

**Transfer Parameters for Wildlife Handbook
Database Meeting
MINUTES**

**IAEA Marine Environment Laboratory, Monaco
16–18 June 2009**

Meeting objective

The aim of the meeting was to discuss relevant data on aquatic ecosystems which Member States may be able to enter into the online transfer database which will be used to provide concentration ratios for the Technical Reports Series (TRS) Handbook on Transfer of Radionuclides to Wildlife. The meeting was held at the IAEA's Marine Environment Laboratory (MEL) in Monaco to facilitate interaction with IAEA scientists who are doing relevant work and may have data which could be included in the database. In addition, an accompanying meeting was subsequently held by the ICRP Committee 5 (C5) Transfer Task Group which is collaborating with the IAEA in the production of the CR values for the Handbook and RAPs for the ICRP report.

Meeting summary

The participants (see the Participants List below) were welcomed by Ms Maria Betti, Director, MEL, who expressed her support for the initiative of exploring potential inputs and cooperation with MEL in the preparation of the Wildlife Transfer Handbook. Diego Telleria then gave some initial information about the current position of the issue of protection of the environment at the IAEA and the related activities. To ensure that all participants had a basic knowledge of the subject area, Nick Beresford then gave a summary talk of the history and current state of the assessment methodologies. Brenda Howard then gave an introduction to the Transfer Handbook and the association with the EMRAS II Working Group 5 on Transfer. There followed a series of presentations (see the Agenda given below) on the potentially relevant data that each participant may be able to input into the online database. Ross Jeffree presented information on tracer studies with fish carried out at MEL which were relevant to generic methods of quantifying transfer and to life stage considerations of the ICRP. The online database constructed by the Environment Agency (EA) in the UK was then demonstrated and discussed by David Copplestone. The data used in ERICA have been input into the database for marine and terrestrial ecosystems. Those for freshwater will also be input. The remainder of the meeting was devoted to discussions on the datasets and initial entry of data into the database, largely focusing on the use of an associated excel file for those participants with large datasets.

Consideration of CR datasets

Each major data source was reviewed and actions needed (see Action List below) were agreed as follows:

- IAEA MARIS dataset: NRPA, STUK and IAEA compared the data available in MARIS and ERICA (and Helcom-Mors). It is probable that the major data gaps in ERICA could probably not be filled by MARIS. Nevertheless, the quantity of data could probably be supplemented from MARIS. Further review of MARIS will be done and missing data identified for entry. Potential contacts for CR values were identified in Germany. It was agreed that it would be useful to give salinity information when possible.
- Whilst some Finnish data had been incorporated into ERICA other potential datasets were available which need to be reviewed for marine, freshwater and terrestrial ecosystems to identify additional data that could be provided.
- In Canada, the CSNC has arranged a contract with industry to provide data into the database. CSNC requested a facility to input sediment values into the database; this was discussed and agreed. Various modifications to the help guidance were suggested and implemented.

- Data from SKB in Sweden are being provided as mean values by Facilia AB from two sites considered for waste disposal. The data need to be modified to provide suitable mean and error values.
- NIRS provided c. 2000 CR data via excel files during the meeting for estuarine/coastal areas in Japan. The CR values are going to be modified so that they are for whole body.
- French data may be available from IRSN and EDF but this needs more consideration and consultation with relevant scientists. Some data are already in MARIS.
- Westlakes Scientific Consulting in the UK have offered, after approval, to enter some relevant data on seaweed from the Sellafield monitoring database and may have other data that could be utilised.

Kd values

The core Handbook Group had previously agreed to focus only on deriving revised CR values for the Handbook and the ICRP RAPs. However, further consideration of ERICA data has shown that some Kd values for freshwater are based on marine data. It was agreed that it is necessary to find out if there are more suitable data available that might be reported in the Handbook for freshwater ecosystems.

Data gaps

Data gaps specified in the ERICA special issue paper (Hosseini, et al., 2008) need to be evaluated and potential experiments to fill priority gaps identified. MEL may be able to assist in filling in some of these gaps with targeted experiments. The outcome should be summarized and provided to MEL and the IAEA (Vienna) for further consideration. MEL may have some relevant data from previous studies.

Online database

About 30 issues/improvements were identified during the meeting. EA will attempt to get these revised as soon as possible, with priority and simple issues done APAP.

Meetings

The next meeting on terrestrial and generic approaches will be held at IAEA Headquarters in Vienna (20–24 July 2009) during the week long Joint EMRAS II Working Group Meetings (WG4, WG5 and WG6), and CEH will briefly report the outcome of this (Monaco) Meeting. A further meeting will be considered for autumn to prepare the handbook text and provide the potential for discussion of data in Member States in North American.

