Summary of Session 4

IEM on

"Strengthening R&D Effectiveness in the Light of the Accident at the Fukushima Daiichi NPP"

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Session 4

- Topic of Session:
  - Emergency Preparedness and Response
- Presentations:
  - 1 Keynote Speech (Olivier Isnard, IRSN)
  - 1 Invited Presentation (G. Wotawa, WMO)
  - 3 Technical Presentations
  - 4 Related Posters

Key Points from Presentations & Posters (1)

- Assessment and prognosis is required during nuclear emergencies
  - Capabilities of Member States could be utilised through RANET
  - R&D is needed to help improve assessment tools
  - Member States and operators need to be prepared to exchange dynamic data

Key Points from Presentations & Posters (2)

- Improvements of Atmospheric Transport and Dispersion Models (ATDM):
  - High-resolution numerical weather prediction modelling and data assimilation techniques have been implemented:
    - To further improve physics inherent to the internal process of the models (example: deposition velocity).
    - To provide new capabilities for operational modelling of urban environments.
    - To implement Field Team support tools for mission planning.
  - High-resolution ATDM products have been developed
    - to better resolve terrain and precipitation features.
    - to support for deployment of sampling and monitoring devices.
  - Ensemble ATDM products are used to better account for ATDM uncertainties
- Continued efforts are required to combine prognostic data and measured data in the early phase of an emergency

Key Points from Presentations & Posters (3)

- Monitoring data plays an important role in the decision making process. Timely provision of high quality data is of utmost importance.
- Work ongoing to create international standards for data harmonization and exchange (e.g. IRIX, EURDEP, IRMIS) and integration in existing frameworks should be encouraged
- Arrangements between international organizations (e.g. IAEA, WMO and CTBTO) play an important role in information exchange
  - ATDM products and meteorological
  - CTBTO worldwide particle/noble gas network

Key Issues and Areas to be Addressed in Future R&D

- Further R&D is required to:
  - Enhance ATDM products
  - Improve high resolution weather forecasts
  - Enhance source term estimations during emergencies, focussing on key radionuclides
  - Improve sustainability of detection systems for deployment in extreme weather conditions with autonomous operation and improved communications
  - Improve spectroscopic detection capabilities of deployable probes

Lessons Learned with regard to Session Topic

- Challenges exist with respect to modelling:
  - Radioiodine in different chemical forms;
  - Incorporation of precipitation; and
  - Dry deposition
- Ongoing R&D is addressing these challenges

Recommendations for Further International Collaborative Work

- Harmonization within and between the following communities needs to be coordinated at an international level:
  - Nuclear installation assessment capabilities
  - ATDM and weather forecaster capabilities
  - Measurement capabilities
  - Decision makers

…Thank you for your attention!