Emergency Preparedness in Germany in Perspective of Transboundary Issues

Matthias Zähringer

Head of Department Emergency Management

Federal Office for Radiation Protection

Germany

Table Ronde Aarhus Convention and Nuclear

"Préparation et réponse aux situations accidentelles et post-accidentelles nucléaires (EP&R)«

29-30 Novembre 2016,

Luxembourg

Situation in Germany

- **Nuclear Energy Phase Out Accelerated as a political consequence of Fukushima Dai-ichi Accident**
- **No more operating power reactors in 2022, leaving foreign NPP accidents and non NPP scenarios remaining risk**
- **High public concern about radiactivity and ionising radiation in general**
- **Implementation of the EU BSS initiated a complete refurbishment of Emergency Management**
  - **Scenario based planning**
  - **Augmented planing zones**

EP&R Fundamentals in Germany

- New Federal LAW (Strahlenschutzgesetz)
- Generic Reference Level at 100mSv with an option to optimize between 20 and 100 mSv
- Transition to existing exposure at 20mSv with an option to further reduce reference level between 1mSv and 20mSv
- Intervention levels unchanged

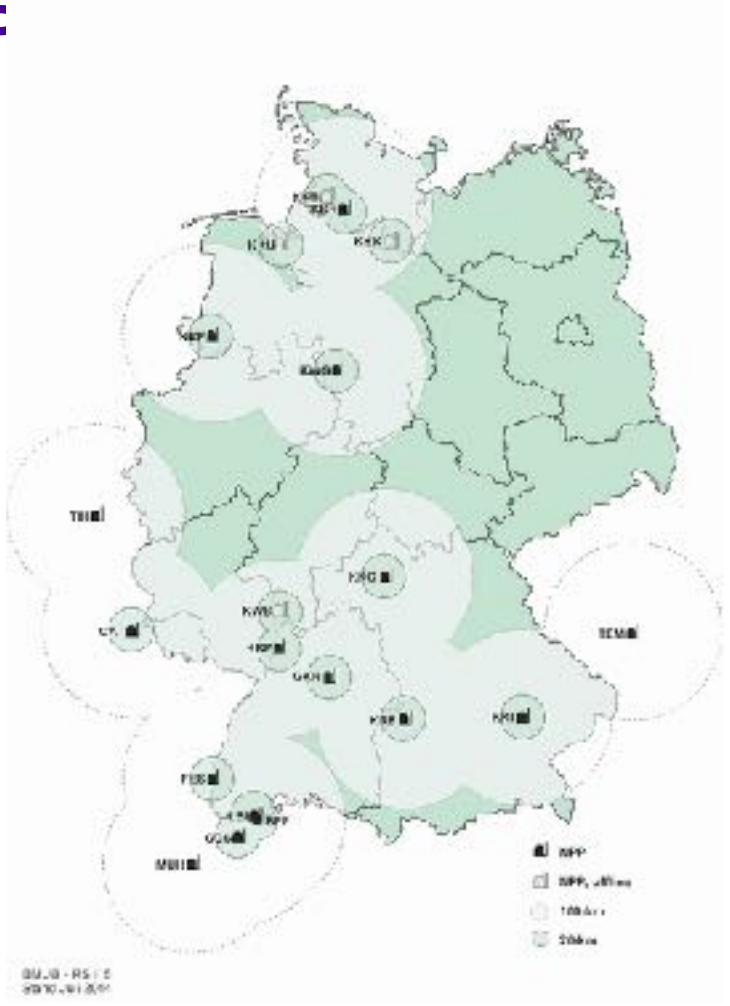
Basis for decisions on countermeasures: Intervention levels

Counter-measure	Reference Levels		
	Dose to thyroid	Effective Dose	Exposure Pathways and Time of Integration
Sheltering		10 mSv	Sum of external dose rate und inhalation dose integrated over 7 days
Intake of Iodine tablets	50 mSv Children until 18 years, pregnant woman, 250 mSv adults		Equivalent dose to inhalation of radioiodine inhaled within 7 days
Evacuation		100 mSv	External dose integrated over 7 days

