

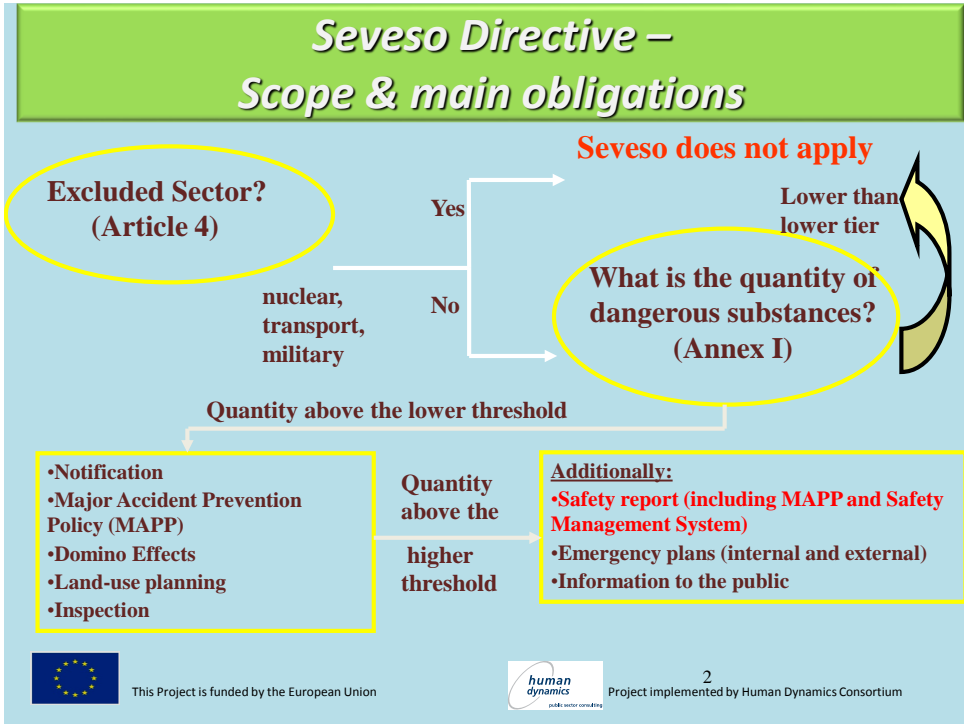
Specific Content *SAFETY REPORT*



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In Summary

Contents of Upper Tier **SAFETY REPORTS**

Minimum SEVESO requirements for a SR (Upper Tier)

1. **Description** of establishment and neighboring environment
2. **Dangerous Substances** (Quantities vs SEVESO Qualifying quantities)
3. **Hazard Analysis** (HA) : safety critical equipment/circuits
4. **Major Accident Scenarios** (Reference Scenarios), **Phenomena with consequences outside the establishment Worst Case Scenarios (WCSs)**
5. **Consequence Zones** (Z1, Z2, Z3)
6. **Risk Assessment RA** (Consequence based or QRA)
7. **Domino**
8. **Safety Management System** of the company as implemented in the establishment

Ref. G. PAPADAKIS - SEVESO SERBIA 24th June 2013



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Environment and Climate
Regional Accession Network **ECRAN**

Safety Report

Structure and development



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Structure of Safety Report

- **1.Introduction - Background**
- **2.Safety Management System**
 - **Major Accident (MA) Prevention Policy**
 - **MA Organisation**
 - **MA Planning**
 - **Risk Control Systems**
 - **Performance Measurement**
 - **Audit and Review**



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Structure of Safety Report (Continued)

- **3.Description of the Environment**
- **4.Description of the Installation**
 - **Principal Installations**
 - **Facilities for Limiting the Consequences of a Release**
 - **Unit Operations**
 - **Areas with Potential for MAH**
 - **Hazardous Materials on Site**



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Structure of Safety Report

- **5. Hazard Identification and Risk Assessment**
- **6. Measures of Prevention, Control and Intervention**
- **7. References**
- **Attachments - Basis of Safety, Site Plans, Meteorological Data, Inventory of Hazardous Materials, Extracts from Site Risk Assessments**



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Safety Report Hazards

Basis for Inclusion in Safety Report

- **Multiple types - fire, explosion, toxic gas release**
- **Highest risks**
- **Offsite impacts**
- **Environmental impact**
- **Demonstrate ALARP**



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Safety Report Hazards (Continued)

- **Dust Explosion**
- **Hydrogen Release - Fire & Explosion**
- **Toxic Gas Release**
- **Solvent Tank Farm Fire**
- **Environmental Release**



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Safety Report Development

- **Collaborative effort with CA**
 - **Worked through Employers Group**
 - **Worked with CA individually**
- **Biggest problem - getting direction on specifics, e.g. modelling end-points.**
- **CA learning also**



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Compliance - Interdependent Events

- **Carry out risk assessment**
- **Develop scenarios and carry out modelling**
- **Develop internal emergency plans**
- **Supply information for external emergency plans**
- **Inform Community**



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Compliance - Interdependent Events (Continued)

- **Submit Safety Report**
- **CA review and agree report**
- **Specified areas agreed, impact on**
 - **external emergency plans**
- **Carry out necessary modifications/
implement procedures, e.g. Siren**



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Discussions with CA

- **DEMONSTRATE acceptable risk**
- **Worst Possible vs Worst Credible**
- **Emergency Services need Worst Case**
- **Specified Distance vs Consultation Distance**
- **Dangerous Dose vs ERPG**
- **Little credit for good SMS**



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Discussions with CA (Continued)

- **Consider Escalation**
- **Use Quantified Risk Assessment (QRA) to demonstrate credible**
- **Address hierarchy of Elimination, Reduction, etc.**
- **Specified areas for rivers?**



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Discussions with CA (Continued)

- **Consider flooding/high water table**
- **Consider Heritage sites**
- **Containment rather than modelling for Environmental risks**
- **Appropriate data for modelling**



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Resources

- **Risk Assessment**
- **Consultant for 9 months**
- **Safety Engineer for 6 months**
- **Process Engineers for 10 weeks**
- **Safety Report**
- **Consultant for 6 months**
- **Safety Engineer for 4 months**
- **Staff for 1 month**



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References

**COUNCIL DIRECTIVE 96/82/EC
of 9 December 1996 on the control of major-accident hazards involving
dangerous substances**(OJ L 10, 14.1.1997, p. 13) – consolidated version

**DIRECTIVE 2012/18/EU OF THE EUROPEAN PARLIAMENT AND OF THE
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Planning for Emergencies Involving Dangerous Substances for Slovenia.

Final Report. Contract no: SL-0081.0011.01. 28 February 2012.

I.van der Putte: Regional Environment Accession Project (REAP).

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REC Hungary



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