



REPUBLIKA HRVATSKA

MINISTARSTVO ZAŠTITE  
OKOLIŠA I ENERGETIKE

**RISK MANAGEMENT AND ENFORCEMENT ON LPG AND LNG SITES**

# **LPG Storage Inspections in Croatia**

**Nicosia, 26-28 September 2017.**

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# LPG Storages in Croatia

23 LPG SEVESO sites in Croatia

- 9 Uper-tier instalations
- 14 Lower-tier instalations

238 Under - tier instalations  
(non SEVESO)

Croatian Agency for Environment  
and Nature web site [www.azo.hr](http://www.azo.hr)



# LPG Storages in Croatia

LPG Storage CRODUX PLIN  
d.o.o. in Sv. Križ Začretje:



LPG Storage BUTAN PLIN d.o.o.-  
Zaprešić in Zaprešić



# LPG Storages in Croatia

Bottling unit



Cylindrical lying tanks covered with a layer of earth



# Legal requirements (SEVESO)

- **Environmental Protection Act** (OG no. 80/13, 153/13, 78/15)
  - *Article 228. paragraph 4 – coordinated inspection in accordance with annual plan of coordinated inspection*
- **Regulation on the prevention of major accidents involving dangerous substances** (OG no. 44/14, 31/17)
- **Ordinance on registry of installations containing hazardous substances and register of reported major accidents** (OG no.139/14)
- Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC Text with EEA relevance – **SEVESO III Directive**



# Legal requirements (LPG/ LNG)

## Legal requirements (LPG/ LNG SPECIFIC):

- Zakon o zapaljivim tekućinama i plinovima, Narodne novine broj 108/95  
(Law on flammable liquides nad gases, Official gazette no. 108/95,54/99)

[http://narodne-novine.nn.hr/clanci/sluzbeni/1995\\_12\\_108\\_1778.html](http://narodne-novine.nn.hr/clanci/sluzbeni/1995_12_108_1778.html)

[http://narodne-novine.nn.hr/clanci/sluzbeni/2010\\_05\\_56\\_1345.html](http://narodne-novine.nn.hr/clanci/sluzbeni/2010_05_56_1345.html)

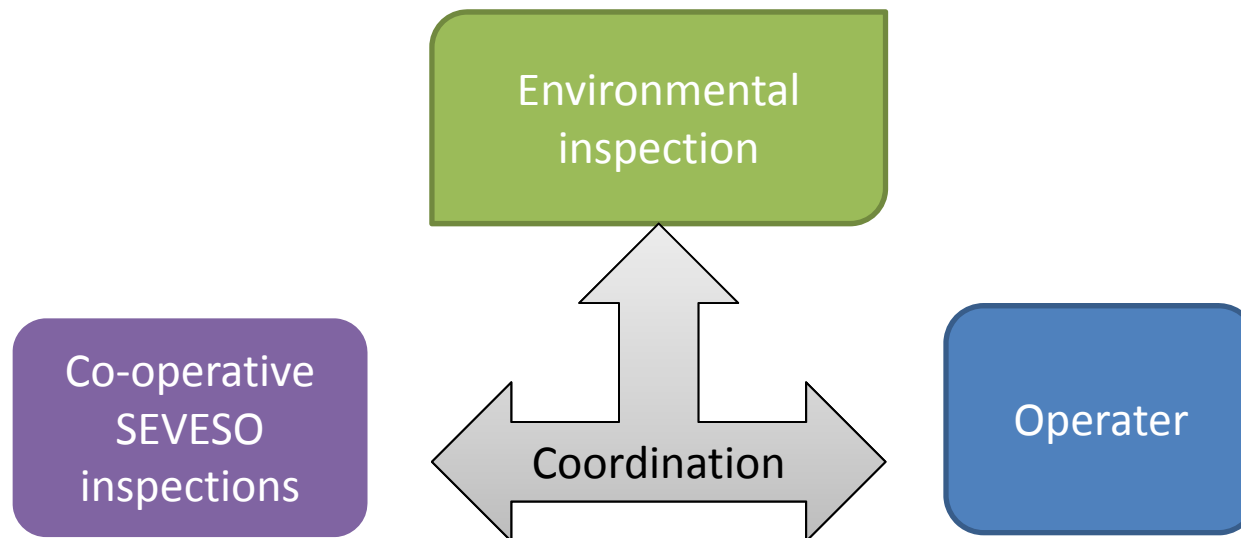
- Pravilnik o ukapljenom naftnom plinu, Narodne novine broj 117/2007  
(Ordinance on liquified petroleum gas, Official gazzete no. 117/07)

