

Emergency Preparedness in the Early Phase of Severe Accidents - the German Perspective

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Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety

Outline

- What to prepare and how to decide
- European Consensus
- Implementation in Germany



What is a reasonable planning zone?

Reasonable changes certainly with:

- Released activity
- Weather
- Geography

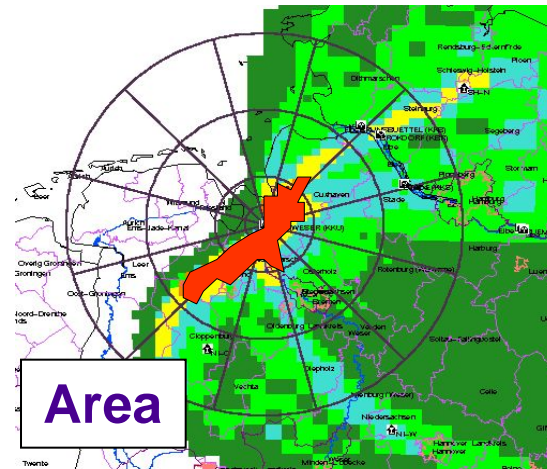
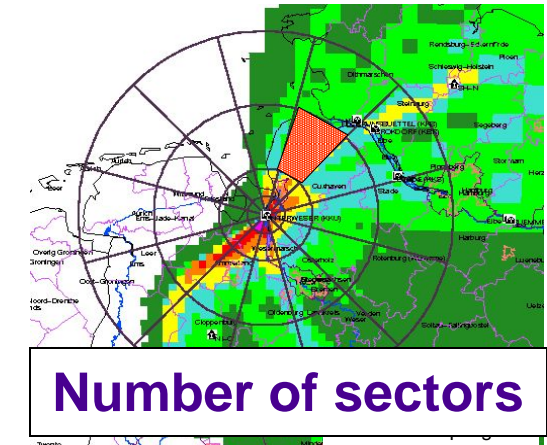
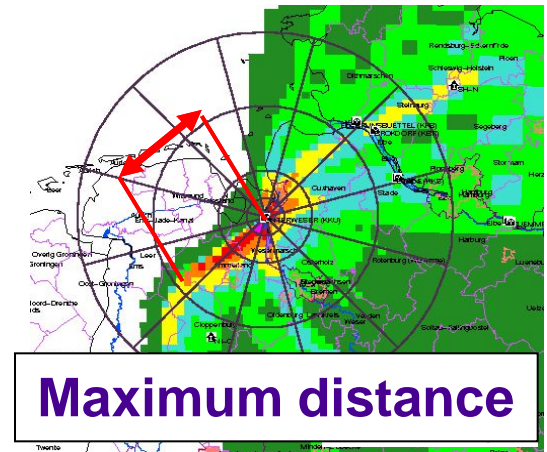


