

ADMLC Workshop 12 March 2020

Challenges in modelling for emergency planning and response to contaminant releases

Centre for Chemical, Radiation and Environmental Hazards (CRCE) Training Centre, Public Health England,
Harwell Campus, Didcot, Oxford, OX11 0RQ, UK

Agenda v3

- 9:30 Registration and coffee**
- 10:00 ADMLC Chairman's welcome** *Simon Gant (HSE)*
- 10:10 Introduction – modelling perspectives** *Matthew Hort (Met Office)*
The role of atmospheric dispersion modelling in planning, preparedness, response and recovery - a science perspective
- 10:30 Perspectives on emergencies involving atmospheric releases** *Robin Grimes (Chief Scientist MoD)*
Key issues/challenges/requirements of government/SAGE for planning and response
- 10:55 SESSION 1: RESPONSE MODELLING**
Examples of issues, including key uncertainties, in response modelling
- 10:55 The application of atmospheric dispersion modelling for the provision of health protection advice in the event of a radiological incident** *Pete Bedwell (PHE) & Sarah Millington (Met Office)*
- 11:15 The practical use of models during the emergency response to chemical incidents and fires** *James Stewart-Evans (PHE)*
- 11:35 Responding to volcanic eruptions** *Claire Witham (Met Office)*
- 11:55 Discussion: RESPONSE - similarities and differences between different contaminants**
- Is there a consistent approach in response modelling across contaminants?
 - What challenges are shared (e.g. uncertainties, sensitivities, lack of data, time frames)?
 - What differences arise due to contaminant specifics?
- 12:20 LUNCH**

13:05 SESSION 2: MODELLING in PLANNING and PREPAREDNESS

- 13:05 Outline of approaches in the National Risk Register and Resilience Direct** *Matthew Hort
(MetOffice)*
The role of science in the development of the National Security Risk Assessment (NSRA) - How the Government Office for Science feeds into the development of the NSRA, and uses the product in assessing departmental capability gaps and planning exercises
- 13:25 What is the reasonable worst case?** *Jonathan Rougier
(Rougier Consulting)*
- 13:45 REPPIR approach to consequence assessment and associated risk framework** *Chris Boyd (ONR)*
- 14:05 How dispersion modelling informs public safety decision making for risks presented by major hazards installations** *Harvey Tucker (HSE)*
- 14:25 Discussion: PLANNING & PREPAREDNESS - similarities and differences**
○ What challenges are shared (e.g. uncertainties, sensitivities, lack of data, time frames)
○ What differences arise due to contaminant specifics?
○ Does planning adopt a consistent approach to risk mitigation across contaminants?
- 14:50 TEA**
Topics for discussion in the final session will be shown at the end of the previous session, and will be on notice boards available during the tea break, together with post-its and pens for participants to add their thoughts on the different topics – these will be briefly summarised in the next session
- 15:10 Discussion: Conclusions on key topics**
○ What are current weaknesses/similarities?
○ How could things be improved?
○ How to share best practice in emergency planning and response across dispersion hazards
- 15:40 Conclusions - Key points for taking forward** *Robin Grimes
(Chief Scientist
MoD)*
- 15:55 Close-out** *Simon Gant (HSE)*

Questions for ADMLC seminar:

Challenges in modelling for emergency planning and response to contaminant releases

In your seminar pack you will find a coloured post-it which corresponds to the coloured questions below. We would be grateful if you could use the post-it to answer the relevant questions and then stick the post-it on the relevant flip chart in the atrium. We would encourage you to answer other questions if you have time using the post-its that can be found next to the flip charts.

ORANGE

1. Current practice in modelling approaches

- 1.1. Are you aware of the differences in *modelling* approaches (e.g. dispersion modelling) for different contaminants across UK government agencies?
- 1.2. Does understanding of these differences/consistency between agencies need to be improved?
- 1.3. Do you have any suggestions of how to do this?
- 1.4. In your discipline, are there differences between models used for planning and models used for response, and are these appropriate/necessary/important?
- 1.5. Are improvements needed in the *modelling* approaches for (A) planning and (B) response and, if so, what weaknesses should be addressed?

PURPLE

2. Current practice in policies for emergency planning and response

- 2.1. Are you aware of any differences in the *policies* for emergency planning and response across different contaminants?
- 2.2. Does understanding of modelling approaches and their limitations within the policy context need to be improved?
- 2.3. Do you have any suggestions of how to do this?
- 2.4. Is there appropriate consistency across scenarios/contaminants in terms of the overall aims for public health protection or should there be more? For example, do some disciplines focus more on low probability and high consequence events and others on higher probability and lower consequence events?

GREEN

3. Emergency preparedness and exercises

- 3.1. In your discipline, is there any disconnect between emergency preparedness/planning and emergency response? For example, do emergency exercises consider an appropriate and/or full range of scenarios?
- 3.2. Are current modelling approaches for (A) planning and (B) response adequate for the full range of scenarios?
- 3.3. To what extent are uncertainties and lack of knowledge considered in (A) emergency exercises, and (B) emergency response?
- 3.4. Do decision-makers practise making protection decisions under uncertainty and do modelling outputs support them?
- 3.5. Do emergency planning and response exercises fully exercise the modelling capabilities and use/challenge the outputs provided?

PINK

4. Improving collaboration across the UK and internationally

- 4.1. Do you think that the national policy in planning (e.g. the national security risk assessment) is fully achieved by the current approaches in modelling, exercising and response planning?
- 4.2. Are there any areas of weakness or inconsistency that should be addressed?
- 4.3. How could these weaknesses/inconsistencies be overcome?
- 4.4. How could best practice in emergency planning and response be shared across the different disciplines?
- 4.5. Do you think it would be useful to improve collaboration between the relevant UK government agencies and also industry and academia (in the UK and overseas) to share good practice on these topics? If so, how? Are there existing collaborations in place?