

CHEMICAL ACCIDENT RISKS SEMINAR

**European Commission
Joint Research Centre (JRC)
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SESSION 2 : INTEGRITY OF INSTALLATIONS AND EQUIPMENT

NEED FOR RISKS REDUCTION FOR LPG AND AMMONIA STORAGE DEPOTS IN THE SLOVAK REPUBLIC

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NEED FOR RISKS REDUCTION FOR LPG AND AMMONIA STORAGE DEPOTS IN THE SLOVAK REPUBLIC



Why we need risks reduction ?

- because social risk due to their vicinity of the urban buildings
- because lots of LPG and Ammonia tanks are at their technical lifespan limit
- because most of the LPG and Ammonia operators do not have enough financial allocation for the new equipment
- because existing technologies are secured only by minimal number of technical barriers
- because we can not close them and we want that they improve their safety culture and adopt some measures to reduce and control identified risks.

NEED FOR RISKS REDUCTION FOR LPG AND AMMONIA STORAGE DEPOTS IN SLOVAK REPUBLIC

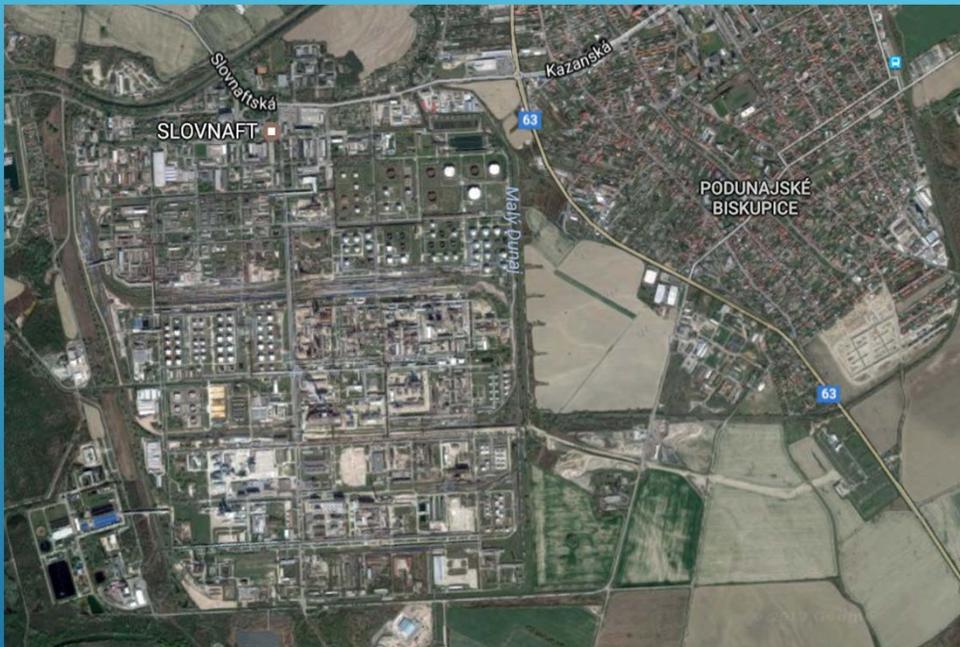
Why we need risks reduction on this field ?

SEVESO company (Slovak Republic)	GAS SEVESO company	AMMONIA SEVESO company	Percentage share SEVESO
79 (A and B type)	17 Industrial gases and LPG	5	21.5 % 6.3 %
46 B category	8 LPG (?? *)	5 B category	10 %



*In the Slovak Republic, 270 natural and legal persons has valid business permit according to Law No. 251/2012 Coll. on energy, for gases used for energy including LPG ???

