

### Background

In late 1986, the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency were established to provide a legal basis for improved international cooperation in responding to nuclear and radiological emergencies. This convention was acceded by a number of International Atomic Energy Agency (IAEA) member states. In 2000, the IAEA General Conference encouraged Member States to participate in the process of strengthening international, national and regional capabilities for responding to nuclear and radiological emergencies and to make those capabilities more consistent and coherent. In 2002, the General Conference encouraged Member States *to contribute to the international efforts to develop a consistent, coherent and sustainable joint programme for improved and more efficient international response to nuclear and radiological emergencies.*

The IAEA Secretariat and the National Competent Authorities Co-ordination Group together worked out an Action Plan and in June 2004 the *International Action Plan for Strengthening the International Preparedness and Response System for Nuclear and Radiological Emergencies, 2004–2009* was approved by the IAEA Board of Governors.

In the framework of the new action plan, the working group on International Assistance (WG-B) with its expert groups is preparing documents aiming to enhance and harmonise international assistance in the event of a nuclear or radiological incident/emergency. SCK·CEN leads the Expert group B5 and is working on enhancing atmospheric dispersion products for nuclear events and their delivery mechanism by Regional Specialised Meteorological Centres (RSMCs).

### Objectives

To Update – in collaboration with World Meteorological Organisation (WMO) - standard meteorological products, and enhance arrangements for providing associated assistance.

### Principal results

The expert group has made a number of recommendations, which have been submitted to a number of IAEA national competent authorities (NCAs) for feedback. According to these recommendations, RSMCs are to produce trajectories, plume arrival time and dispersion calculations, including:

1. Airborne concentration ( $\text{Bq}\cdot\text{m}^{-3}$ ) by using as a default continuous release of 72 hours duration with  $1 \text{ Bq}\cdot\text{h}^{-1}$  of Xe-133, I-131, Cs-137;
2. Time integrated airborne concentrations ( $\text{Bq}\cdot\text{h}\cdot\text{m}^{-3}$ ) by using as a default a continuous release of 72 hours duration with  $1 \text{ Bq}\cdot\text{h}^{-1}$  of Xe-133, I-131, Cs-137;
3. Total deposition ( $\text{Bq}\cdot\text{m}^{-2}$ ) by using as a default continuous release of 72 hours duration with  $1 \text{ Bq}\cdot\text{h}^{-1}$  of I-131, Cs-137.

The concept of operations is through secure web connection as the standard delivery platform and in case a member state does not have access to internet, a reduced set of atmospheric dispersion products will be made available by fax. The latter will also be kept for backup purposes in case of possible vulnerability of internet due to web traffic during a severe nuclear emergency.

### Future work

#### Timeline

- By February 2006 a set of enhanced products to be reviewed by both a select group of NCAs (with and without atmospheric dispersion capabilities) and WMO
- IAEA and WMO to work on the implementation plan of the enhanced atmospheric dispersion products.
- By February 2006 a demonstration of harmonised presentation of dose assessment products from different national and international systems.
- New arrangements and products formally in effect and fully operational by Dec 2006

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### Main reference

Ugletveit and Molhoek *Radiat Prot Dosimetry*.2004; 109: 149-150 "Ongoing efforts to improve the international nuclear and radiological emergency".