

*Training on identification of  
hazardous activities  
22- 23 November 2011, Bishkek*

**Location criteria  
for activities involving substances that  
may be released into water path and air  
path in case of accidents**



# Convention on the transboundary effects of industrial accidents

## Identification of hazardous activities

### Article 4. paragraph 1 of the Convention


The Party of origin shall take measures to identify hazardous activities within its jurisdiction.

According to the definitions of the Convention:

**"Hazardous activities"** are activities capable of causing transboundary effects that involve the manufacture, use, storage, handling or disposal of hazardous substances in quantities above the threshold limits laid down in Annex I to the Convention.

**"Effects"** – any direct or indirect, immediate or delayed adverse consequences caused by an industrial accident on, inter alia, human beings, flora and fauna, soil, water, air and landscape, material assets and cultural heritage.

**"Transboundary effects "** - serious effects within the jurisdiction of a Party as a result of an industrial accident occurring within the jurisdiction of another Party.



# Guidelines to facilitate the identification of hazardous activities for the purposes of the Industrial Accidents Convention

Guidelines refer on:

1. Facilitating the implementation of Annex I →  
Substance and quantity criteria
2. Defining the location criteria

# Substance and quantity criteria

One or more hazardous substances are present or may be present in quantities at or in excess of the threshold quantities listed in Annex I to the Convention

## Annex I

- List of hazardous substances and preparations with thresholds, for the purposes of defining hazardous activities
- Listed quantities relate to each activity or group of activities
- Take into consideration activities where the hazardous substances are present in a quantities less then qualifying, if the transboundary effects could be expected (depending on risk assessment)

*\* According to Council Decision 98/685/EC of 23 March 1998, for EU member States all establishments covered by article 9 of Council Directive 96/82/EC of 9 December 1996 (Seveso II), i.e. upper-tier establishments, are taken to meet these criteria.*

# Location criteria

**In which locations should we look for hazardous activities ?**

Two location criteria:

- 1) Within 15 kilometres from the border for activities involving substances that may cause:
  - fire or
  - explosion or
  - release of toxic substances into the air in the case of an accident

# Location criteria

## In which locations should we look for hazardous activities ?

- 2) Along or within **catchment areas** of transboundary and border rivers, transboundary or international lakes, or within the catchment areas of transboundary groundwaters for activities involving:
- **Toxic** substances (category 4 of part I of Annex I)
  - **Very toxic** substances (category 5 of part I of Annex I)
  - **Oxidizing** substances (category 6 of part I of Annex I) and
  - **Substances dangerous for the environment** (category 8 of part I of Annex I) that may be released **into watercourses** in the event of an accident causing transboundary effects (path from activity to water course).

# Catchments areas in Republic of Serbia

Дунав  
Сава  
Колубара  
Дрина  
В.Морава  
Ј.Морава  
З.Морава  
Тимок  
Бели Дрим  
Егеј



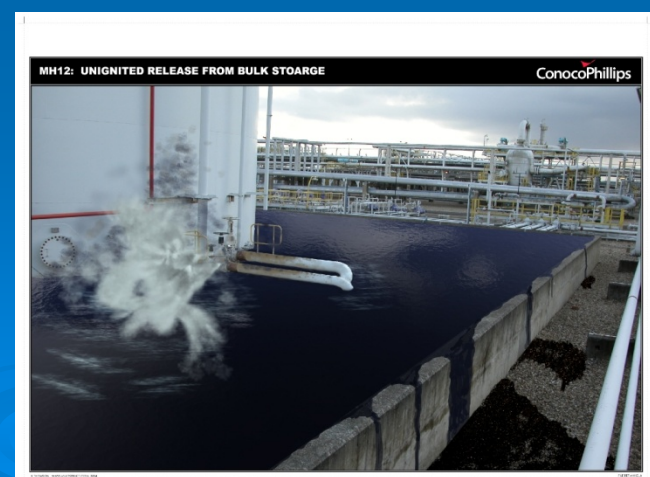
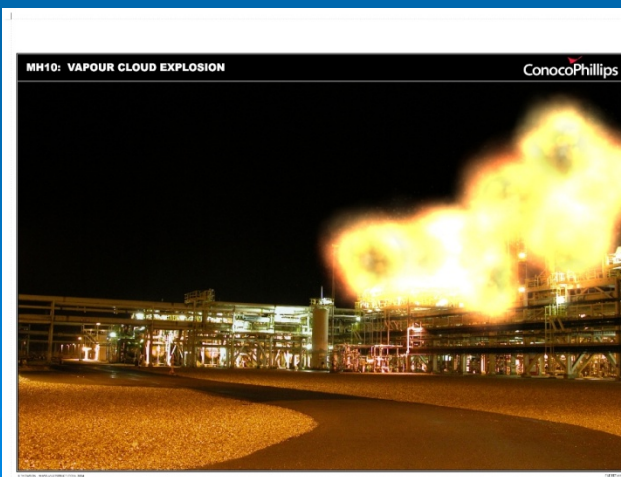
*Catchment area of a transboundary river or lake: the whole drainage area of this river or lake with a common outlet.*

