Reference Methodologies for "Controlling Discharges" (WG1) Update since January 2009

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Outline

- September meeting
- Questionnaire
- Scenarios we are running.

September 2009 Meeting of Reference Methodologies for Controlled Discharges (WG1)

- Each participant presented the methodologies for assessments in use in their countries.
- This was to facilitate:
  - To collect and document different methodologies.
  - To identify differences and common approaches.
  - Create questionnaire for non-participating countries.

Results of September meeting

- At the Sept. 2010 meeting, a draft questionnaire was written to be sent out to all the participants of EMRAS II.
- This questionnaire was sent out.
- Thank you everyone who has responded so far.

4–6 Scenarios

- Decided on which scenarios to run:
  A. Simple model of a reactor by the coast (Sizewell, UK). (This is in progress!)
  B. Complicated model of a reactor by the coast (Sizewell, UK).
  C. Hospital with or without sewage treatment plant (river or canal) .
  D. Reactor on a river, (simple and complicated models). (Most likely Chalk River, Canada).

Simple Coastal Scenario (original plan)

- Air & Marine releases.
- Everyone used the same critical group
- We used Neutral met conditions.
- We used a homogeneous wind direction.
- Everyone used the same consumption data. (Provided by Laura, UK).
- We fixed the pathways.
- We fixed suspended material concentration.
- We only used a few radionuclides: 1 TBq to air (Kr-85, Co-60, I-131, Cs-137) and 1TBq (Cs-137, Co-60, Sr-90) to marine
- We had the emissions at ambient temperature from a 19 m stack, with no rain.
- This scenario corresponds (except for the artificial parameters we had changed above) to a UK assessment.
- The purpose of this scenario is to compare models, which will do this week.

Complicated Coast Scenario

- Air & Marine releases.
- Each user chooses the critical group.
- There will be many radionuclides.
- There will be realistic met conditions (UK data)
- There will be a population distribution (UK data)
- There will be local consumption (UK data)
- This scenario Corresponds to a UK assessment.
- This compares models, methods, regulations

Hospital Scenarios

- This will be a large hospital with a large number of patients per year.
- We will model I-131.
- We need to decide if it is an in patient or outpatient.
- Will need the discharge rate per year of the hospital directly.
- It could be 10^11 Bq/year of I-131.
- Depending if there is a sewer or not there could be two different critical groups.
- A very interesting point of this scenario is that this compares complex sewer model (LUCIA) to regular models.

River Scenarios

- We will need the average flow, slope, and suspended load.
- We will need the type of river (large or small).
- We will need river's water usage (type of irrigation, Fishing, etc).
- We will need a population distribution (could use same as B either mirror image or no people on one side).
- We can use a dilution model.
- The critical group will be downstream.
- We could do a simple case than a complicated case
- This will most likely be Chalk River, Canada.

This week

- We will discuss the results of the submission of the first scenario.
- Decide next steps.
- Firm up what we want to fix and vary in the second scenario.
- Discuss the questionnaire.
- Discuss the new concept of critical group.
- Decide next meeting.

List of Participants

- John Titley (UK)
- Bela Kanyar (Hungary)
- Patrick Boyer (France)
- Trevor Stocki (Canada)
- Patricia Sotomayor (Chile)
- Adriana Curti (Argentina)
- Pawel Krajewski (Poland)
- Rudie Heling (Netherlands)
- Iurii Bonchuk (Ukraine)
- Gaetan Latouche (Canada)
- Plus others...
- We are open for other members to join.