

# Environment Agency requirements for monitoring radioactivity in air

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# Contents

- Summary
  - Standards
  - Standards Development
  - Nuclear authorisation conditions
  - Some lessons

# Current monitoring guidance and standards

- Process industry standards relevant to air monitoring:
  - MCERTs standards (e.g. continuous emission monitoring of stacks)
  - M1 and M2 guidance on monitoring emissions to air – useful for position of sampling and representative sampling
- Radiological monitoring:
  - M11 Radiological monitoring of emissions to atmosphere

# Radiological Monitoring Standards Working Group (RMSWG)

- Formed May 2006
- Sub-group of Nuclear Industry Liaison Group
- Membership from regulators, industry and experts
- Aims to develop and promote good practice
- Key elements of current work programme:
  - MCERTS Operator self-monitoring of effluent flow
  - Standardised reporting of discharges
  - Environmental monitoring guidance
  - MCERTS Radiochemical analysis standards
  - Revision of M11

# Future requirements for gaseous effluent radiological monitoring

Gaseous flow:  
Possible MCERTS  
Standard

Sampling and  
instrument monitoring:  
Revised M11  
guidance, including  
performance criteria

Analysis:  
Possible MCERTS  
standard

New ISO standard on  
sampling airborne  
radioactive materials  
from the stacks and  
ducts of nuclear  
facilities

# Future requirements for ambient air radiological monitoring

Sampling:

RMSWG  
Environmental  
monitoring guidance

Analysis:

Possible MCERTS  
standard

# Standard authorisation conditions

- 7 “ The Operator shall take samples and conduct measurements, tests, surveys, analyses and calculations to determine compliance with the limitations and conditions of this Authorisation. “
- 8 Best Practicable Means (BPM) unless means specified in this authorisation - cf Best Available Technology (BAT)
- 9 If required, we can specify
- 10 Samples, keep and provide
- 11 keep in good repair, limits, conditions and dose assessments
- 12 Acceptance into service
- 13 Calibration
-

## Some examples of problems in field

- In-appropriate correction of C-14 measurements for S-35
  - Misunderstood chemistry
  - Unofficial method and calculation changes
  - Up-graded person doing technical and supervisory role
  - Narrowly escaped prosecution
- Incorrect C-14 assessment
  - Changed the volume of the fluid in a bubbler
    - Calculation not amended
    - No longer achieving saturation
    - Old CO<sub>2</sub> in air factor

## Some examples of problems in field 2

- Stack flow measurements not reflecting current state of the plant
- Not realising that tritium was present in significant quantities in the discharges
- Liquid scintillation standard pellets outside specification
- Not realising contractors had replaced detectors
- Experimental quench curve replaced correct one
  - Incorrect energy windows – just not detection S-35
  - Not controlling your equipment
  - Not promptly using intercomparison data
  - Not believing you could be wrong