

**EMRAS – Theme 2
Remediation of Sites with
Radioactive Residues**

Urban Remediation Working Group

**6–10 November 2006
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

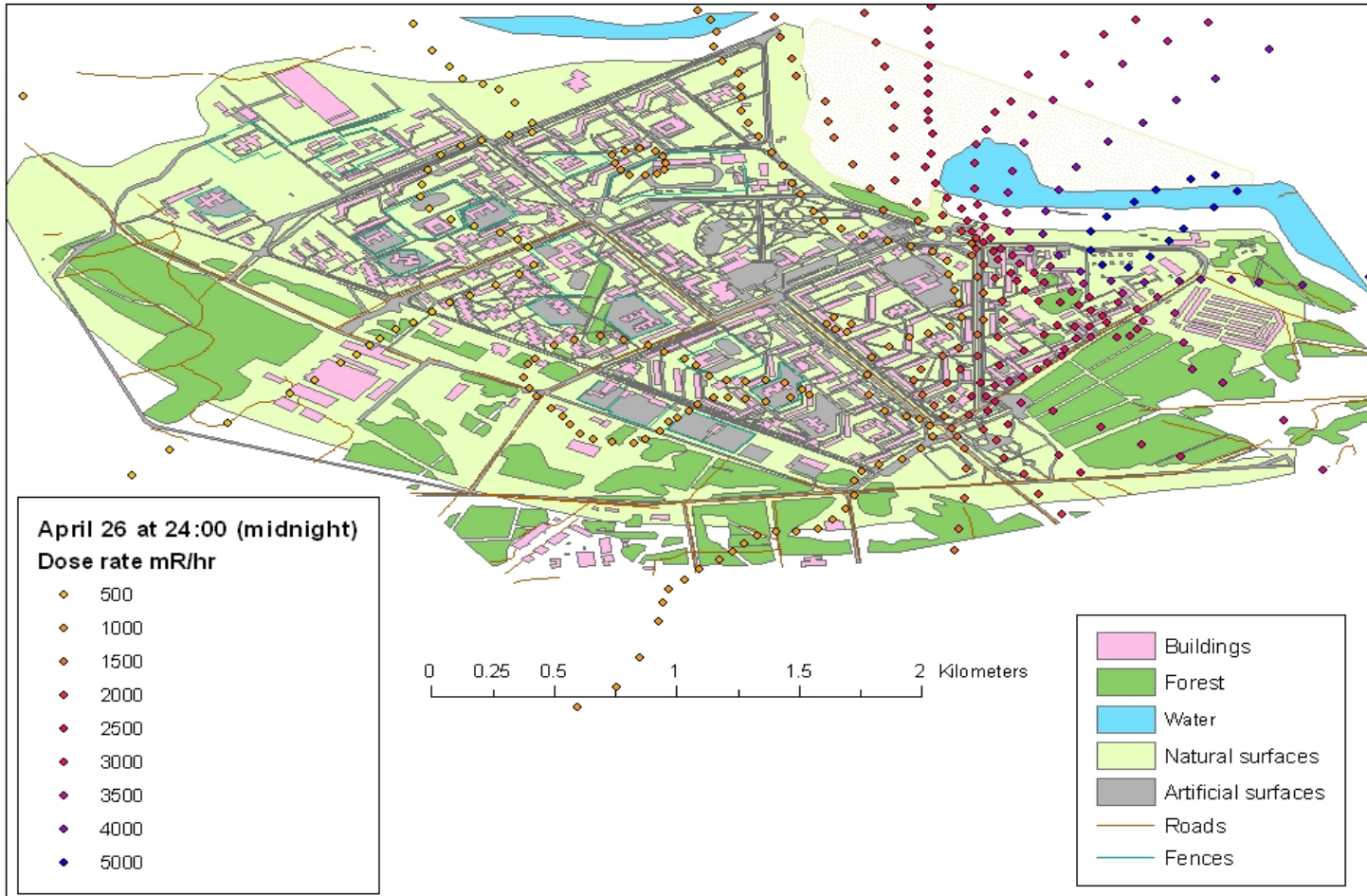
- Meeting in June 2006
- Summary of models and capabilities
 - Literature survey on modeling approaches
- Two modeling scenarios
 - Pripyat (Chernobyl data)
 - Hypothetical (RDD event)
- Draft Working Group report

Summary of models and capabilities

- Literature survey prepared by Florence Gallay
- Initial presentation in May 2005
- Distributed to WG participants in October 2006

Pripyat scenario description

- Chernobyl fallout
 - Town was evacuated, remained largely uninhabited
- Phased approach
 - (A) Contaminated urban environment, undisturbed (no human activity)
 - (B) With normal human activity
 - (C) With effects of defined remediation efforts
- Districts #1 and #4 of Pripyat
- Time series of dose rates and contaminant concentrations

