



Atmospheric Dispersion Modelling  
Liaison Committee (ADMLC)

# **Challenges in modelling for emergency planning and response to contaminant releases**

ADMLC Workshop, Thursday 12 March 2020  
PHE, Harwell Campus, Oxfordshire, UK



# Background to ADMLC

- **1977:** Experts from UK government departments, utilities and research organisations met to discuss atmospheric dispersion modelling of radioactive releases
  - Informal steering committee reviewed recent developments
- **1995:** ADMLC formed with initial focus on the nuclear industry
- **Since 1995:**
  - Scope widened to include range of interests of ADMLC members, including UK and Irish industrial and regulatory organisations
  - **Aim:** to review atmospheric dispersion and related phenomena for application primarily to authorization or licensing of discharges to atmosphere resulting from industrial, commercial or institutional sites
  - Main interests on fixed sources, rather than transport sources, including both routine releases and releases in accident or “upset” conditions



# Background to ADMLC

Current membership:





# Background to ADMLC

- ADMLC committee meets three times per year
- Each member organization contributes £3k each year
- ADMLC public workshop/seminar every 2 to 3 years
- Small research projects commissioned, e.g.:
  - Modelling pollutant dispersion from non-point sources (2016)
  - Presenting uncertain information in radiological emergencies (2016)
  - Sensitivity of dispersion modelling results to source terms (2017)
  - Dispersion modelling of odour emissions (2020)
- Ongoing projects:
  - Applicability of Gaussian modelling techniques to near-field dispersion
  - Dense-gas dispersion for industrial regulation and emergency response
- Dispersion model validation datasets, e.g. Thorney Island
- Reports and datasets publicly available: <http://www.admlc.com>



## ***Atmospheric dispersion knowledge gaps and research priorities: Results from a recent survey of ADMLC members***

- Top four topics for future ADMLC research projects:
  - 1. Deposition modelling**
    - Review of dry/wet deposition modelling of gases and particulates
  - 2. Modelling of sources in an emergency**
    - When there is limited information available
  - 3. Fire source terms and plume rise**
    - Including landfill, chemical and nuclear fires
  - 4. Understanding the impact of meteorological uncertainties**
- Partnership with other funding agencies or self-funding research organisations on topics of mutual interest?



# Workshop Programme

10:00	Simon Gant (HSE)	ADMLC Chair welcome
10:10	Matthew Hort (Met Office)	Introduction – Modelling perspectives
10:30	Robin Grimes (MOD Chief Scientist)	Perspectives on emergencies involving atmospheric releases
<b>EMERGENCY RESPONSE</b>		
10:55	Pete Bedwell (PHE) and Sarah Millington (Met Office)	The application of atmospheric dispersion modelling for the provision of health protection advice in the event of a radiological incident
11:15	James Stewart-Evans (PHE)	The practical use of models during the emergency response to chemical incidents and fires
11:35	Claire Witham (Met Office)	Responding to volcanic eruptions
11:55	Q&A	
12:20	Lunch	



# Workshop Programme

<b>EMERGENCY PLANNING AND PREPAREDNESS</b>		
13:05	Matthew Hort (Met Office)	Outline of approaches in the National Risk Register and Resilience Direct
13:25	Jonathan Rougier (Rougier Consulting)	What is the reasonable worst case?
13:45	Chris Boyd (ONR)	REPPIR approach to consequence assessment and associated risk framework
14:05	Harvey Tucker (HSE)	How dispersion modelling informs public safety decision making for risks presented by major hazards installations
14:25	Q&A	
14:50	Tea	
15:10	Discussion on key topics	
15:40	Robin Grimes (MOD Chief Scientist)	Conclusions - Key points for taking forward
15:55	Simon Gant (HSE)	Close-out



## Key topics for discussion

- Four key topics:
  1. Current practice in *modelling* approaches
  2. Current practice in *policies* for planning and response
  3. Emergency preparedness and exercises
  4. Improving collaboration across the UK and internationally
- Questions asked on printed handout
- Please provide response to questions on post-it notes and pin to relevant notice board in lobby
- Feedback very welcome!
- Facilitated discussion in afternoon
- Responses and Q&A circulated to attendees after meeting