NEED FOR RISKS REDUCTION FOR LARGE LPG STORAGE DEPOTS IN THE SLOVAK REPUBLIC



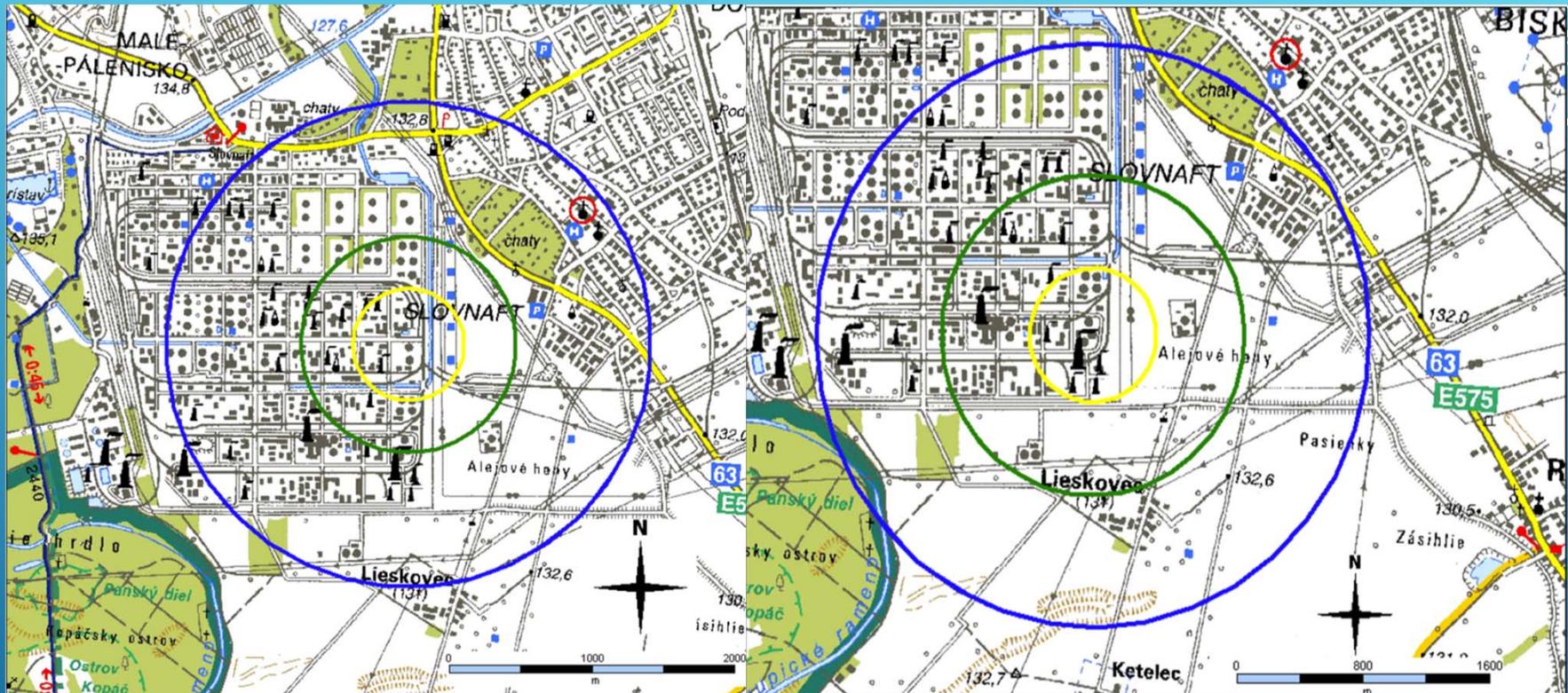
LPG STORAGE DEPOTS - spherical LPG tank 1000 m³, safety zone 1 – 400 m, safety zone 2 – 800 m

NEED FOR RISKS REDUCTION FOR LARGE LPG STORAGE DEPOTS IN THE SLOVAK REPUBLIC



LPG STORAGE DEPOTS - spherical LPG storage tanks, 1000 m³,
manufactured in late 70s, requirement on separation was applied

NEED FOR RISKS REDUCTION FOR LPG STORAGE DEPOTS



Obrázok 6.7.1.1.1 Dosahy tepelných tokov pri Fireball-e pre scenár B3- okamžitý obsahu zásobníka H6801 do záchytnej vane, SKP1

Obrázok 6.7.1.2.1 Dosahy tepelných tokov pri Fireball pre scenár B3- okamžitý únik obsahu zásobníka H101A do záchytnej vane - SKP2

- 37,5 kW/m² - deštrukcia oceľových zariadení
- 17,5 kW/m² - hranica, pokiaľ sa môžu priblížiť hasiči v ochranných odevoch
- 4 kW/m² - hrozba popálenín II. stupňa pri expozícii nad 20 s