# Principles for using location criteria

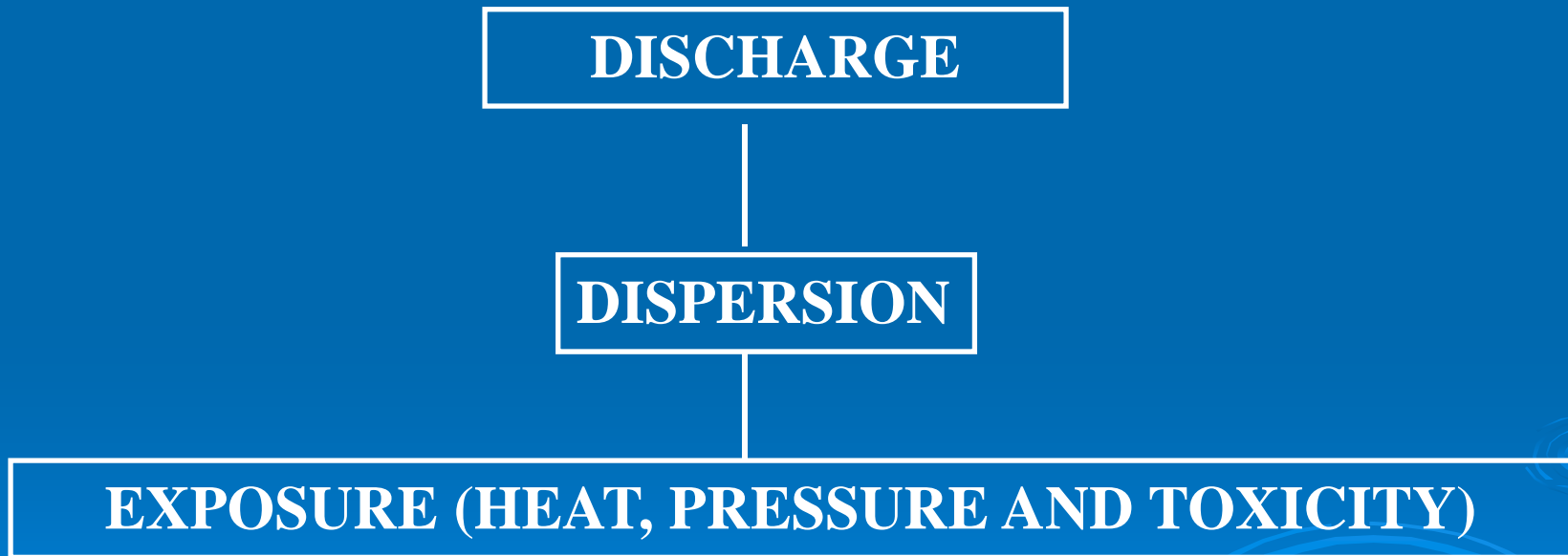


Which scenarios are relevant for identification in the scope of first location criteria (air path)?

- Fire (thermal exposal)
- Explosion (thermal and pressure exposal)
- Releasing of toxic substances into the air