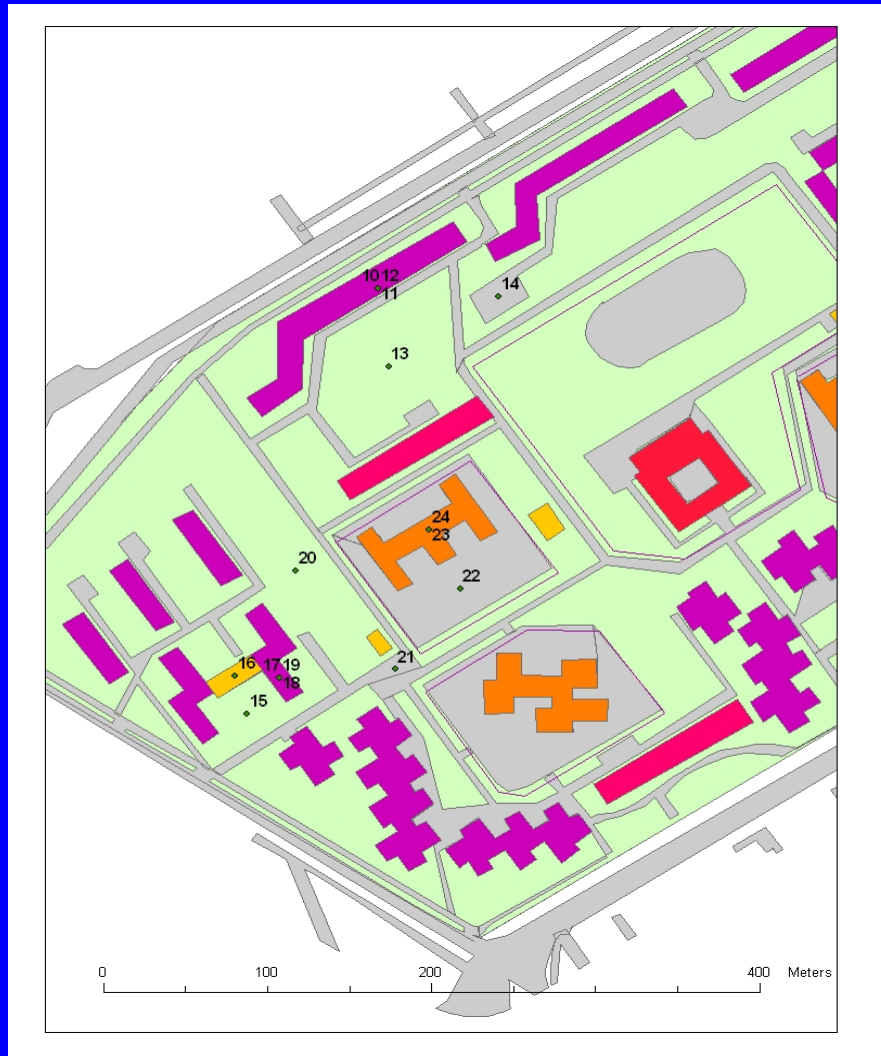


District #1 of Pripyat



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

District #4 of Pripyat

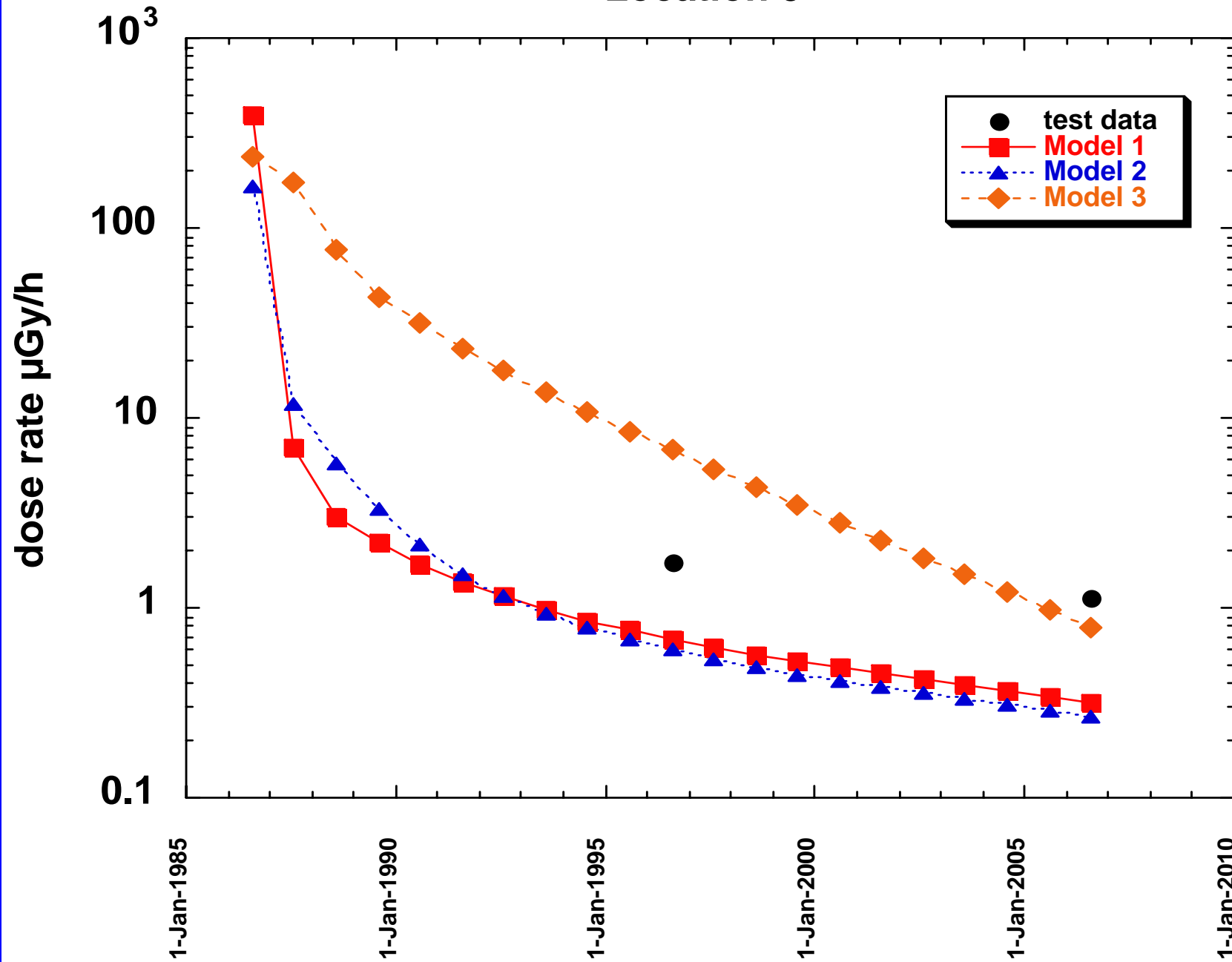


- 15 locations
- Six outdoors
 - A few correspond to locations for measurements
- Nine indoors
 - Residential buildings
 - School