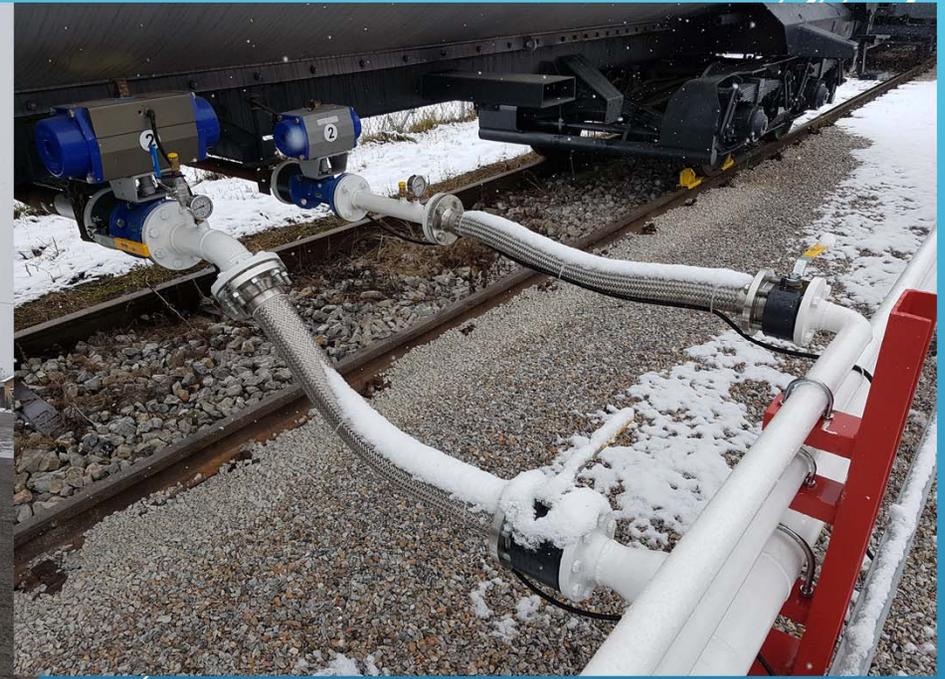
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NEED FOR RISKS REDUCTION FOR SMALL LPG STORAGE DEPOTS (100 m³ STORAGE TANK)



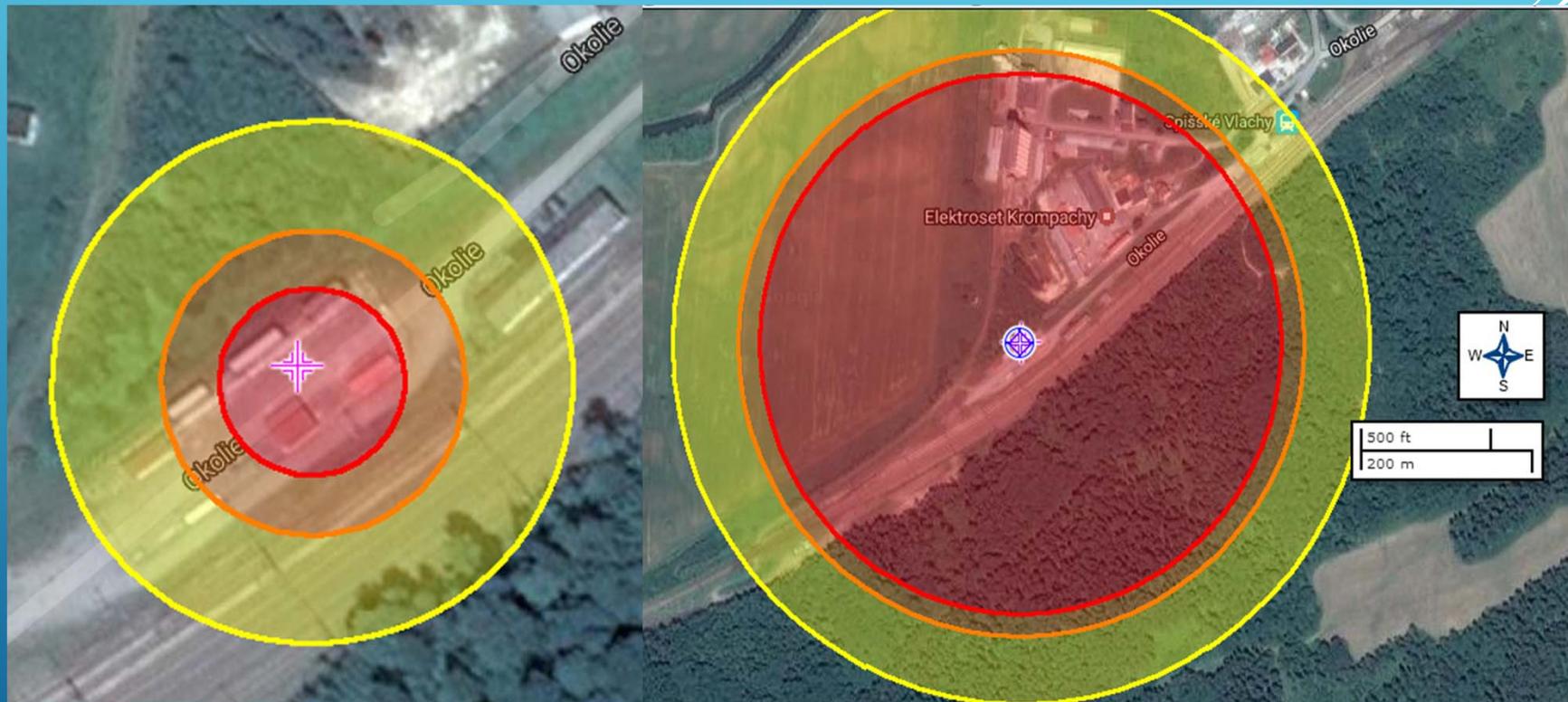
Small LPG storage depot < 200 t A category