NPP emergency planning zones

Zone	Countermeasure	Old radius for NPP	New radius for NPP
Central Zone	Evacuation within 6h *)	2km	5km
Middle Zone	Evacuation within 24h *)	10km	20km
Outer Zone	Iodine Blocking (all < 45y) Sheltering	25km	100km
Remaining national territory	Iodine Blocking for Children <18y and Pregnant Women		
	*) sheltering and ITB also apply		

100km planning zones for foreign (and domestic) NF

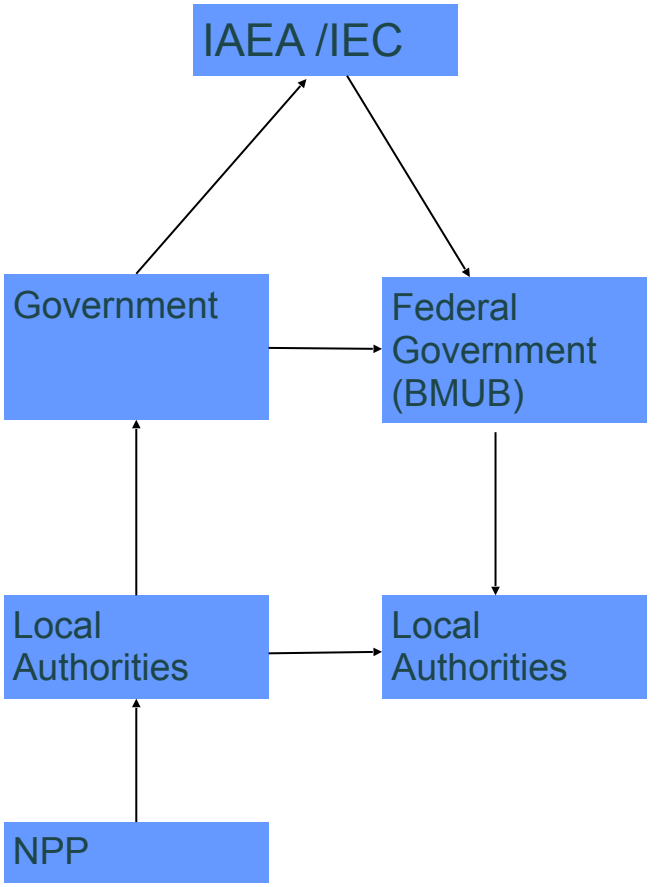


Forgeign NPPs within planning zones	
Evacuation Sheltering ITB	Fessenheim (F) Leibstadt (CH) Betznau (CH) Gösgen (CH) Cattenom (F)
Only ITB and Sheltering	Tihange (B) Temelin (CZ) Mühleberg (CH)

Bilateral commissions

— **Regular contacts, consultations and information exchage are subject of bilateral commissions between Germany and**

- **Switzerland (Leibstand, Betznau, Gösgen)**
- **France (Fessenheim, Cattenom)**
- **Czech Republic (Temelin)**
- **The Netherlands (Lingen)**



Recent developments with Tihange

- Public concern in the region of Aachen
- BoKu/ISR-Report recently issued assuming 30% release of iodine and cesium
- In absence of validated plant specific source term estimates, BfS is not in a position to calculate realistic scenarios for German territory