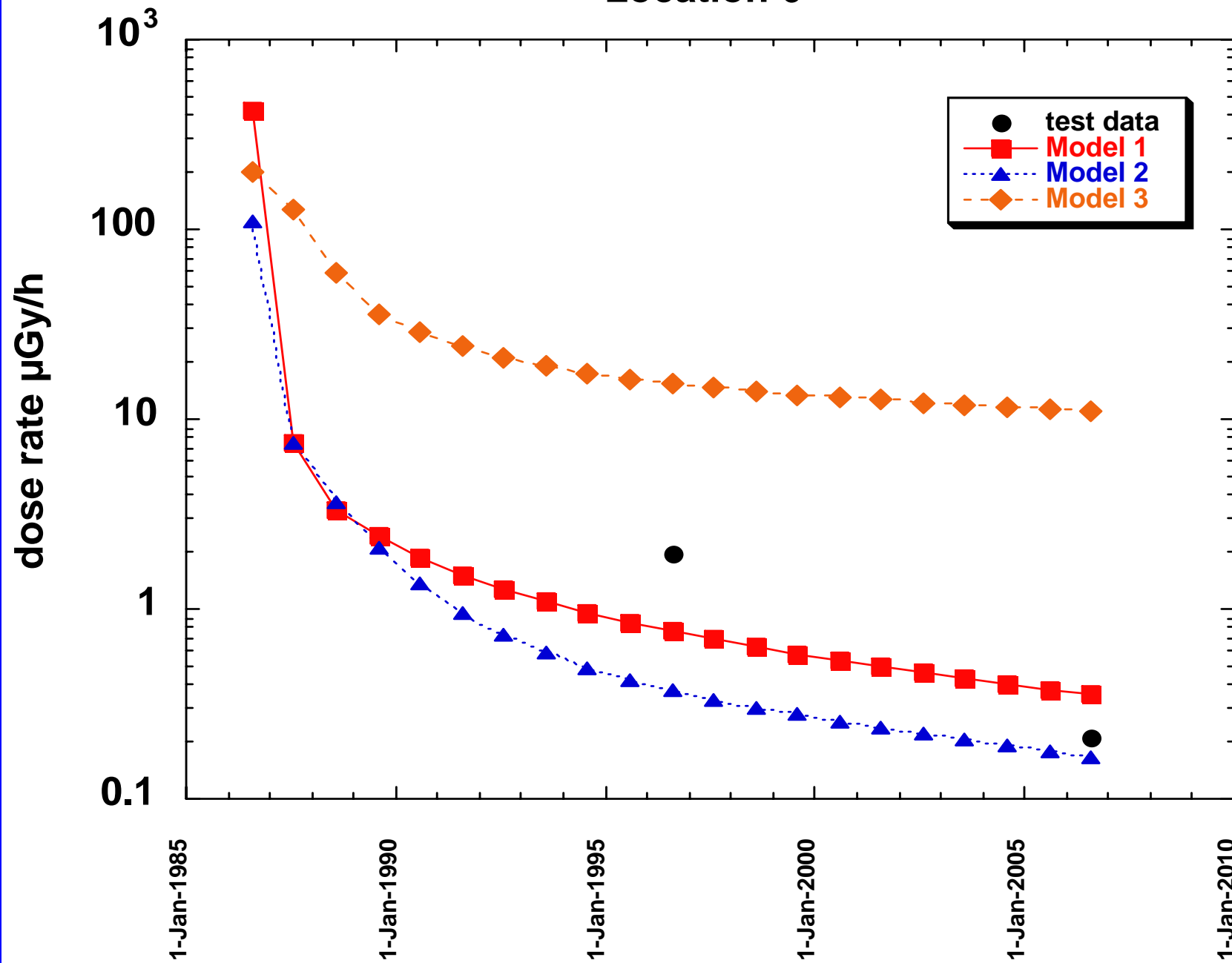
Model results for Pripyat

- Four modelers have made calculations
- Results from three modelers for discussion at this meeting
- Comparison with test data when available
- Selected examples