Scenario Simulations

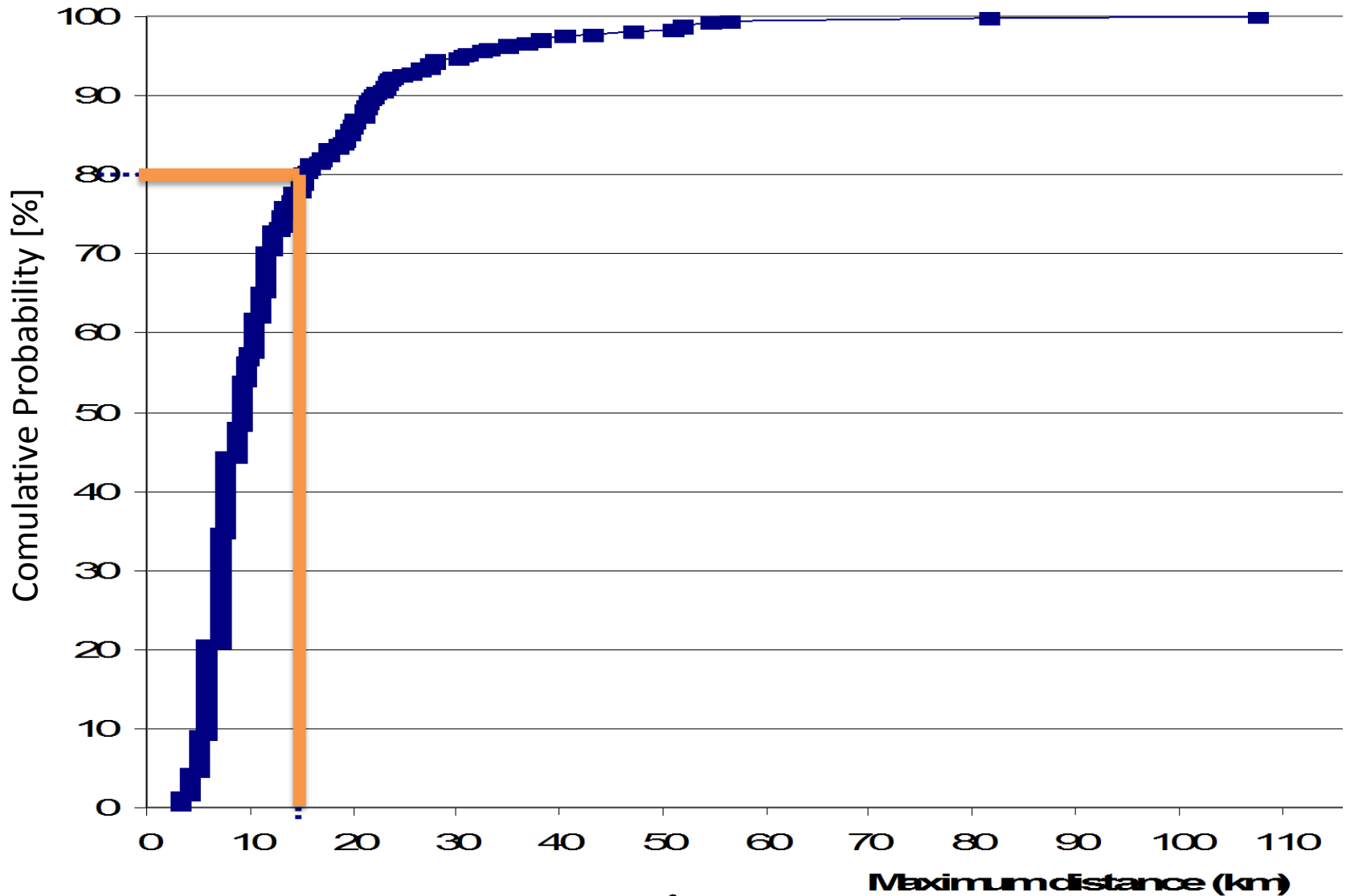
Massive numerical effort

- Three release-categories
- Three NPP-sites
- Using real weather for EVERY day in a typical year (2012)

-> Several thousand simulations by BFS



Scenario calculations as basis for EPZ



Reasonable Planning Zones



As recommended by the German Commission on Radiological Protection:

Evacuation < 6h	5 km
Evacuation < 24h	20 km
Sheltering	100 km
ITB	100 km
ITB (children and pregnant women)	Entire Territory

Decision Making (now)

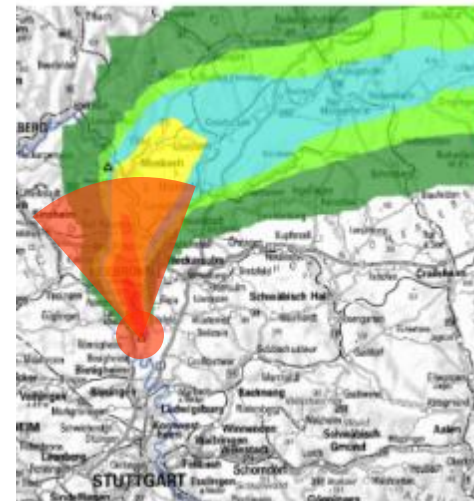
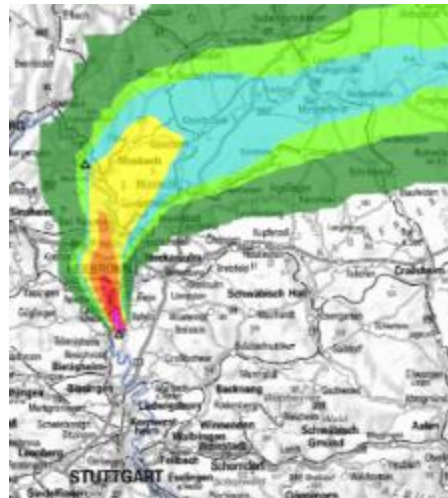
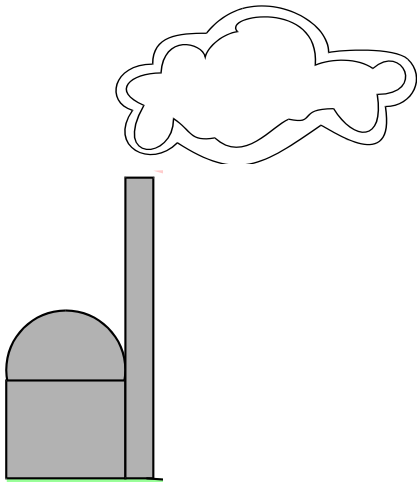
Source term assessment