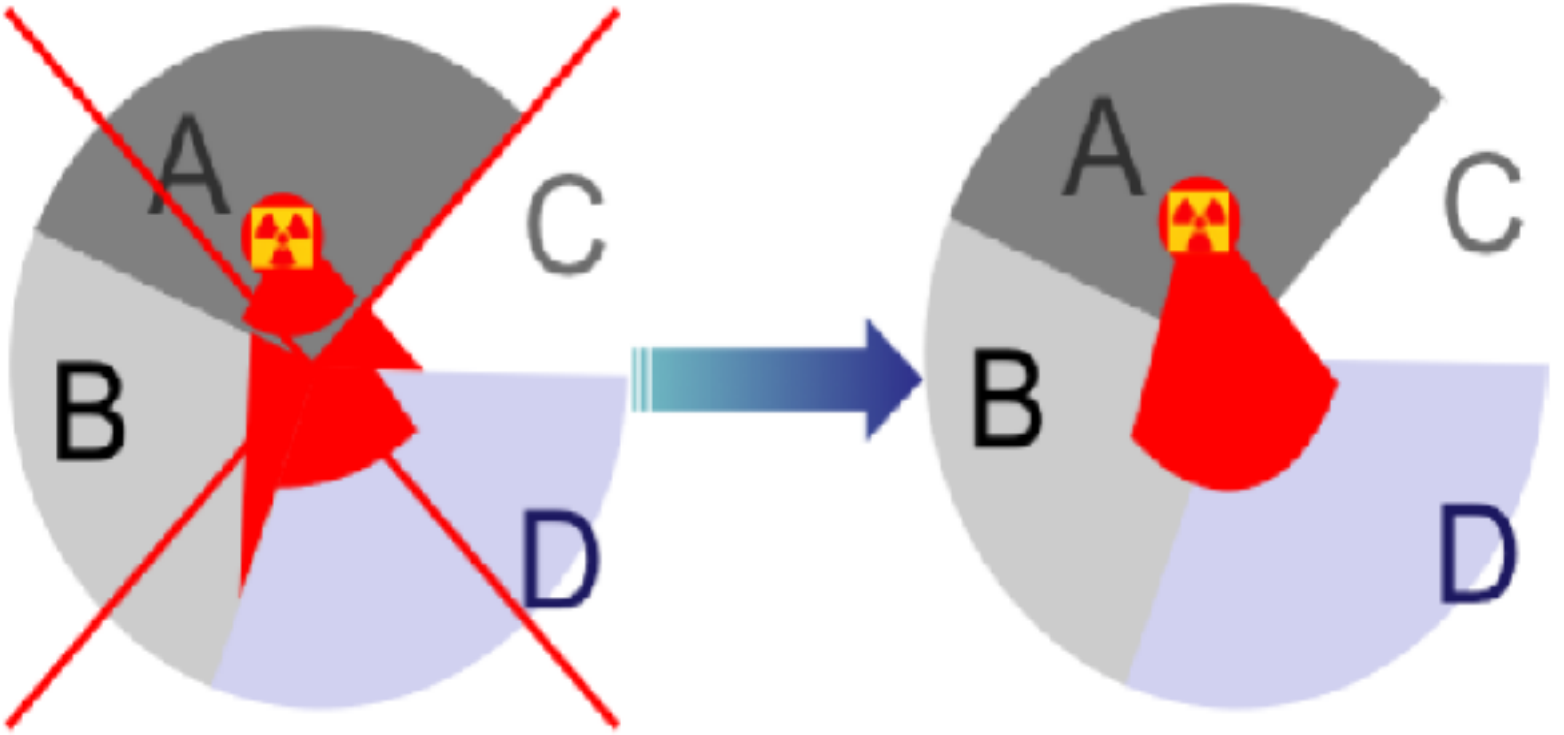
My conclusion:

If you don't proactively do public information, others will do your job – and maybe not better.

Transparency helps fostering trust and confidence (before an accident) which is vital for emergency response (during and after an accident)

HERCA/WENRA Aproach

We do what our neighbours do!



Conclusions

- Germany phasing out nuclear energy, last shutdown in 2022
- High public concern on radioation risk from neighbouring NPPs
- Transborder data exchange and transparency essential for EP&R
- HERCA/WENRA aproach to be considered for near border NPPs