Identification of Hazardous Activities with transboundary impact – location criteria
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.

Guidelines to facilitate the identification of hazardous activities for the purposes of the Convention (Guidelines for Location Criteria) (decision 2000/3 in ECE/CP.TEIA/2, annex IV)
Location Criteria

In which locations should we look for hazardous activities?

Air path:
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

Water path:
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).
Principles for using location criteria – air path

- Which scenarios are relevant for identification in the scope of first location criteria (air path)?
  - Fire (thermal exposure)
  - Explosion (thermal and pressure exposure)
  - Releasing of toxic substances into the air
Relevant scenario

DISCHARGE

DISPERSION

EXPOSURE (HEAT, PRESSURE AND TOXICITY)
FIRE scenario: example natural gas
Thermal radiation
EXPLOSION scenario: example
LPG
Thermal radiation and
overpressure
TOXIC scenario: health effects
Accidents scenarios in a diagram

Discharge

- **Toxics**
- **Fire**

  - **Dispersion**
  - **Exposure**

  - **Direct ignition**
  - **Delayed ignition**

    - **BLEVE**
    - **Fire**

      - **Vapour cloud explosion**

    - **Dispersion**
      - **Fire**
      - **Vapour cloud explosion**
Applying location criteria on a map

- Consequences Modeling
- Maps with identification of damage distances at the territory
Identification of hazardous activities – water path

• 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 the 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.
Identification of hazardous activities – water path

• 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 watercourse to the border
Identification of hazardous activities – water path

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
Identification of hazardous activities – water path

On the basis of these assumptions:

• Estimate the time between release and entry into water
• Estimate whether relevant for the Convention and document gained data for later consultations
Identification of hazardous activities – water path

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
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**
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!
Thank you for your attention!

Nikolay Savov
Assistance Programme Manager
Convention on Transboundary Effects of Industrial Accidents
UNECE, Geneva
Tel: +41 22 917 1980
email: nikolay.savov@unece.org