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Monitoring strategies to assist dose modelling in the first year after a nuclear accident

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Text

The OPERRA - HARMONE (Harmonizing Modeling Strategies of European Decision Support Systems for Nuclear Emergencies) project aims to address scientific, methodological and operational gaps in the considered Decision Support Systems (SYMBIOSE and RODOS) and to harmonize and expand the models used in these systems. This will allow the development of improved emergency management strategies for reducing doses to the affected population especially for the first year dose.

To predict the first year dose, from all relevant exposure pathways, apart from good models the availability of representative and good quality data is crucial. In this paper preliminary results are discussed on how monitoring (type of measurements, covered region and location, strategy, frequency …) can serve as input for improved modeling and/or confidence building in the model result for: i) the determination of the first year human dose at different locations, including urban areas; ii) the estimation of food activity levels, especially for the next growing season and iii) the estimation of the activity concentration in water bodies.

The presented results include the definition of minimal data sets required for robust impact assessment and obtained, in general from measurements in the preparedness or the response phase of a nuclear or radiological event. These minimal data sets are subsequently tested on a set of accident scenarios to highlight potential issues in the targeted impact assessments.