NEED FOR RISKS REDUCTION FOR SMALL LPG STORAGE DEPOTS (100 m³ STORAGE TANK)



Small LPG storage depot < 200 t, inspection interval 36 months

NEED FOR RISKS REDUCTION FOR SMALL LPG STORAGE DEPOTS (100 m³ STORAGE TANK)



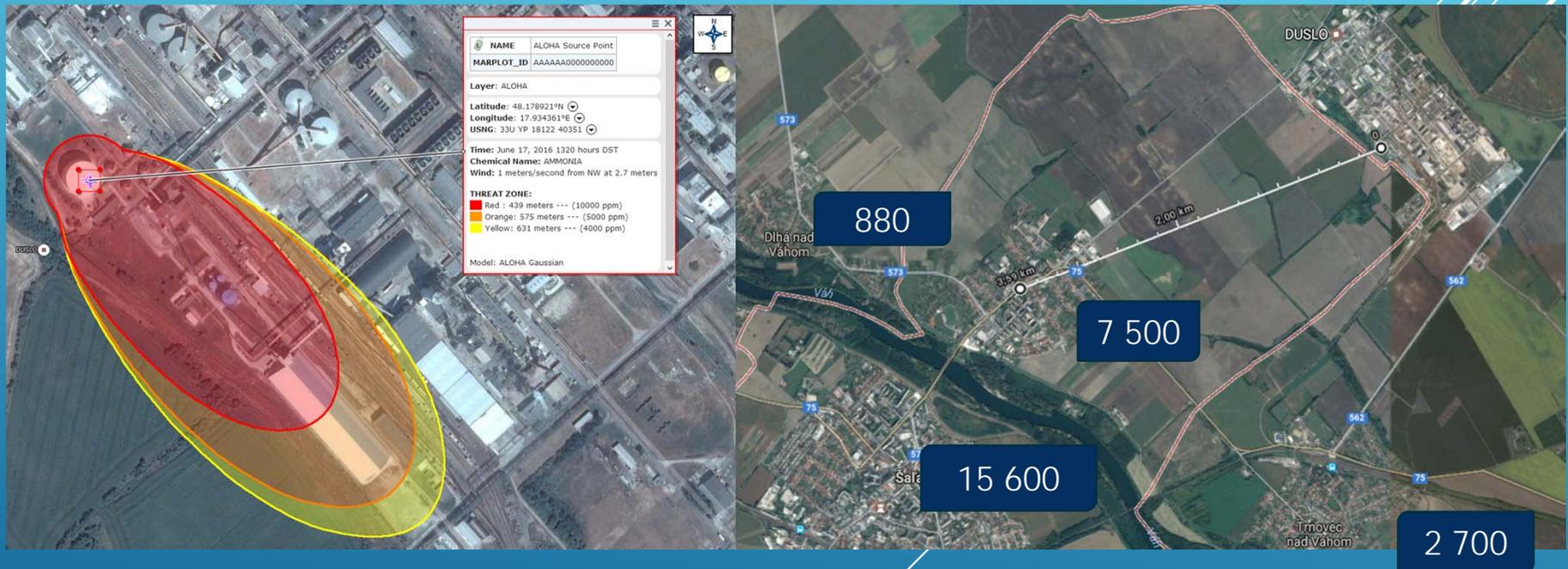
Localized in the vicinity of the railway stations and next to industrial zone