# Relevant scenario



# FIRE scenario: example natural gas

## Risk of heat

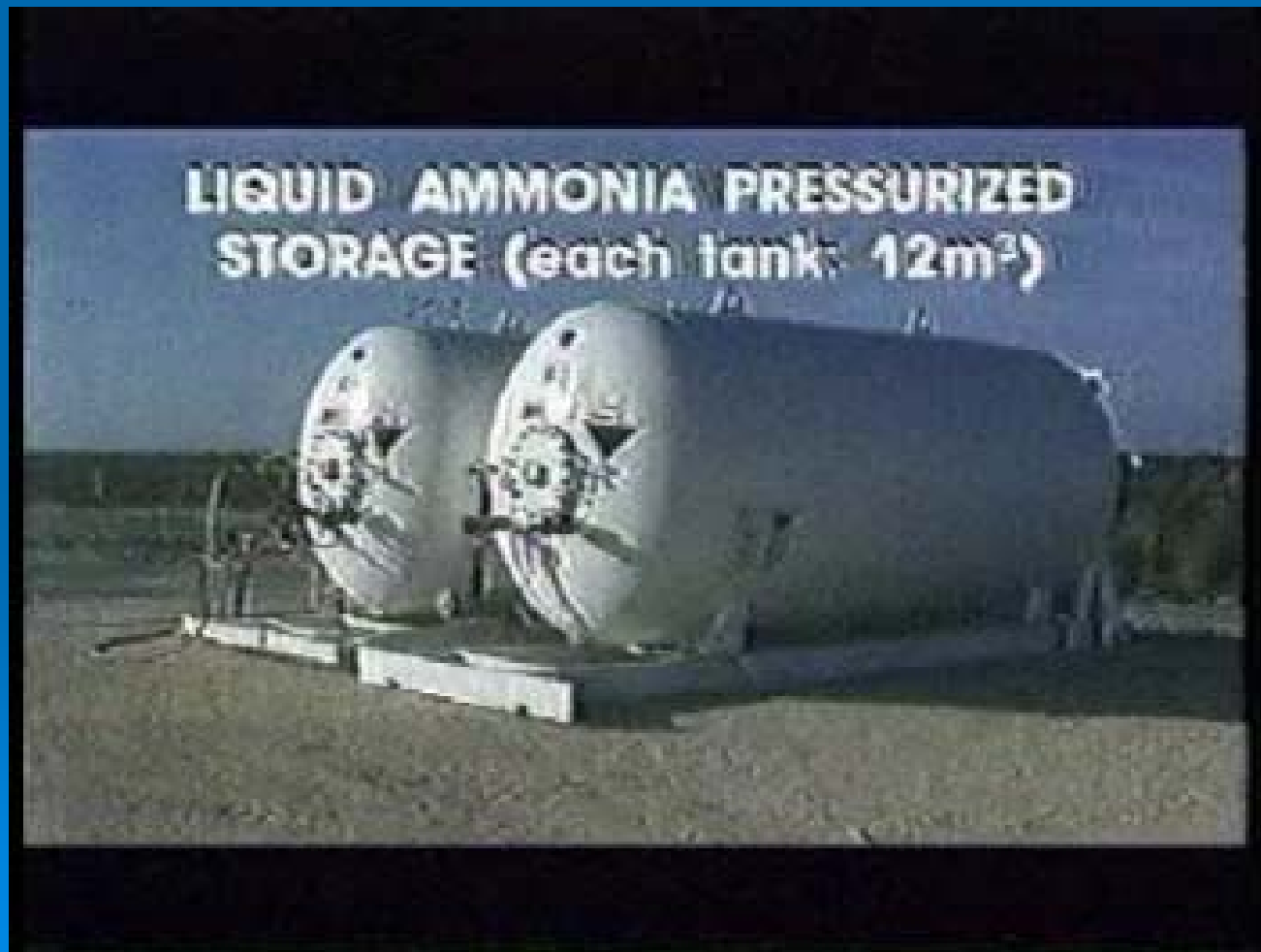


# EXPLOSION scenario: example LPG

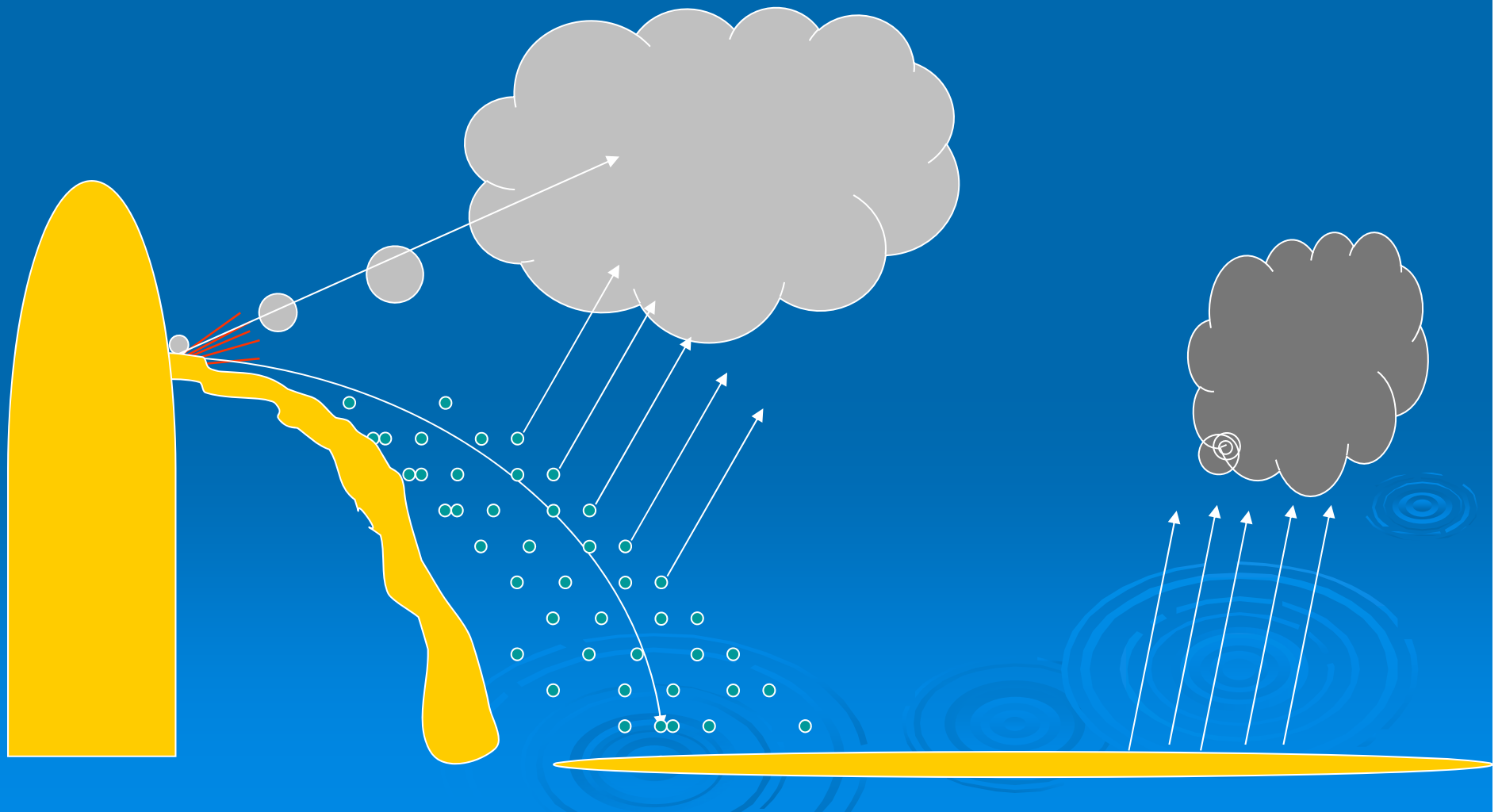
## Risk of heat and pressure



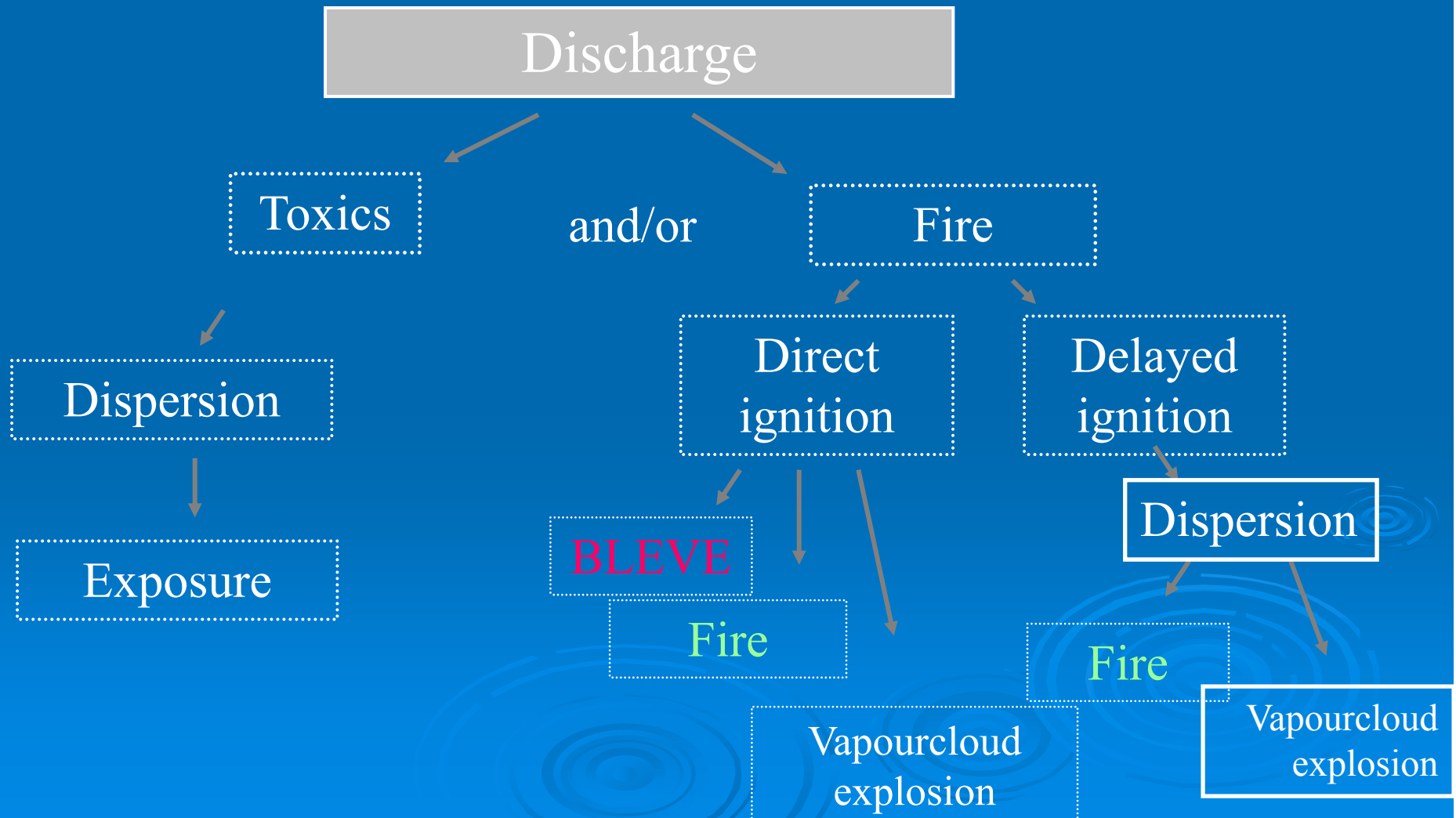
# TOXIC scenario: example ammonia



# Example of possible ways of releasing a toxic substances

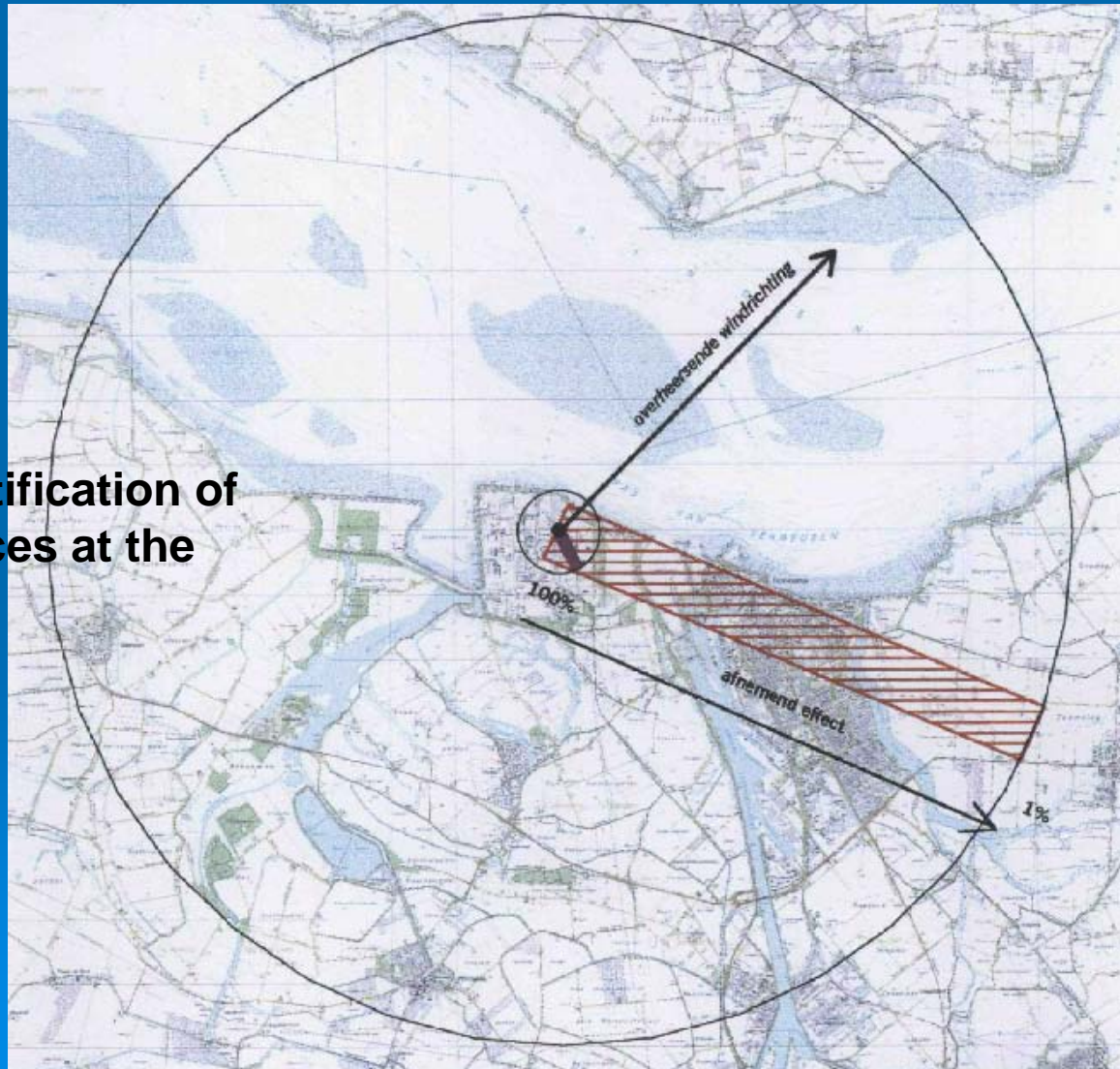


# Accidents scenarios in a diagram



# Applying location criteria on a map

Consequences  
Modeling  
Maps with identification of  
damage distances at the  
territory



## Identification of hazardous activities in the scope of second location criteria

Party of origin should decide if some activity can cause transboundary effect in the case of releasing the hazardous substance into the water path in the case of an accident

- Evaluation – in consultation with joint bodies, based on simple criteria, including existing warning and alarm systems and distance from location of hazardous activity to the border
