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environment, transport, energy and communications ETEC

Federal Office for the Environment FOEN
Hazard Prevention Division

UNECE Convention on the Transboundary Effects of Industrial Accidents

Joint seminar on land use planning around hazardous industrial sites

Basic Principles of Major Accident Prevention

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Major Accident

Any sudden, unplanned event (e. g. **fire, explosion, release of toxic gases or liquids**) resulting from an uncontrolled development in the course of any activity **involving hazardous substances** either:

- in an installation, for example during manufacture, use, storage, handling, or disposal; or
- during transportation (by rail, road, pipelines)

that causes or is liable to cause serious harm to health, the environment or property.

Hazardous substance

A substance or preparation which, by virtue of its chemical, physical or (eco)toxicological properties, has the potential of causing undesirable consequences.

Hazardous substances also include substances not normally considered hazardous but which, under specific circumstances (e.g., fire, runaway reactions), react with other substances or operating conditions (temperature, pressure) to generate hazardous substances.

Major Accident Prevention: a task for many stakeholders

Major accident prevention is a responsibility shared by **many stakeholders**, i. e. any individual, group or organisation that is involved, interested in, or potentially affected by chemical accident prevention, preparedness and response:

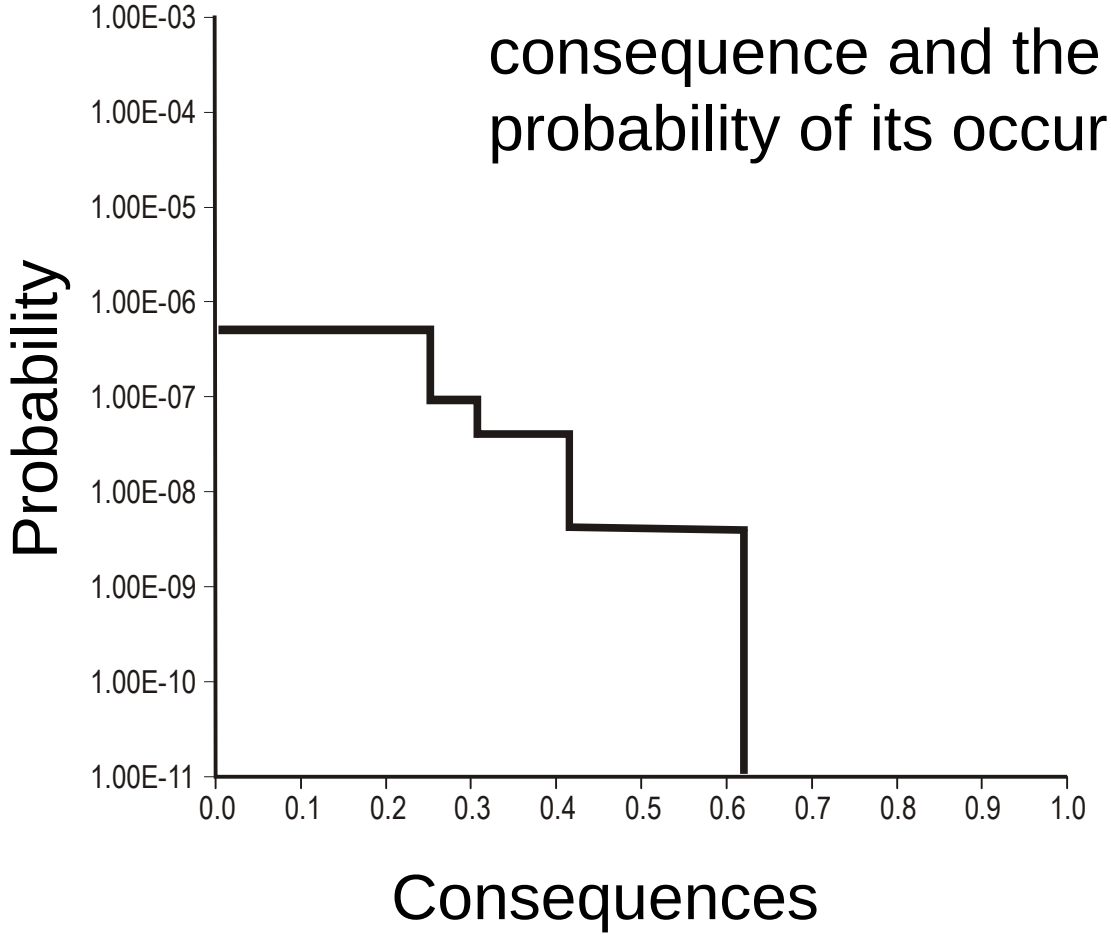
- industry/management of hazardous installations,
- employees of such installations,
- public authorities (safety/prevention) at all levels,
- other public authorities (LUP, economic development, …) at all levels,
- members of the community/public