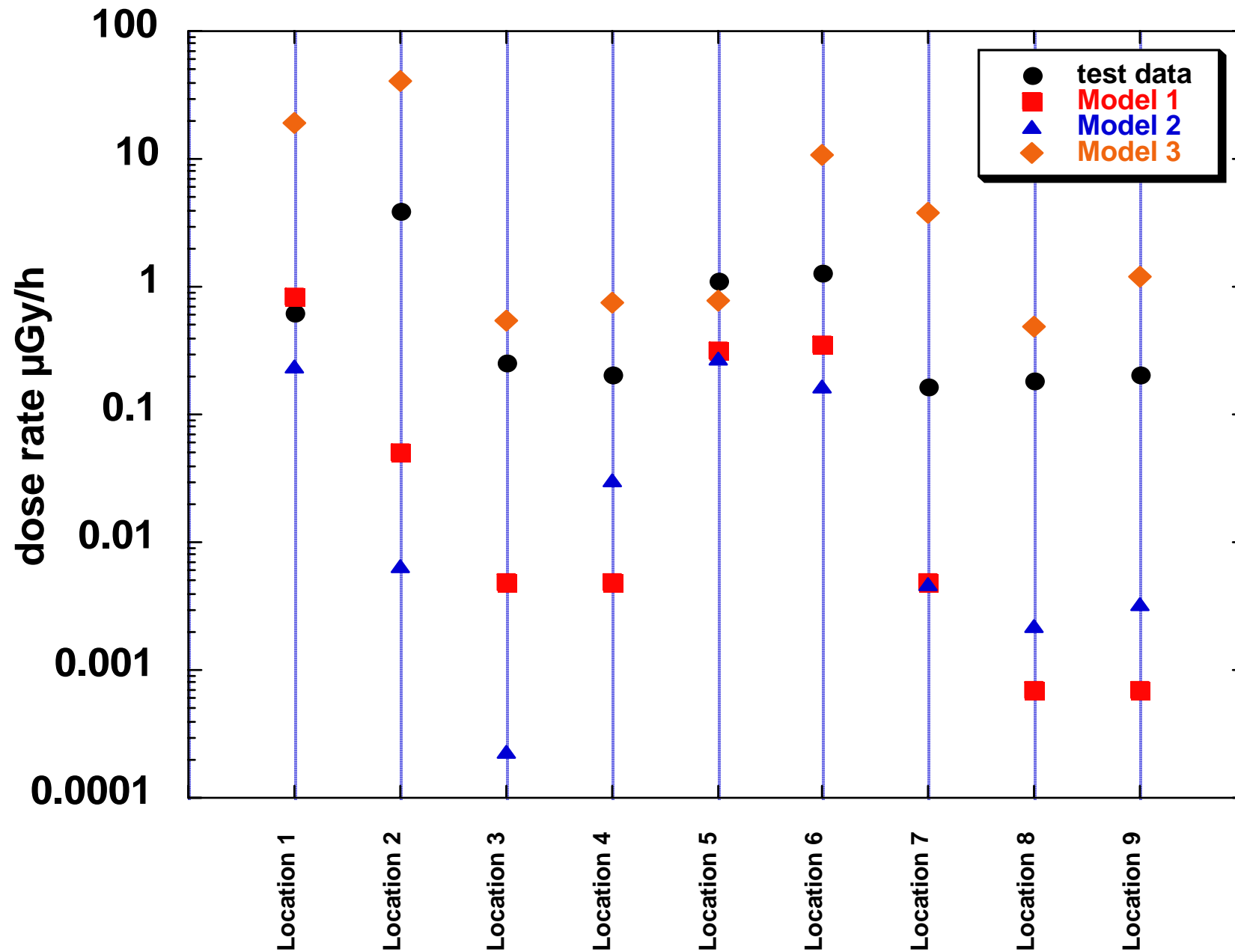
Location 5



Location 6



2006, District #1

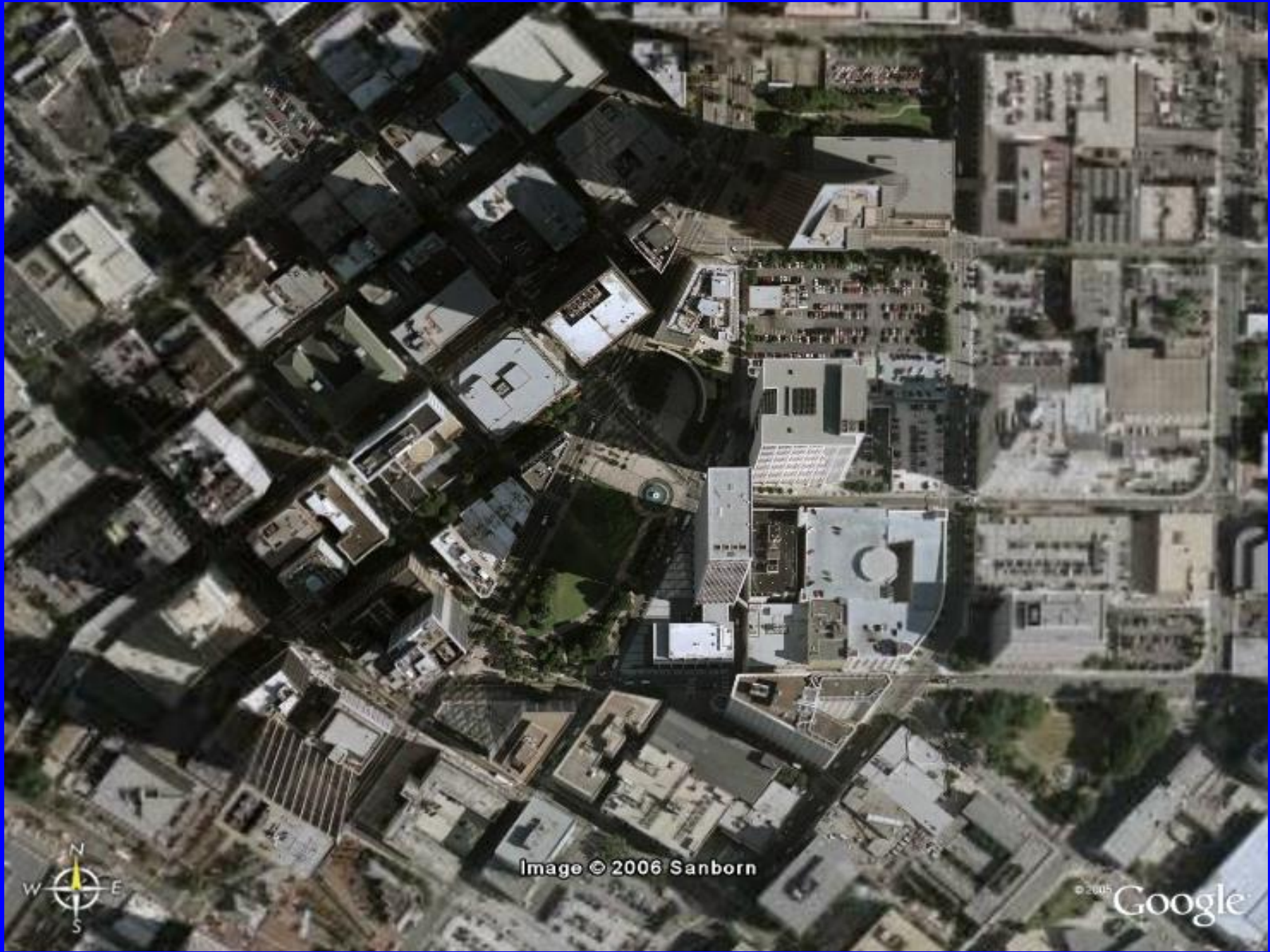


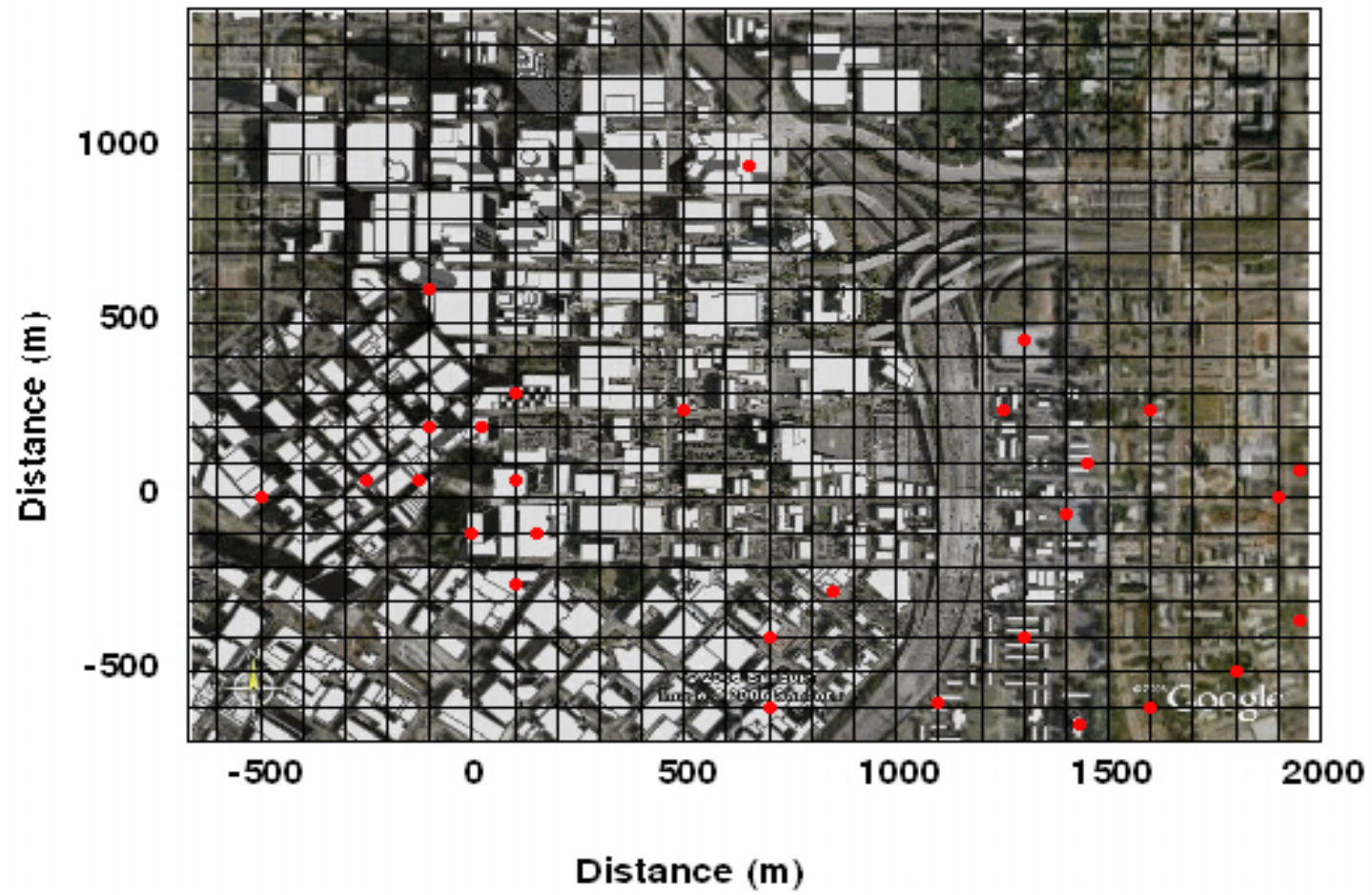
