

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

Coronavirus

How to avoid catching or spreading coronavirus

Do

- ✓ wash your hands with soap and water often – do this for at least 20 seconds
- ✓ always wash your hands when you get home or into work
- ✓ use hand sanitiser gel if soap and water are not available
- ✓ cover your mouth and nose with a tissue or your sleeve (not your hands) when you cough or sneeze
- ✓ put used tissues in the bin straight away and wash your hands afterwards
- ✓ try to avoid close contact with people who are unwell

Don't

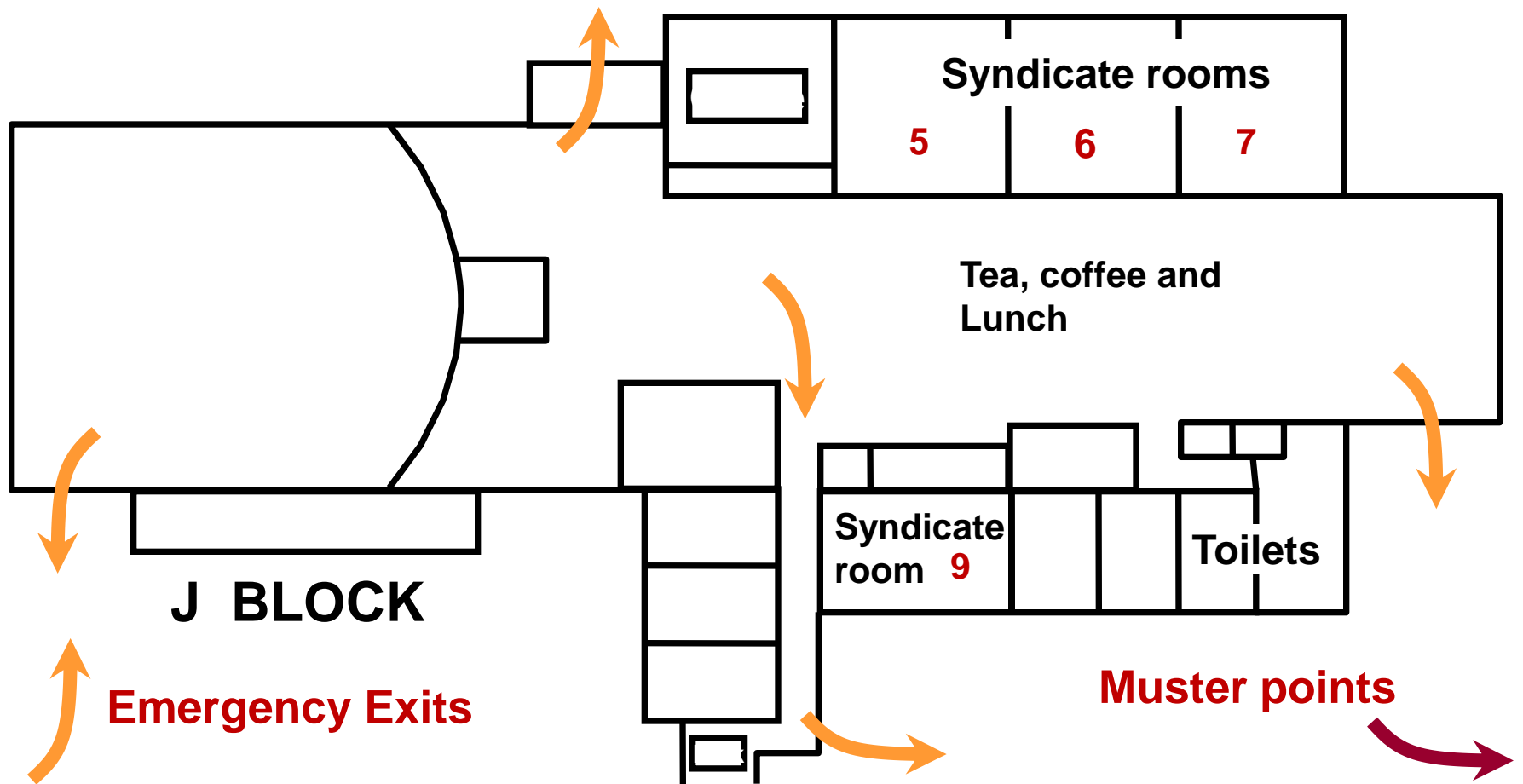
- ✗ do not touch your eyes, nose or mouth if your hands are not clean



IF YOU HEAR AN ALARM YOU MUST TAKE IMMEDIATE ACTION

- | | |
|--------------------------------|---|
| FIRE ALARM | A Warbling Sound –
Leave the building and follow the signs to the
assembly point at the front of the Training Centre |
| SITE INCIDENT
ALARM | An intermittent noise from the klaxons like harsh car
hooters. This requires no action from our building
occupants |
| CAR PARKING | All vehicles are parked at owners risk. Normal
precautions should be taken against loss or theft.
Your vehicle registration number should be logged
with Reception |
| BADGES | Badges should be worn at all times and returned to
Reception when you leave |

The Chilton Training Centre



Supplementary Information For Visitors

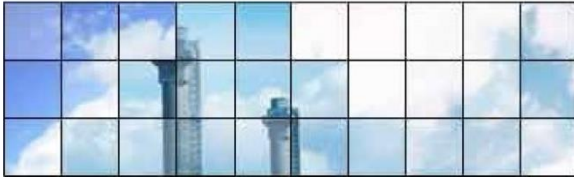
Please put mobile phones on silent

No food and drink in lecture theatre please

Notify reception before leaving the building (even temporarily)

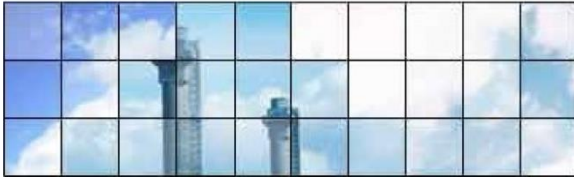
In an emergency we need to know who is still in attendance

Thank you



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:



Met Office



Scottish Environment
Protection Agency



Environmental Protection Agency

defra



Food
Standards
Agency
food.gov.uk



Environment
Agency



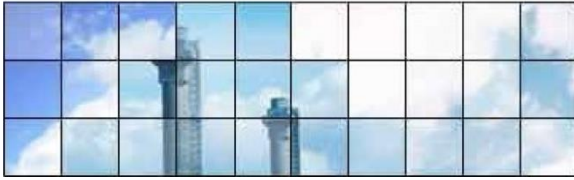
Public Health
England



Office for
Nuclear Regulation



Cyfoeth Naturiol Cymru
Natural Resources Wales



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 ADMMLC members

- Top four topics for future ADMMLC 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
EMERGENCY RESPONSE		
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

EMERGENCY PLANNING AND PREPAREDNESS		
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	
15:20	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