The IAEA's Programme on Environmental Modelling for RAdiation Safety (EMRAS II)

EMRAS II
Reference Approaches for Human Dose Assessment
Working Group 1
Reference Methodologies for "Controlling Discharges" of Routine Releases

M I N U T E S

of the Fourth Meeting held at the Radiation Protection Institute (RPI), Kiev, Ukraine 21–23 September 2010

IAEA Scientific Secretary	Working Group Leader
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Attending	
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*Initials used to refer to participants within minutes and actions as appropriate.

Summary

DMT and ***TJS*** gave a brief overview of the previous Working Group 1 (WG1) meetings.

TJS then presented the results and the Canadian calculations in the same presentation. This spurred a discussion on how the results would be analysed – they should also be analysed with respect to air concentration, deposition rate, and concentration in marine sediments. There was then a discussion of how close the results of the models should be (epsilon). A factor of 3 or 10 seemed reasonable. The results for the atmospheric part of the scenario agreed within this factor of about 3, except for the cases of Iodine. In the analysis it was decided that the direct radiation parameter should be removed from the scenario. A list of mistakes made during the process of modelling the scenario should also be drafted by each of the participants, as this could provide guidance to future modellers.

It was decided that a list of parameters that one cannot change should be provided by the participants for each of their models. For example, the Slovak Republic did not use sheep when modelling the scenario as sheep are not included in their model. Belarus was able to model sheep through use of another animal. There were also comments on the dose coefficients as there is some variation in these throughout the literature. Some of the surface coefficients used in the scenario were identified as being very different between the models (Cs vs Cs + Ba).

During the presentation, the question arose whether the parameters that ***Christophe Mourlon (CM)***[♦] used for marine should be based on filtered or unfiltered water. Currently, the proposal is to use filtered water. ***Lauren Bergman (LB)***[♦] is checking with ***CM*** to ensure that the use of filtered water will be acceptable for his model. Furthermore, for the disagreement between the models for the concentration of iodine in the atmosphere, it was suggested that each participant send ***TJS*** the values they used for: (a) activity concentration in milk; and (b) deposition rate. Hopefully, this will provide some insight into the reasons for this variation. Currently the plan is for all of the participants to re-run the scenario with ***CM's*** suggested parameters for the marine component (sediment distribution coefficients and bioaccumulation factors for fish) and to ensure all participants are using filtered water.

There was also a discussion of the word harmonization. Opinion suggests that the group requires some guidance from the IAEA on this point and it would be helpful if the IAEA defined their requirements in this regard, i.e. what does the IAEA mean by the word "harmonization"?

There were presentations given by some participants (see attached Agenda for details) on how they choose their critical groups. During these presentations, the question of what are stability classes G & H arose.

There were many discussions on how to compare the results of Scenario B where the critical groups are chosen as per each countries regulation. A careful decision was made with regard to how best to complete Scenario B. Reasons for completing the calculation of dose to the critical group include: (a) no explanation of why there are differences is necessary because it is built into the explanation of how the critical group is selected; (b) one learns more from doing (i.e., by running the scenario, one can learn more); (c) Scenario A was designed to be the control and Scenario B was the experiment; (d) one could analyse the data in the same manner as one does, when they look at peak to noise measurements in gamma ray spectroscopy; and (e) the differences are interesting.

♦ Participant absent from the meeting.

After the presentations on how one selects the critical group, the participants, as a group, concluded that for Scenario B some methods could not be inter-compared. This is because, as each participant would choose their own critical group, the end results would have great variation. However, it was decided that each group would write up the methods by which they would have completed the scenario, so the approaches could be inter-compared. The participants should write this up, in as much detail as possible, as if they were about to do the calculation. This will allow us to compare the critical group selection process between the different participating countries.

An outline for the WG1 final report was then we set up.

The possibility of holding the 2011 Interim WG1 Meeting in Ottawa, Ontario, Canada was discussed. It could be feasible to told hold the meeting on the weekdays, either before or after the Radioecology and Environmental Radioactivity Conference, being held 19–24 June 2011, in Hamilton, Ontario, Canada. The group expressed their interest in this regard. ***TJS*** must obtain permission from his organization to host the meeting before any administrative actions can be taken by the EMRAS II Administrative Secretariat (IAEA).

Then the group discussed the parameters that should be fixed for the river model. This discussion is recorded in a separate document.

Finally, the following deadlines were set:

Scenario Av2 deadlines:

— 30 September 2010: ***LB*** to send out an Excel template with more new fixed marine parameters. ***TJS*** to send graphs of concentrations.

— 8 October 2010: ***Participants*** provide TJS with any other parameters their model uses for the River Scenario (Scenario C).

— 14 October 2010: ***Participants*** provide TJS with their concentrations in milk and deposition rate for iodine. ***TJS*** to send out tasks for the report outline.

— 1 November 2010: ***Participants*** to complete the re-run of the marine component in their models, using new template from LB.

— 29 November 2010: ***Participants*** to provide a thorough (as detailed as possible) description of how they would choose the critical group, as per their respective country's guidelines. The description should be written in paragraph form. Participants should pretend that they would actually be completing the calculation (i.e., put as much practical detail as possible).

Next Meeting

The next (fifth) WG1 Meeting will take place as part of the Third EMRAS II Technical Meeting, being held at IAEA Headquarters in Vienna, 24–28 January 2011.

WG1 MEETING AGENDA	
Part (a)	
An introduction briefly revisiting the objectives of the Working Group	Trevor J. Stocki, WGL (Health Canada, Canada) / Diego Telleria, IAEA Scientific Secretary
A summary of the work done during previous meetings and the tasks defined for this period since last meeting	
Part (b)	
The results from *Scenario A, Version 2	Presented by Trevor J. Stocki
Presentations given by each of the participants of the work done and results:	
*Argentina	Adriana Raquel Curti (ARN, Argentina)
*Belarus	Viktoryia Kliaus (RSPCH, Belarus)
*Brazil	Dejanira da Costa Lauria (IRD/CNEN, Brazil)
*Poland	Pawel M. Krajewski (CLOR, Poland)
*Ukraine	Iurii Bonchuk (RPI, Ukraine)
*United Kingdom	Justin Smith (HPA, Ukraine)
Discussion on results and conclusions from results	Presented by Trevor J. Stocki All participants
Presentation on Selection of a *Critical Group	
Discussion on the way forward for Scenario B	
Set deadline for Scenario B (mid-November, that way results will be presented in Vienna)	
Part (c)	
*Discussion of Scenario C (river model, what we like to fix, which isotopes to do, etc.)	All participants
Lauren will be preparing the scenario while participants do Scenario B (then she will do Scenario B)	
Part (d)	
Discussion of papers, abstracts, collaboration with other WGs and documents	Presented by Trevor J. Stocki All participants
Part (e)	
Discussion of possible location of the *2011 Interim Meeting of WG1 – possibly in Ottawa, Canada before or after the Radioecology Conference in Hamilton in the summer of 2011)	Presented by Trevor J. Stocki All participants

* Indicates the name of the presentation given on the WG1 web page (http://www-ns.iaea.org/projects/emras/emras2/working-groups/working-group-one.asp?s=8).