Dispersion modelling



If IL exceeded:
protective actions



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Decision support tools

- Life is easier with decision support tools
- Basis for robust decisions → robust basis?
 - Source term and its temporal behaviour are vague
 - Meteorology might be erroneous or unavailable
 - How fail-proof is the underlying infrastructure?
- Need a backup solution



Fall Back Option: NERDA

- **Nuclear Emergency Response Decision Approach**
- Simplified event classification based on fuel and containment status
 - Simplified Meteo-Classification
- Robust decisions with minimum input

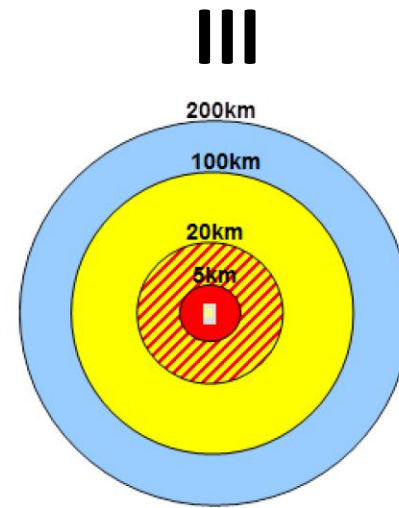
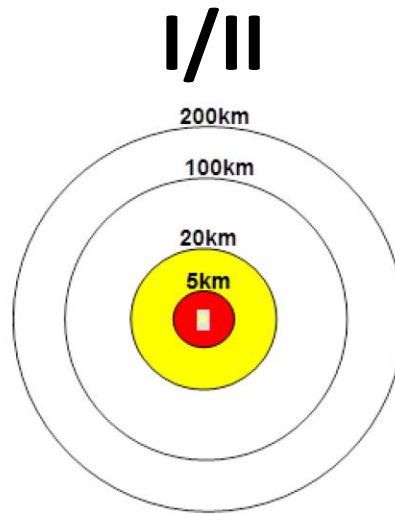


NERDA

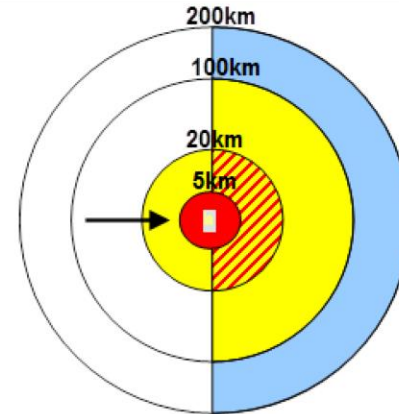
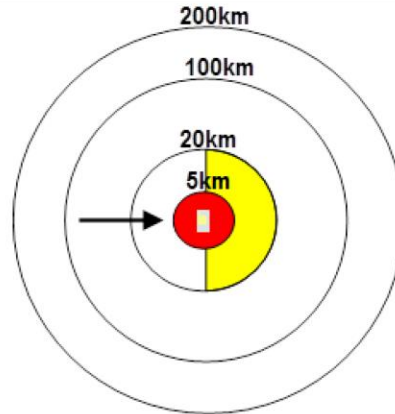
- Simple event classification:
 - I. filtered venting
 - II. unfiltered venting
 - III. venting not feasible
- Simple meteo classification:
 - a. no information or unstable or weak winds
 - b. stable wind direction
 - c. dispersion calculation available