Plans for modeling exercise with Pripyat scenario

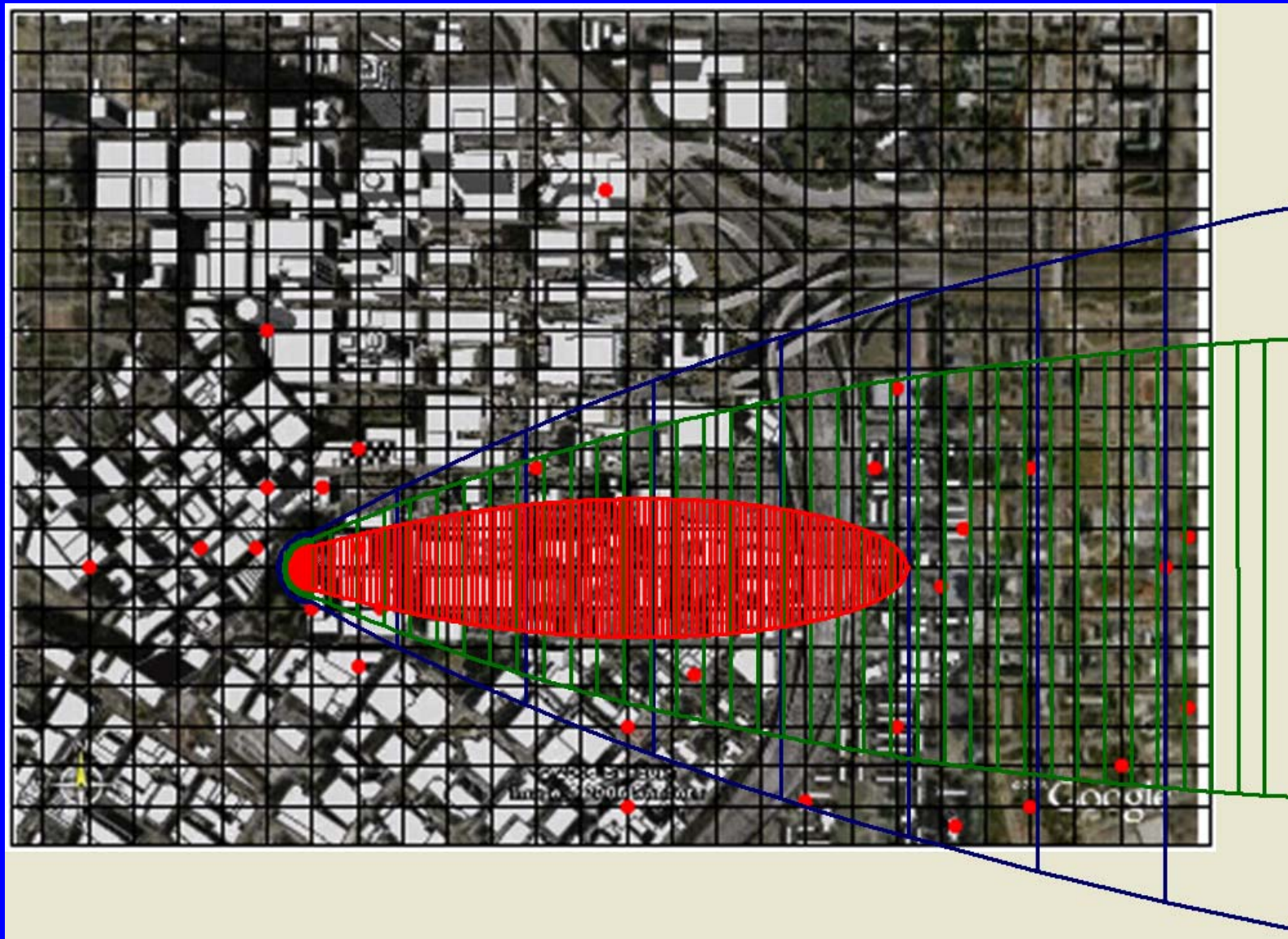
- Full scenario description distributed in May 2006
- Preliminary predictions discussed in November 2005, June 2006
- Additional measurements made in July 2006
- Predictions to be compared with test data (measurements) at this meeting

