

RSMC Obninsk report of activities for 2012

Executive Summary

Primary activities for 2012 consisted of the RSMC quarterly tests conducted by IAEA and incremental updates and improvements to the response procedures, and software. The Provisional Technical Secretariat (PTS) of the Comprehensive Test Ban Treaty Organization (CTBTO) made both operational and planned requests for inverse modelling support by RSMC Obninsk from January to August and in October and December. In July 2012 a communication test between RSMC Obninsk and all NMHS of RA-II was conducted.

1. Introduction

The Federal Environmental Emergency Response Centre of Roshydromet (FEERC of Roshydromet) is designated by the WMO as the Obninsk Regional Specialized Meteorological Centre (RSMC) for the provision of atmospheric transport model products for environmental emergency response. The region of responsibility is WMO Regional Association (RA) II, which encompasses Asia. RSMC Obninsk performs its functions jointly with RSMC Tokyo and RSMC Beijing in WMO RA II. In addition to emergency response, RSMC Obninsk contributes global inverse modelling support to the CTBTO.

2. Operational Contact Information

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3. Emergency operations and information on dissemination of products

The standard RSMC EER products and Joint Statements were transmitted by fax and uploaded to the common web pages of websites of RSMC Washington, Montreal, Melbourne, Toulouse, Tokyo, Beijing and Obninsk.

4. Exercises and routine tests

Quarterly Tests:

RSMC Obninsk participated in quarterly tests conducted by IAEA. Table 1 contains summary information on these tests.

Month	Initiated by	WMO Regional Associations
February 16	IAEA	III, IV
May 17	IAEA	V
August 16	IAEA	I, VI
November 15	IAEA	II

Table 1: RSMC tests for 2012

5. Operational issues and challenges:

The problems were mainly associated with fax transmission. Not all of the messages reached the intended addressee; most of the recipients did not confirm the receipt of information. We find it best to use more up-to-date means of communication.

6. Summary and status of the operational atmospheric transport and dispersion models

At present, the following models of regional and global atmospheric transport are used:

- The trajectory model generates a map with a set of 3-D trajectories of air masses starting at specified heights above ground level.
- The STADIUM (STochastic Atmospheric Diffusion Model) is used for modeling atmospheric transport and dispersion of pollutants (radioactive or chemical) over medium and long ranges of distances. The STADIUM is based on Lagrangian approach with turbulent dispersion simulated by a random walk technique (Monte-Carlo method). Such an approach allows applying modern parameterizations for turbulent dispersion and deposition processes. Deposition including both wet and dry deposition is computed using a deposition velocity for the dry component of the removal process and in-cloud and below-cloud removal rates for the wet deposition. The model allows considering the

essential features associated with instability and non-uniformity of the atmospheric boundary layer, spatial heterogeneity of the underlying surface.

The STADIUM provides a set of spatial-temporal fields of air concentration and deposition (dry and wet) of pollutants.

7. Plans for 2013:

- Continue the work with all RSMCs on using the common web page and posting their products on the RSMC mirrored Web sites.
- Improve contacts with NMHSs in WMO RA II.

References

WMO, 2011: Documentation on RSMC Support for Environmental Emergency Response. *WMO-TD/No.778*. Available online at <http://www.wmo.int/pages/prog/www/DPFSERA/td778.html>