

EMRAS - Theme 2
Remediation of Sites with
Radioactive Residues
Urban Remediation Working Group

21-25 November 2005
Vienna

Objective of the Working Group

Testing and improving the prediction of dose rates and doses to humans for urban areas contaminated with dispersed radionuclides

Specific Objectives

- Prediction of changes in radionuclide concentrations and dose rates as a function of location and time
- Identification of the most important pathways for human exposure
- Prediction of the reduction in radionuclide concentrations and dose rates expected to result from specific countermeasures or remediation efforts

Progress of Working Group

- Distribution of draft scenario description in November 2004
- Meeting in May-June 2005
 - Summary of models and capabilities (literature survey on modelling approaches)
 - Discussion of modelling approaches
 - Discussion and refinement of draft scenario for modelling

Summary of models and capabilities

- Literature survey prepared by Florence Galloway
- Initial presentation in May 2005
- Update at this meeting
- Draft report for distribution soon

Discussion of modelling approaches

- Opportunity this week for further discussion
- Additional modellers present at this meeting

Initial modelling scenario: Chernobyl fallout in three Ukrainian towns

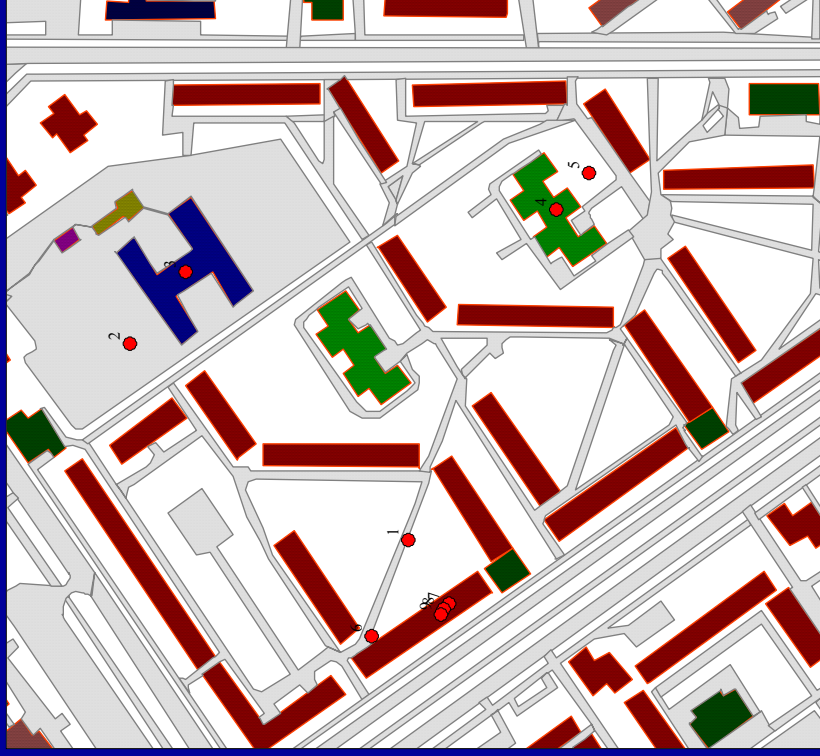
- Pripyat
 - Evacuated soon after accident, uninhabited since then
- Polesskoe
 - Remained inhabited after accident
- Slavutych
 - Built after accident on contaminated ground

Refined scenario description

- Phased approach
 - (A) Contaminated urban environment, undisturbed (no human activity)
 - (B) With normal human activity
 - (C) With effects of defined remediation efforts
- District #1 of Pripjat
- Time series of dose rates and contaminant concentrations



District #1 of Pripjat



- Nine defined locations
- Four outdoors, corresponding to locations for some measurements
- Five indoors
 - Residential building
 - Schools

Plans for modelling exercise

- Modified scenario for District #1 of Pripyat, Phase A, was distributed in October 2005
- Some preliminary predictions to be presented at this meeting
- Opportunity for discussion of Phases B and C, remaining questions on Phase A

Draft scenario for hypothetical situations

- Chernobyl (Pripyat) scenario deals with an accidental release of radioactive material
- Hypothetical scenarios will deal with deliberate release of radioactive material
 - Radiological dispersal device
 - Deliberate dispersal without explosives
 - Opportunity to model initial contamination event and effectiveness of countermeasures
 - Proposed use of Pripyat as a model town (the information base is already available)
- To be discussed at this meeting

Plans for current meeting

- Presentation and discussion of a variety of models and modelling approaches for contaminated urban areas
 - Including discussion of literature survey
- Presentation and discussion of preliminary model results for District #1 of Pripyat
- Discussion of scenarios for hypothetical situations (deliberate contamination events)
- Joint session with NORM Working Group