Land use planning decisions influenced by safety concerns

“application of the Hungarian LUP system – practical ways and possibilities”

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Content of the presentation

✓ Demonstrating the application of the national LUP system
  (through a case study)

✓ Overviewing the benefits and possible disadvantages of the current system
  (through 4 other short examples)

✓ Summarizing the further possible ways for improvement
Quantitative Risk Analysis

Obligatory when siting a new upper or lower tier Seveso establishment

Acceptability of individual risk (fatal event/year) – residential areas

Not acceptable risk

Risk level reducing is required

Acceptable risk

Acceptability of societal risk (fatal event/year)

Residential areas, workplaces, shopping centres, schools, entertaining facilities, hospitals, main transport routes etc.
LUP around Seveso establishments

Main pillar: QRA

Land use planning – hazard zones (individual risk contours - injuries)

Calculated by
Regional Seveso Competent Authorities
(DNV PhastRisk v6.54 software)

The authority informs the mayor about the hazard zones and initiates to include the zones in the land-use plan.

The major takes into account the borders of the zones until the revision of the land-use plan.
New logistic storage place and offices next to a Seveso establishment

Technical content of the investment:

1. Side-tracks rebuilding
2. Container transfer station
3. Parking lot (for trucks and cars)
4. Office building
5. Expansion of the fuel unloading station

Historical background

Dec. 2015 – Consultation with the regional Seveso authority
Jan. 2016 – Application submitted to the authority and to the major
Jan. 2016 – The major initiated the convening of the Committee
Febr. 2016 – Committee meeting

What were the safety concerns?
Safety concerns at the particular case

Middle zone (E-6/year):
Outer zone (3E-7/year):
Borders of the development area:
The legal procedure

Meeting of the Committee

Committee standpoint

Public consultation
21 days, the development documentation is available to the public

Authorisation procedures
eg.: Seveso related permit of building the facilities

The activity of the Committee:

Members: major, delegates from the local government, authorities (environmental, public health, mining, water protection, disaster management (Seveso))

The investor/operator introduced the conceptual design, functions and organizational circumstances

Further Q&A (eg. human health hazards, potential exposure of the environment, increased noise and traffic density)

The Committee did not found any conceptual problem.

Standpoint:

Development is allowable
(This is only a preliminary, principles standpoint of the Committee, the authorities are not be bound by this standpoint when making their decisions in the further licensing procedures.)
## Classification of the development (disaster management aspects)

<table>
<thead>
<tr>
<th>Category of development</th>
<th>Inner zone</th>
<th>Middle zone</th>
<th>Outer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Housing, hotel, holiday accommodation</td>
<td>Advice against development</td>
<td>Specific individual conditions based on detailed impact assessment of societal risk of fatality are necessary for allowing development</td>
<td>Allow development</td>
</tr>
<tr>
<td>B. Workplaces, parking areas</td>
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<tr>
<td>D. Mass-residence facilities</td>
<td>Advice against development</td>
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<tr>
<td>E. Public domains, main thoroughfare</td>
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# Classification of the development (disaster management aspects)

<table>
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<tr>
<th>Category of development</th>
<th>Exclusions</th>
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</table>
| A. Housing, commercial, holiday accommodation | 1. Housing accommodation providing for less than 3 dwelling units or commercial accommodation providing for less than 10 people – treat both as category B.  
2. Housing accommodation specifically for the elderly and handicapped, sheltered housing – treat as category C.  
3. Accommodation 5 storeys or more in height – treat as category D. |
| B. Workplaces, parking areas                  | 1. Parking areas for more than 200 vehicles and having other associated facilities – treat as category C.  
2. Commercial or industrial development providing for 100 or more occupants or 3 or more in height; commercial or industrial development specifically for the handicapped – treat both as category C. |
| C. Retail outlets, small community facilities, leisure facilities | 1. Retail development with less than 250 m² gross floor space; community facilities and leisure centres with less than 100 m² gross floor space – treat both as category B.  
2. Developments with 5000 m² or more gross floor space – treat as category D.  
3. Open-air developments where there could be frequently 1000 or more persons present (e.g. market, sport stadium, etc.) – treat as category D. |

**Investor’s declaration:**

1. Parking place planned max. capacity: appr. 15 vehicle

2. Office building  
   300 m²  
   1 floor  
   appr. 15 people  
   no access by disabled persons

∑ The development is allowable.
Detailed QRA is a part of the further Seveso related licensing procedure.
Preliminary QRA – Societal risk curves

Detailed QRA is a part of the further Seveso related licensing procedure

Present condition:

Future condition:

Risk reduction measures not needed.
Benefits and …

- Preliminary consultation between the investor, the operator, the local government and the authorities
- Public is so early involved
- Safety concerns could be determined and changed at this early stage

Good examples

- Kindergarten vs. Pharmaceutical site
- Rafting path vs. Power plant
- Wellness hotel and spa vs. Tank farm
Challenges and ...

The approach enables us to maximize the usage of the territories around the Seveso establishment (to the edge of the acceptable risk)

This situation could be profitable for the operator (partner companies in the vicinity) and for the settlement (workplaces, tax incomes)

What about the future developments of the establishment? (changing market demands, extension of the capacity, new products and procedures etc.)

Compensation procedures?

a less good example

Dressmaker factory vs. Refinery

- Function changing in an old industrial building
- 300 new workers are present
- The Seveso operator only realized it during the regular revision of the safety report
- The recalculated societal risk was acceptable only with conditions
- The operator decided to pay the costs of further risk reduction
Summary and further ways for improvement

✓ The approach takes into account the safety concerns at the early stage involving all the affected parties.

✓ Provides more freedom by allowing effective uses of areas, however could lead to land use conflicts in the long-range future.

✓ Continuous awareness raising is necessary for affected parties, especially local governments, majors, operators.

✓ Future steps: general review of the regulation.

Main goals:
- Facilitate the effective enforcement
- Maintain the balance between operator’s development related interests, the effective and sustainable usage of land, and the safety aspects.
Thank you for your attendance!