

Identifying effects and “worst-case scenario” case study

Giorgio Mattiello

**Italian Ministry for the Environment, Land and Sea
Expert**



UN-ECE Convention on the Transboundary Effects of Industrial Accidents
Tashkent – 5-6 December, 2011

Transboundary effects are regional effects

- The relevant articles do not intend to regulate global and trans-European environmental effects such as global warming and acidification.
 - **Only environmental effects which have a regional impact, like air quality and surface water pollution can be considered to be transboundary effects.**
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The “effects”

Convention – Art.2: industrial accidents capable of causing transboundary **effects**,

Convention – Art.1: “Effects” means any **direct or indirect, immediate or delayed adverse consequences** caused by an industrial accident

A decision has to be made how big an increase of air or water pollution is considered significant enough to be considered to have “effects”.

Location criteria (I)

Within **15 kilometres from the border**, for activities involving substances that may cause a fire or explosion or involving toxic substances that may be released into the air in the event of an accident.

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 substances that fall under category 3, 4, 5 or 8 of Part I of Annex I to the Convention....

Location criteria (water)

Whether or not such an activity is capable of **causing a transboundary effect** in such an event should be decided by the **competent authority of the Party of origin**, preferably in consultation with **joint bodies**. The decision should depend, among other things, on the existence of **river warning and alarm systems** and the **distance** between the location of the hazardous activity and the border.

Location criteria (water)

A **catchment area** of a transboundary river or lake is defined as the whole drainage area of this river or lake with a common outlet

Joint body means any bilateral or multilateral commission or other appropriate institutional arrangements for cooperation between Riparian Parties

The joint ad hoc expert group on water and industrial accidents recommended that this **distance** should correspond to approximately a **flowing period of two days of average flow velocity**

Methodology for determining the presence of transboundary effects

A good assessment of the possible environmental effects is required. A methodology for assessing transboundary effects should consist of the use of dispersion models as a test of environmental significance. Based on the data gathered from the assessment, the question whether the activity has transboundary effects can be answered quite easily.

Dispersion models

- **Dispersion of pollutants in surface water can be quite easily calculated.**
 - **The calculation of dispersion of pollutants into the air is a different matter.**
 - **In recent years several high-quality dispersion models of air pollution have been developed.**
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Using worst case scenarios Case Study

Background information

- **Chemical plant**

 - 50 tonnes of chlorine**

 - **2 tanks x 15 tonnes**

 - **1 production line containing ~20 tonnes**

- **2 km from the border**

Questions

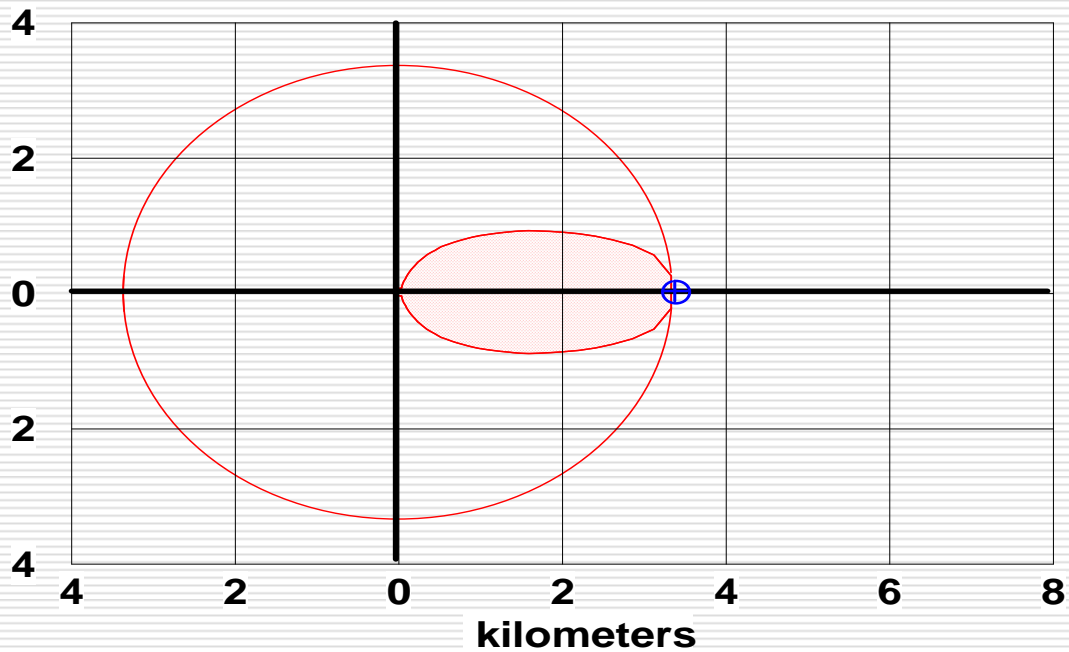
- What do you consider **worst case scenario**
 - low probability-high consequences outcomes with the maximum negative consequences
 - What is the quantity of the chemical involved
 - Do you consider it definitely incapable of transboundary accident
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Modeling results

- Standard distances table ~ 1200 m**
 - RMP*Comp – over 5 km**
 - ALOHA – 3,3 km**
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ALOHA modelling

kilometers



Developing worst case scenario

Select a scenario

- release of the largest amount in a single largest vessel – 20 tonnes of chlorine
- Consider short release (10 ~ 15 mins)

Determine the distance to the endpoint

- Using standard distances table
- Using modelling software
 - ALOHA
 - RMP Comp

Determine transboundary potential

- 2 km from the border
- Consequences across the border cannot be excluded

The establishment is a hazardous activity

Article 4

IDENTIFICATION, CONSULTATION AND ADVICE

3. The Parties shall, with respect to proposed or existing hazardous activities, apply the procedures set out in **Annex III** hereto.
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Communication between States

- **The communication between the Country and its neighbouring Countries should take place as early as possible.**
 - **It is preferable to have discussions on an informal level before the official notification to the neighbouring Country of transboundary environmental effects is given.**
 - **MoEm will arrange with the Ministry of Foreign Affairs for contacts to be made with the affected Member State(s).**
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Thank you for your attention

g.mattiello@vegapark.ve.it