Action list

Topic	Action	Responsible organization	Action deadline
IAEA Maris dataset	Further review of MARIS	NRPA + IAEA + STUK	October meeting
Helcom-Mors dataset	Contact Günther Kanish for CR data and review of Helcom dataset	STUK	Report outcome in Vienna July 2009
Finnish data	Supplement data in online database	STUK	Report outcome in Vienna July 2009
	Contact Posiva re provision of data	STUK	
Canadian data	Input relevant data from various sources, including for sediment – assistance from industry. Assess data for non-linearity in transfer	CNSC	Some input by end summer 2009, remaining one week before EMRAS II TM January 2010
	Identify relevant data and from Canada including COG data	Tamara Yankovich	Overview in July, full input autumn

Topic	Action	Responsible organization	Action deadline
Swedish data	Input CR mean and error values from SKB data on all three ecosystems after suitable conversion	Facilia for SKB	Some input by July 2009 meeting
Japanese data	Convert data to whole body – complete excel files for estuarine data	NIRS	July 2009
French data	Check availability of data with colleagues and EDF	IRSN	End September 2009
UK data	Explore potential input from Westlakes	EA	July 2009 meeting
Kd	Consult EMRAS participants on available data for freshwater to revise ERICA values. Consider providing revised tables in handbook	CEH + Areva + IRSN	End July 2009
Data gaps	Identify key data gaps for marine ecosystems. Identify potential experiments to fill gaps.	1 page summary from NRPA and MEL	End August 2009
	ERICA papers on datasets	CEH and NRPA to send to MEL	End June 2009
	Investigate Mel experimental and field data for relevant CR values	Mel	End September 2009
	Consider suitability of using similar radionuclide substitute data	MEL + CEH	End September 2009
Online database	Implement needed corrections identified in meeting	EA	Most by July 2009 meeting
October handbook meeting	Prepare proposal for meeting dates, location and objectives for IAEA	CEH	July 2009

MEETING AGENDA

Tuesday, 16 June 2009		
09:00–09:15	Welcome from Mel Laboratory	Maria Betti, Director
09:15–09:30	Introductory remarks	Diego Telleria, IAEA
09:30–09:45	Introductions of attendees	
09:45–10:30	Summary of history and current position of protection of the environment from radioactive substances	Nicholas Beresford, CEH, UK
10:30–11:00	Introduction by Chairperson of the Handbook	Brenda Howard CEH, UK
11:00–11:20	<i>Coffee break</i>	
11:20–12:30	The ERICA database aquatic entries in the database	Ali Hosseini, NRPA, Norway
12:30–14:00	<i>Lunch</i>	
<i>Presentations of relevant science and datasets</i>		
14:00–14:15	IAEA's marine environmental radioactivity database MARIS	Emmanuel Bosc, MEL
14:15–14:45	Phylogenetic patterns of trace metal bioaccumulation in marine fishes	Ross Jeffree, MEL
14:45–15:00	Concentration factors (CF) of stable elements and naturally occurring radionuclides for estuarine biota collected in Japan.	Hyo Takata, NIRS, Japan
15:00–15:30	<i>Coffee break</i>	
15:30–16:15	Summary of available Canadian data	Marcelle Phaneuf, CSNC, Canada
16:15–17:00	Swedish waste repository studies - site specific transfer data from Forsmark and Laxemar investigation areas	Jesper Torudd, Facilia AB, Sweden

Wednesday, 17 June 2009		
09:00–09:30	The Helcom-Mors database for radionuclides in biota, seawater and sediment in the Baltic sea	Iisa Outola, STUK, Finland
09:30–10:00	Aquatic concentration factors available through IRSN	Karine Beaugelin Seiler, IRSN, France
10:00–10:30	Sediment-water distribution coefficients (K_d) of stable elements and naturally occurring radionuclides in Japanese estuarine areas.	Hyo Takata, NIRS, Japan
10:30–11:00	<i>Coffee break</i>	
11:00–12:00	Database format and help guidance	David Copplestone, EA, UK & Nicholas Beresford, CEH, UK
12:00–13:30	<i>Lunch</i>	
13:30–15:15	Database entry into excel file for large datasets or online for individual datasets	All
15:15–15:30	<i>Coffee break</i>	
15:30–17:30	Tour of MEL facilities	All
19:00	<i>Joint Evening meal</i>	
Thursday, 18 June 2009		
09:00–10:30	Database entry if needed Discussion of data inputs, data quality	All
10:30–11:00	<i>Coffee break</i>	
11:00–12:30	Summary of discussions and actions	All
12:00–13:30	<i>Lunch</i>	
ICRP Transfer group commences pm		

List of Participants	
Name / Email	Organization / Country
Ms Karine Beaugelin-Seiller (karine.beaugelin@irsn.fr)	Institut de Radioprotection et de Sûreté Nucléaire (IRSN), France
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Mr Justin Brown (justin.brown@nrpa.no)	Norwegian Radiation Protection Authority (NRPA), Norway
Mr David Copplestone (david.copplestone@environment-agency.gov.uk)	The Environment Agency, UK
Mr Ali Hosseini (Ali.Hosseini@nrpa.no)	Norwegian Radiation Protection Authority (NRPA), Norway
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Mr Hyoe Takata (takata@nirs.go.jp)	National Institute of Radiological Sciences (NIRS), Japan
Mr Diego Miguel Telleria (D.Telleria@iaea.org)	Assessment & Management of Environmental Releases Unit, IAEA (IAEA Scientific Secretary)
Mr Jesper Torudd (Jesper@facilia.se)	Facilia AB, Sweden
Mr Shigeo Uchida (s_uchida@nirs.go.jp)	National Institute of Radiological Sciences (NIRS), Japan
Ms Tammy L. Yankovich (tamara.yankovich@areva.ca)	AREVA Resources Canada, Canada (18 June only)