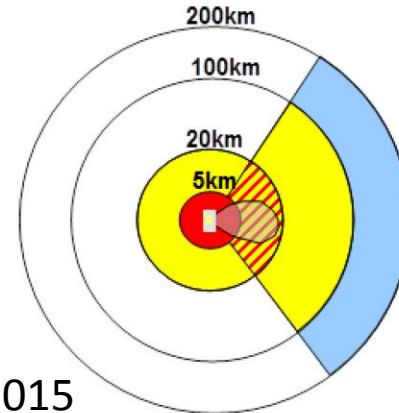
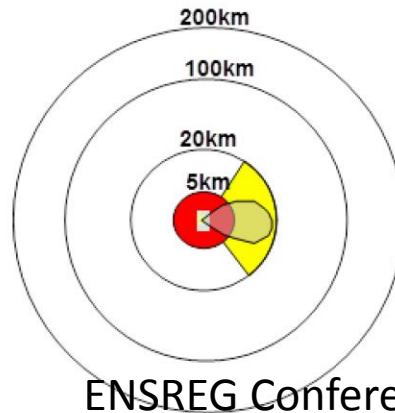
a. wind unstable



b. stable winds



c. dispersion calculator available



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NERDA



AtHLET
(HERCA-WENRA Ad hoc High-Level Task Force on Emergencies)

Position Paper



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AtHLET Approach

- Preparedness:
 - Evacuation up to 5 km
 - Sheltering + ITB up to 20 km
- General Strategy:
 - Evacuation up to 20 km
 - Sheltering + ITB up to 100 km
- Differences AtHLET - NERDA:
 - „General Strategy“ vs. „Planning“
 - Range of ITB for children and pregnant women

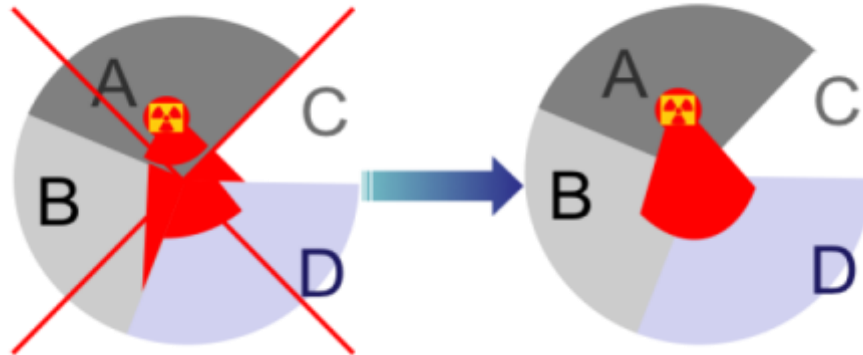


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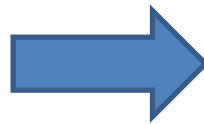


Implementation in Germany



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Event in Germany



16 Länder
+ Federation

17 Situation Reports?



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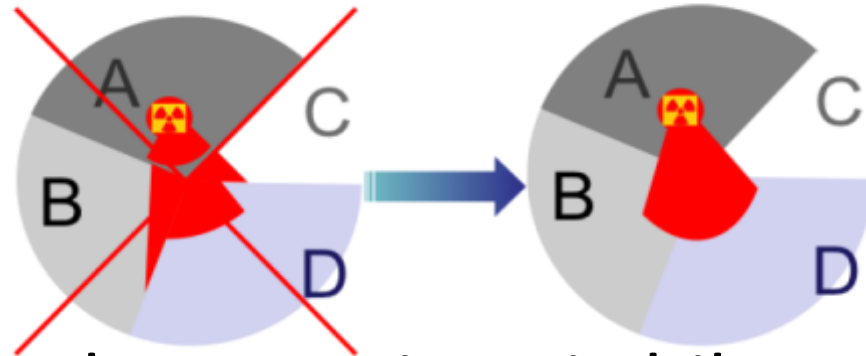
Unique Situation Report

- High Level Working group of Federation and Länder
- First meeting last Tuesday (23.06.2015)
- Consensus on need of a *unique* situation report



And what about HERCA-WENRA?

- Only the *Einheitliches radiologisches Lagebild* makes the HERCA-WENRA-approach doable



- Further implementation via bilateral arrangement



Thank you very much.



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