General principles (all stakeholders)

- Make accident prevention, as well as effective emergency preparedness and response, **priorities** in order to protect health, the environment and property
- **Communicate** and **co-operate** with other stakeholders on all aspects of accident prevention, preparedness and response
- **Know** the **hazards** and **risks** at installations where there are hazardous substances

Risk

risk = the combination of a consequence and the probability of its occurrence



General principles (industry)

- Establish safety management systems and monitor/review their implementation
- Utilise “inherently safer technology” principles in designing and operating hazardous installations
- Prepare for any accidents that might occur
- Assist others to carry out their respective roles and responsibilities

General principles (public authorities)

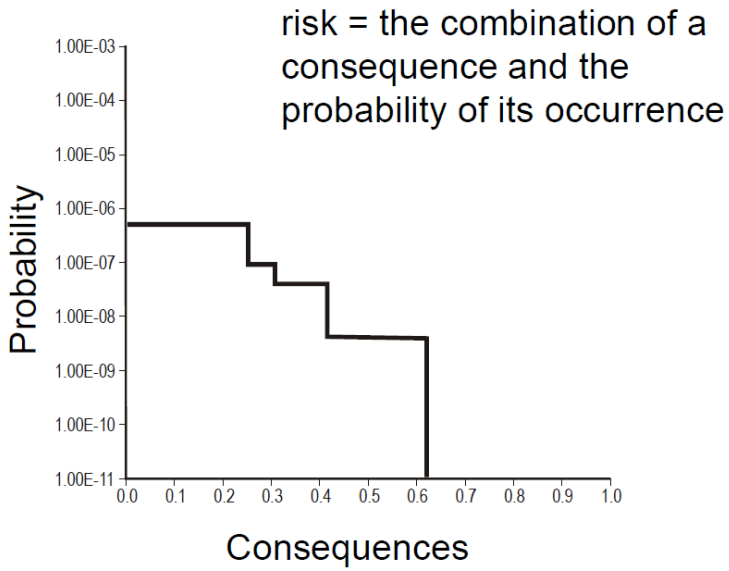
- Develop, enforce and continuously improve policies, regulations, and practices
- Provide leadership to motivate all stakeholders to fulfil their roles and responsibilities
- Monitor the industry to help ensure that risks are properly addressed
- Help ensure that there is effective communication and co-operation among stakeholders
- Mitigate the effects of accidents through appropriate response measures
- Establish appropriate and coherent land-use planning policies and arrangements

Questions for application in a concrete case (operator and public safety authorities)

- Is it the right location for the hazardous installation (esp. for a projected installation) ?
- What are/can be the hazards on site ? Is it possible to reduce these hazards ?
- What can happen on site ? Which accident scenarios are possible ?
- What would the consequences for the population, the environment and the property on- and off-site be ?
- Which safety measures could prevent these accident scenarios from occurring ?

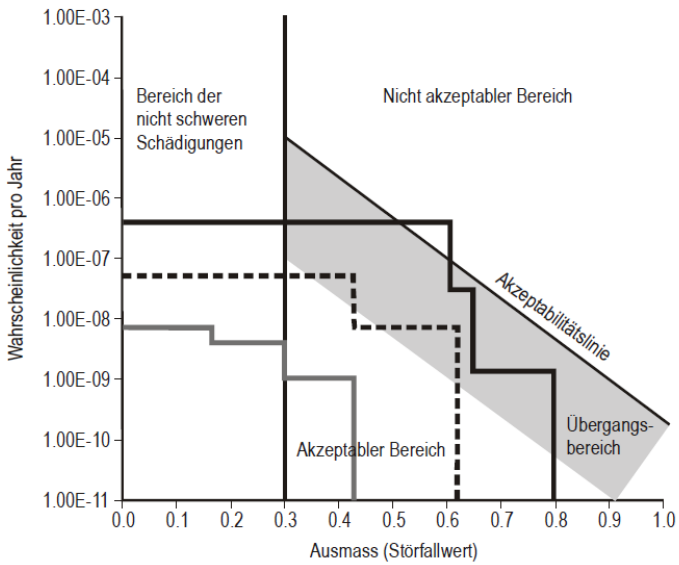
Questions for application in a concrete case (operator/public safety authorities)

- What is the likelihood/probability of the different accident scenarios and their outcomes ?
- Which additional safety measures could reduce these probabilities
- What is the remaining risk ?