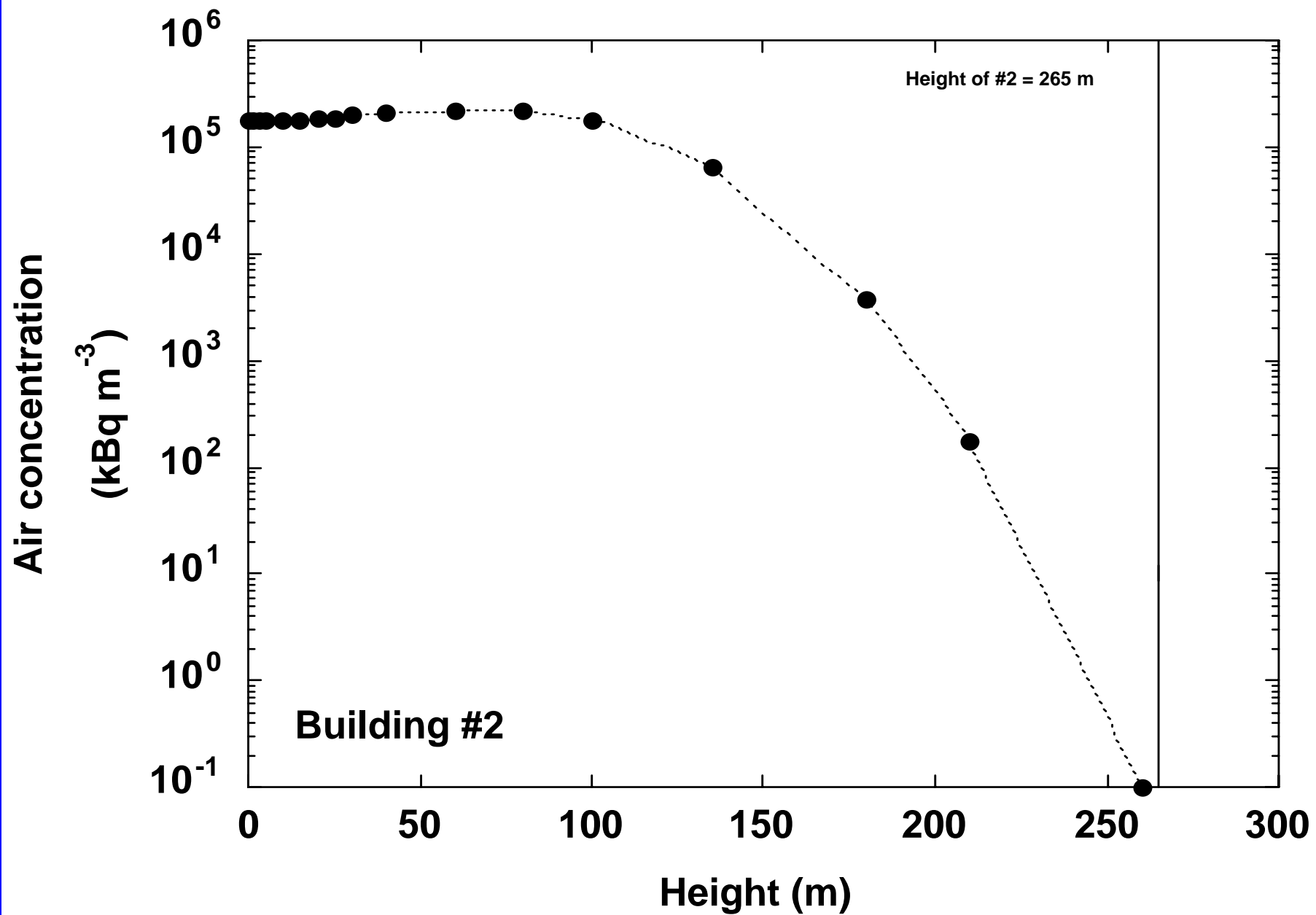
Modeling scenario for hypothetical situations