[http://narodne-novine.nn.hr/clanci/sluzbeni/2007\\_11\\_117\\_3417.html](http://narodne-novine.nn.hr/clanci/sluzbeni/2007_11_117_3417.html)

# Inspection procedure

Environmental inspectors coordinate SEVESO inspection:

- Annual plan
- Announcement letter to operator
- Site visit with co-operative SEVESO inspectors
- Follow up inspection
- Final report on inspection supervision





# Inspection procedure

## Cooperation agreements:

- Agreement on Cooperation of Inspection Services in the Environment
- Agreement on Cooperation with the State Administration for Protection and Rescue



# Inspectors' competences

Inspection of LPG/LNG facilities is a very demanding task.

## CHALLENGE

- General knowledge on the content and the spirit of SEVESO directive
- Expert knowledge in national SEVESO legislation
- Technical expert knowledge about LPG/LNG installations
- Appropriate skills in inspection techniques and writing reports

## ANSWER

- Environmental inspection is leading inspection body (good SEVESO directive knowledge)
- National SEVESO legislation is communicated with co-operative inspectors
- Co-operative inspectors contribute with their expert knowledge and inspection skills
- Reports of third party inspections are the key elements of inspection

# On-site visit

Inspection of LPG/LNG facilities is a very demanding task.

## CHALLENGE

- Coordination between different bodies
- Well prepared inspection with sufficient (not superficial) knowledge about the on-site processes
- SMS inspection SME sites
- Risk management system control

## ANSWER

- Annual plan coordinated with all CA
- Communication with co-operative inspectors - senior experts
- Safety report is communicated to co-ordinated inspectors
- SMS is partly inspected also by co – operative inspections (work safety instructions, fire protection trainings)

# Inspection of LPG findings

- Insufficient specific knowledge and experience of SEVESO inspectors
- Performance of coordinated inspection:
  - very few operators' people at the location
  - competency of staff
  - one person in the company covers several areas
- Safety management system – very demanding inspection - can be very difficult to assess
- Identification and risk assessment - still very difficult demand for inspectors and operator
- Poor spatial planning - residential areas at the fence of establishment



# Challenges in inspection LPG sites

- Are the right questions asked?
- What are sufficient measures demonstrated by the LPG operator?
- Are necessary systems and structures for major accident prevention in place?
- LPG installation risk recognition?
- Inspecting SMS - enforcement measures?
- Mitigating measures - enforcement



# Challenges in inspection LPG sites

- Difficult to recognize where important gaps are present
- Is the implementation in practice consistent with the written company procedure?
- Have all necessary measures been taken on site to prevent accidents and limit their consequences?
- Is there adequate communication and interaction between:
  - the authorities and the establishments
  - domino establishments,
  - Seveso and non-Seveso establishments
- Responsibility issues, change of site ownership from one owner to another or multiple owners





# RISK PERCEPTION

- Low awareness of the risk in upper tier LPG site
- Responsible persons of upper tier LPG site are sure they have taken all the measures needed to prevent the accident – „that can't happened to us”
- “Small” operators perception that the risk is very small, no risk to the local community.
- Licenced companies for drafting Safty reports often make Safty reports superficially and with a bunch of inaccurate data (copy-paste)





# RISK PERCEPTION

- Poor spatial planning
- Frequent complaints from local community, not taken into account by licensing authorities
- Potentially exposed communities have a limited perception of risk and no training in emergency response
- Large-scale disasters weigh more seriously in the public's mind than small-scale individual events.



# RISK PERCEPTION



Nikozia, 26-28.9.2017.

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ON LPG AND LNG SITES

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# RISK PERCEPTION



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# Conclusion

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- The need for guidelines or other inspection tools specific for LPG SEVESO sites
- Sharing knowledge and experience of LPG SMS inspection among inspectors
- Additional education and workshops for LPG SEVESO inspectors



**THANK YOU  
FOR YOUR  
ATTENTION**