Questions for application in a concrete case (operator/public safety authorities)

- Is the risk acceptable ?

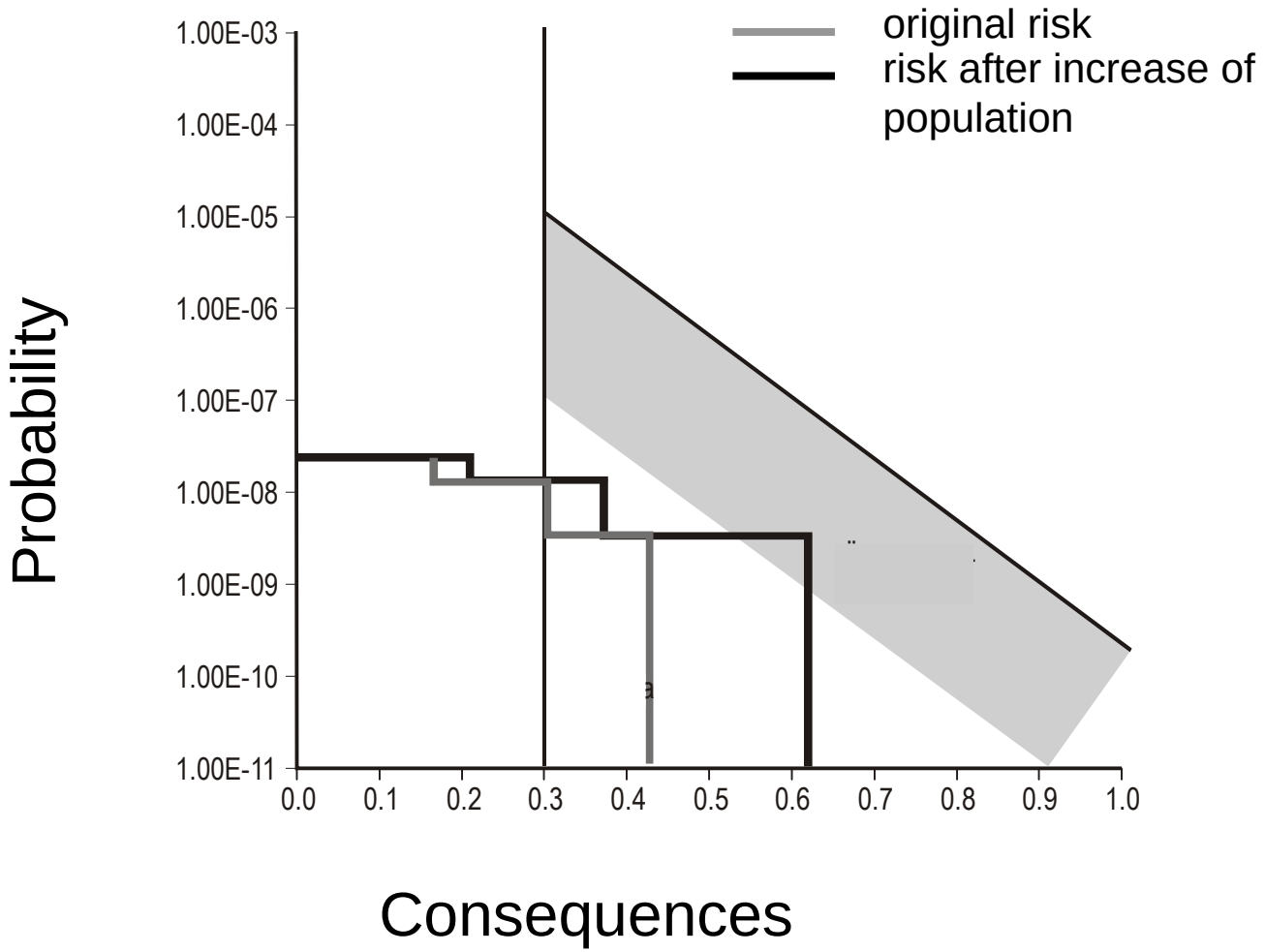


- What if not ?

Questions for application in a concrete case (operator/public safety authorities)

- What is the influence of an of an increase of population on the risk ?

Influence of an increase of population on risk



Questions for application in a concrete case (all stakeholders)

- What do we do ?
- Decide according to the general principle:
- **Communicate** and **co-operate** with other stakeholders on all aspects of accident prevention, preparedness and response