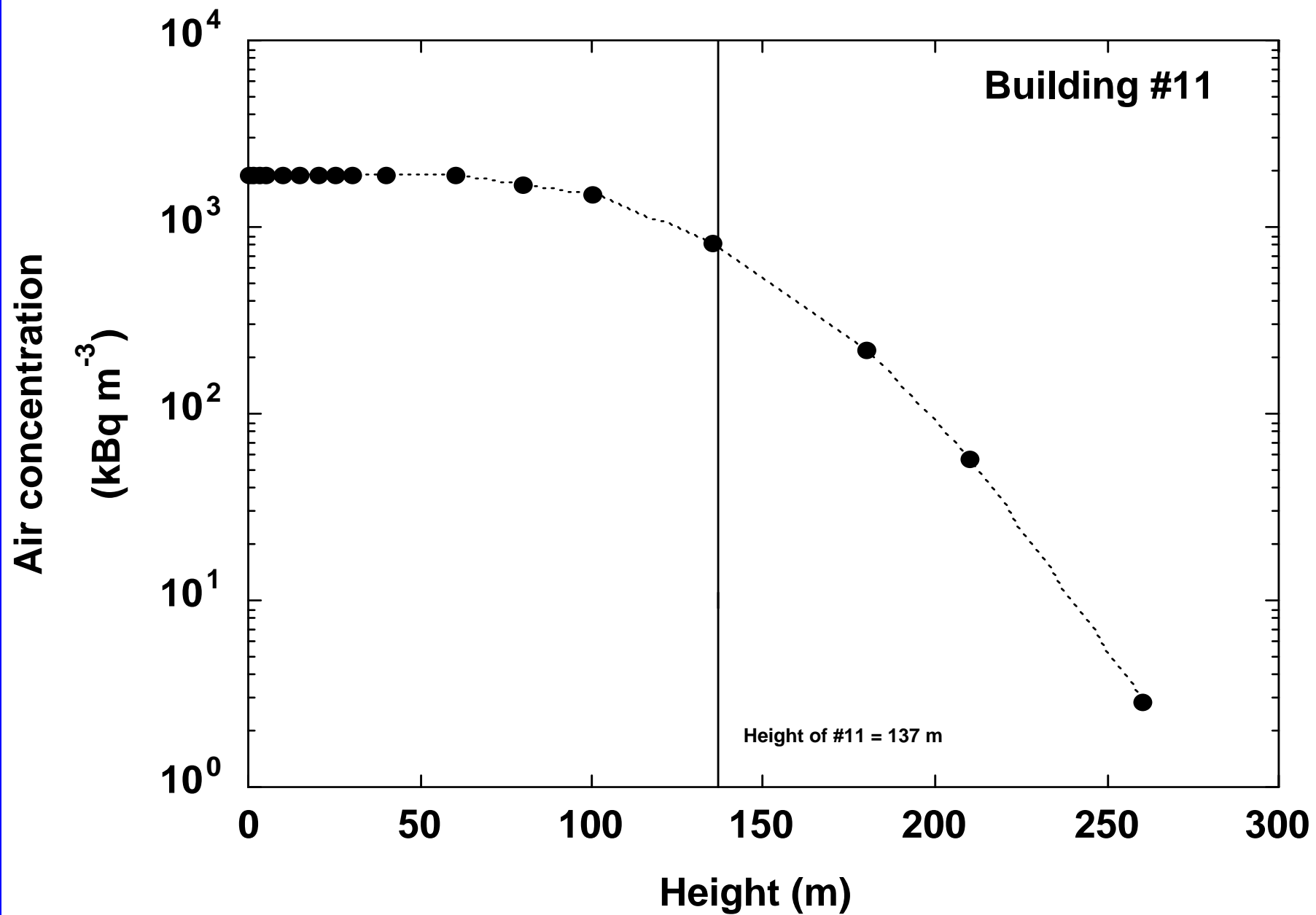
- Hypothetical scenario will deal with deliberate release of radioactive material
 - Radiological dispersal device
 - Pripyat scenario deals with an accidental release of radioactive material
- Opportunity to model initial contamination event and effectiveness of countermeasures











Plans for modeling exercise with hypothetical scenario

- Draft scenario discussed in June 2006
- Revised scenario distributed in October 2006
- Plans for discussion at this meeting

Plans for current meeting

- Presentation and discussion of model results for Pripyat scenario
- Comparison of model results with test data
- Discussion of hypothetical scenario (deliberate contamination event)
- Discussion of modeling approaches
 - Urban contamination generally
 - Countermeasures
- Discussion of draft WG report