

EMRAS

Environmental Modelling for Radiation Safety Working Group 4 – Model validation for radionuclide transport in the aquatic system “Watershed-River” and in estuaries

(IAEA)

5th meeting

21-25 November 2005, IAEA, Vienna International
Centre, Vienna, Austria

MINUTES OF THE MEETING

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The fifth EMRAS WG 4 meeting was held in Vienna (Austria) and was hosted by the IAEA (International Atomic Energy Agency) in connection with the third combined meeting . The objectives and aims of the WG meeting were to discuss the status of the WG activities and to plan further activities.

Scenario 1 – Floodplain (Chernobyl), prepared by Gennady Laptev (IHM)

The final results were produced. A power point presentation is ready for the EMRAS web-site. The preparation of the relevant section for the final EMRAS Tec-doc is in progress.

HUI has produced the results of an application of a commercial product (BOSS SMS – Hydrodynamical Environmental Modeling Suite) from USA Army Corps of Civil Engineers. The

aim was to show as a complex hydrodynamical software can be used for applications to radionuclide migration in the floodplain. The potential of the method was discussed. It was recognised that the method is effective for predicting the hydrological processes in the floodplain. It is somewhat useful for evaluating certain features of the time behaviour of contaminants in the floodplain. Nevertheless, it does not account for the process of radionuclide migration with the detail comparable to the models that are specifically designed for such purposes. Therefore, it should be used with caution, mainly in relation to the predictive power of the models in generic circumstances.

Scenario 2 – The Techa River prepared by Ivan Kryshev and Alexander Kryshev (TYPHOON, Russia)

Preliminary results relevant to the scenario were produced by Typhoon. Potential modellers are: IMMSP, ENEA, IRSN, Typhoon.

The final, complete version of the scenario will be sent by Typhoon to ENEA for subsequent distribution to WG members (end of February). Modellers are requested to send preliminary results to ENEA in May 2006.

Scenario 3 – Tritium in the River Loire, prepared by Marilyn Luck and Nicole Goutal (EDF)

The exercise was finalized and a draft version of an internal “working report” describing the scenario, the models and the results is ready. In particular, the section “Conclusions” was produced. It will be carefully assessed by the WG participants. Comments should be sent as soon to EDF. The following actions were planned:

Action	Dead line
EDF will send the last up-to-date version of the report to WG-4 members	As soon as possible
WG members will send comments on the report to EDF	Before end of December 2005
WG members that participated in the exercise will send information on “conservativity” hypotheses that underlie the models	Before end of December 2005
EDF will prepare the final document and will send it to the WG members	End of January 2006
Final version of the report	March 2006

A new model exercise for “sediment-interacting” radionuclides in rivers was proposed. EDF will prepare a brief description of a scenario for ⁶⁰Co in river Loire in view of the analysis of feasibility by the WG members of such a modelling exercise (end of February 2006).

Scenario 4: Estuary of the Dniepr River contaminated with Sr-90 and Cs-137 from Chernobyl, prepared by Gennady Laptev (IHM, Ukraine) and by Mark Zheleznyak and Vladimir Maderich (IMMSP, Ukraine)

The final results were produced. A power point presentation is ready for the EMRAS website. The preparation of the relevant section for the final EMRAS Tec-Doc is in progress. A

manuscript summarising the main achievements of this exercise was sent to a scientific journal for publication.

The possibility of an extension of the scenario to biota was discussed. Such a new activity was considered of importance by many modellers. Consequently IAEA was asked to support UHI for the development of the scenario and the collection of relevant data and information. It is expected that the scenario will be ready before the end of June for the assessment of WG members and that the final, approved version will be distributed to modellers before the end of 2006. A detailed list of the data set requirements will be prepared by the WG.

The feasibility of a model application exercise for a hypothetical condition of a strong interaction of a radionuclide with sediment will be assessed.

Proposal for a new scenario (Scenario 5): The University of Sevilla proposed a new scenario relevant to the behaviour of ^{226}Ra in Huelva estuary (Spain). A joint meeting with NORM WG was carried out for discussing the scenario that is of common interest for both WGs. The University of Sevilla will prepare and distribute a scenario description before the end of December 2005.

Contribution from the WG to the revision of Tec. Series No 364: The WG-aquatic will be responsible for the preparation of the section "Physical aspects of radionuclide migration in aquatic systems". A draft of the section should be ready before the next WG meeting. A first draft will be distributed to the WG members in February 2006.

Next WG meeting : 14- 15 June 2006 in Vienna