- Risk assessment, if needed

- The Joint ad hoc expert group on water and industrial accidents recommended that distance between the location of the hazardous activity and the border should correspond to approximately a flowing period of two days of average flow velocity.




The distance is made up of three components:

- path from the hazardous activity to a water course
- path from the water course to an international/  
transboundary water course
- path from the international/transboundary water  
course to the border



## Path from hazardous activity to water course


- Look at **the way** substances could enter the water path **in a “worst case”**
  - directly, i. e. flowing at the surface or into groundwater
  - indirectly, e. g. via drainage system
- Look at **the quantity** of substances that could enter the water path **in a “worst case”**
- To look adequately at these elements you should have in mind a **few possible scenarios**
- For this purpose you should have enough **knowledge about hazardous activity**

- Unsafe retention systems – should not be taken into consideration
  
  - On the basis of these remarks:
    - Estimate the time between release and entry into water
    - Estimate whether relevant for the Convention and document gained data for later consultations
- 

## Path from the water course to an international/transboundary water course

- Look at the **distance** between the water course and international/transboundary water course
- Look at the **natural retentions** between the water course and international/transboundary water course
- Look at the **existing national river warning and alarm systems and contingency plans to be activated**
- Estimate the **time** between entry the hazardous substance into water course and entry into international/transboundary water course

# Path from the international/transboundary water course to the border

- Look at the **distance** between international/transboundary water course and the border
  - Look at the **existing international river warning and alarm systems and contingency plans** to be activated
  - **Estimate the time** between entry the pollution into international/transboundary water course and reach the border
  - **Estimate the total time** between accident and effects at the border
  - **Look at the possible effects**
- 

# Summary

- **Identification of the hazardous activities under the Convention**
- **Look at:**
  - activities meeting the **substance/quantity criteria** (Annex I)
  - **catchments areas**
  - **the possibilities** of industrial accidents
  - **the distances, the natural retentions**, etc.
- For applying location criteria - **use of modeling tools** in assessing the movement of the pollution
- **Estimate the time and possible effects**
- **Consult** concerned Parties, adequate bodies
- **Improve** your identification on the basis of the consultation

Please note

**You have complied with your obligation only  
after you have**

**NOTIFIED THE CONCERNED PARTIES !**