NEED FOR RISKS REDUCTION LARGE AMMONIA STORAGE DEPOTS IN THE SLOVAK REPUBLIC



AMMONIA STORAGE DEPOTS - LP- tank, 103.8 kPa (2.5 kPa, - 33 °C, 22300 m³ - 15000 t NH₃, h = 15 m, d = 43.5 m), ALDUR 50D, 1970

NEED FOR RISKS REDUCTION FOR LARGE AMMONIA STORAGE DEPOTS IN THE SLOVAK REPUBLIC



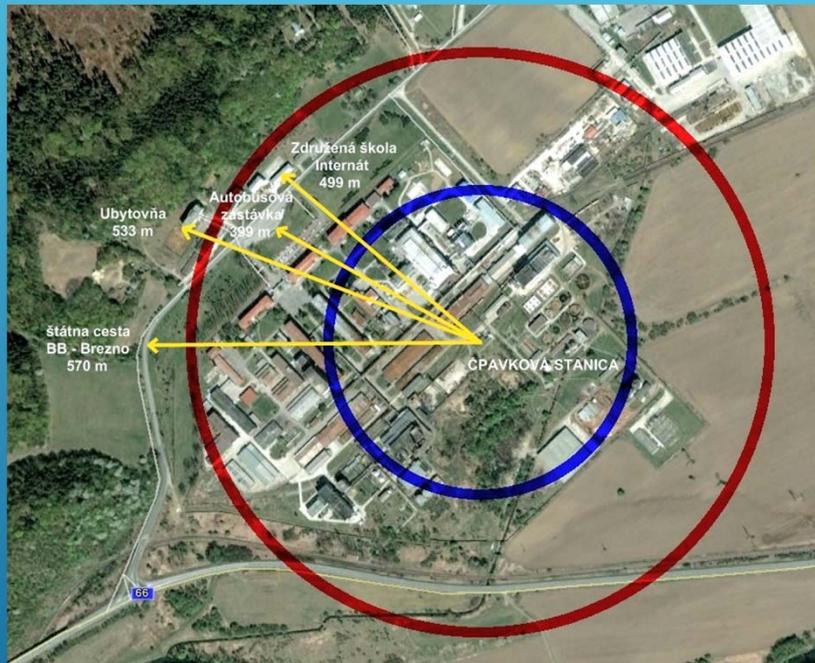
AMMONIA STORAGE DEPOTS - High population density (distance 4-5 km)

NEED FOR RISKS REDUCTION SMALL AMMONIA STORAGE DEPOTS IN THE SLOVAK REPUBLIC



AMMONIA WATER STORAGE DEPOTS - 100 – 150 m³ ammonia water > 30 vol. % , manufactured in mid 60s of the last century

NEED FOR RISKS REDUCTION FOR SMALL AMMONIA STORAGE DEPOTS IN THE SLOVAK REPUBLIC



AMMONIA WATER 32 vol. % STORAGE DEPOTS - Horizontal and vertical tanks 100-150 m³ , manufactured in mid 60s of the last century

NEED FOR RISKS REDUCTION - CONCLUSION

- ❑ company is not able to preserve safety distance
- ❑ public activities on modernization and reconstruction s
- ❑ systematic risk reduction (control and safety systems)
- ❑ shorter inspection and test interval for risk equipment
- ❑ Regular emergency preparedness trainings
- ❑ Precvičovanie havarijnej pripravenosti (internal and external)
- ❑ Companies with own fire brigades

NEED FOR RISKS REDUCTION

Thank you for your attention.

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